

**THE INTEGRATION OF TRADITIONAL AND MODERN
ARCHITECTURAL FORM:**

A PROPOSED SOCIALLY ACTIVE CENTRE
FOR SKILLS DEVELOPMENT IN SOUTHERN AFRICA

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I

ABSTRACT

This research is a study of traditional and modern architecture and how the aforementioned systems can and should integrate into Afro-centric architecture. The emphasis was on the architecture one tends to enjoy as an African, explored and juxtaposed against the thoughts and theoretical frameworks of culture sensitive architects worldwide. In this dissertation, the aspects of integrative theory were explored. Primary theories dealing with sustainability, New African Architecture, Indigenous Knowledge and Semiology were assessed as well. The differences between traditional Africa and modern adaptations, both positive and negative, were the limit of the research. In the dissertation certain key questions are posed to drive the inquiry of the document. The hypothesis is the conjecture that a connection between modernized architecture and traditional semiotics exists and can be cultivated to flourish, developing African architecture at all levels. This conjecture acts as a base for primary and secondary research.

There are accounts listed in this dissertation of richly meaningful and sensitive traditional architecture that show a connection between American, Asian, African and European primitive building styles. These accounts show practices that have lasted near as long as the society that invented them. The gathered information shows that these examples have undergone little change over the years. The dissertation argues that the value these instances of traditional architectural meaning lessened over the years due to a shift in cultural paradigms. Further chapters in the study address cosmology, African attitudes to space, the reinvention of old materials and the manifestation and celebration of new tectonic relationships. Lessons collected on the above listed issues were related against findings from verbal interviews, written questionnaires and observations at the site of case studies. It is the researcher's desire to explore the potential for an integrative developmental institute. To this end, an assessment has been done both in the form of precedent embedded in the text and Case Studies of relevant buildings that relate to the subject matter of the dissertation. The analysis of these assessments shows a manifested potential for the integration of traditional designs with modern buildings.

II

DECLARATION

I declare that this dissertation was carried out exclusively by me; all works cited have been properly referenced in accordance with the Harvard Method. This dissertation has been written under the exclusive supervision of Phillipe Yavo, The dissertation is being submitted for the Master of Architecture degree from the University of Kwa-Zulu Natal Durban. It has never been submitted before for any degree or examination in any Institute of learning at any other university.

Chisomo K. Phiri

Date: _____

III

DEDICATION

This work is done in memory of my grandparents; Mandasi Kawiliza Phiri & Dorothy
Kazuwa-Migochi
Their love shines through my family.

IV

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I would like to thank my supervisor Mr Phillipe Yavo and my past lecturers for their advice and guidance most notably Mr Derek Van Heerden, Mr Yashen lucken and Prof Derek Wang. I thank my mother, Prof Isabel Apawo Phiri, and father, Dr Maxwell Agabu Phiri for their constant counsel and careful insight into what makes one who they are, emphasizing why culture is the axis of society.

I give special thanks to all my grandparents, late and current, their preservation of my families' tradition and culture ensures it survives through the generations. Their respect for their elders and traditional values has filtered into my personal ethic. I am ever in awe of the role of the Divine in my many academic experiences and give thanks to this Providence as well.

Lastly I thank my wife, Thokozile J. Phiri for her constant love and support as well as my dear brother, Kulezamtima Samuel Phiri, my sister, Cynthia Akuzike Phiri and my fellow students and friends for the constant pollinating of ideas through examples and discussions.

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CHAPTER 1

1.1 INTRODUCTION: AN UNSELFCONSCIOUS AGENDA

1.1.1 **Background**

Charles Jencks looks at the vernacular and traditionalist architecture as part of the unselfconscious school of architectural thought. In his book, *Architecture 2000*, he elaborates that there is little manifestation of the self in this architectural premise. Instead there is a great and keen sense of the whole or the community. Vernacular Architecture on the African continent is widely thought of to manifest in forms of shelter and housing within a culturally influenced settlement structure. Evidence of an advanced self-referential form, such as a library or public court, seems to be rare and where it does occur it seems to be somewhat circumstantially dependant. Colonialism and trade have often been interpreted as being the governing factors driving the forward development of architecture in Africa, particularly in the middle African regions. At the dawn of the new century it is sad to see that vernacular architecture occupies a marginal position in the world. The relevance of indigenous architectural practice seems threatened, its specific qualities at risk of being lost or overwhelmed by what the world considers “modernity” (Olivier, 1990)

Asquith (2006) elaborates further on Oliver’s work (2003) explaining that vernacular architecture at an international scale continues to be associated with the past, underdevelopment and poverty. There seems to be little interest among planners, architects and politicians in the achievements, experience and skills of the world’s Un-self-conscious builders or the environmentally and culturally appropriate qualities of the buildings they produce. Asquith stresses that modern day western culture has come to see the traditional methods and beliefs surrounding space and architectural meaning as an obstacle on the road to progress; this is described as being a new world ideology that seems to permeate into the greater part of worldwide educational and corporate systems.

There is a danger that ignoring ‘vernacular wisdom’ may prove precariously short sighted. The world is facing a dark future with the current rate of population increase ever rising.

With the climatic threat of global warming affecting more and more lives there is a growing demand for change. The issues of the current world seem to point towards a need to revise architectural priorities the world over.

There is an unprecedented need for building development that makes it essential for vernacular building traditions to be supported so as to empower the general public and cultivate good building practices at grassroots level. Assisting the local builders is important to improve the general quality of housing. At the same time it can also encourage a learning process to take place through which architects can learn from the knowledge and skills of traditional builders and the motivations behind vernacular building systems. Oliver (2003, 258-63) continues to point out that in the long run the very real threat of climate change and resource depletion highlights a need for sustainable practice, relying on parameters that benefit rather than destroy the properties of the natural environment.

African vernacular architecture has yet to find its form in the modern world. Each Country on the African continent boasts a distinct approach to architecture, a sign that modern African architecture must manifest a rich legacy of diversity. It is a pluralism that speaks of the many individual needs, dreams and desires of the African people. African architecture is only in its initial phase, the opportunity to marry traditional wisdom with modern outlooks and resources can easily result in a variety of new and original architectural developments that challenge world perceptions of aesthetics and functionality. Such a variety of new and original architecture must however respond to the pressures of the world felt most entirely on the African continent. Architects must understand the answer for a sustainable yet culturally relevant architecture is needed most here (Kultermann, 1969, p. 97). It would seem like the only way to solve the problems faced by the African people is to reassess the way Africa perceives architectural progress, harmonizing the pieces of wisdom from the past with the outer colonialist and westernized influences. Such an Ad hoc combination of relevant particulars would begin to echo true unselfconscious architectural enrichment.

1.1.2 Motivation/Justification of the study

The field of Unselfconscious Architecture is extremely broad making it difficult to determine a principled approach to its research. Vernacular Architecture, as a subset of unselfconscious architecture, can further be argued to be a pliable term that means a different thing to every culture.

The African continent is also a broad region with a great variety of architectural responses across diverse climatic and cultural conditions. Such a plethora of different environments and conditions once governed and guided the natural development of the African traditional and vernacular architectural systems. Kultermann, (1969) in *New Directions in African Architecture* believes it is time for this old, historically rich system of design to take the next step and find its way back into the modern architectural environment.

The world of architecture, African architecture in particular, finds itself struggling to respond to the impending threats of change in the world environment. The African continent finds itself in need of a response to these ever present realities. The answers for sustainable design proffered by the western world are highly advanced but also expensive and impractical for the common African Person. The African people need an approach to this problem that they can own. Through ownership a spirit of value can be cultivated making any positive change a permanent one.

Kultermann (1969: 97) argues that European and American architects far outnumber the African architects with Africa oriented solutions to African design. Almost all successful African designers were educated in Europe and America or by foreign educators in African schools. The result thus is a host of African architects more actively pursuing international or westernized post modern and modernist architecture.

Kultermann Begins arguing his case for a new African architecture by pointing out the need for African architects to participate actively in the pursuit of knowledge and the study of the African experience. Furthermore Kultermann believes that this participation will reveal characteristics that can become common prototypes upon which the African people

can rely on. This dissertation identifies what these characteristics could be and suggests how these characteristics can be interpreted architecturally into relevance for the present day African society, its value systems and its challenges.

1.2 DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.2.1 **Definition of the Problem**

The study on the nature of relationship between unselfconscious design and the modern architectural process is focused mainly on the African case and the premise that the two aforementioned schools of thought need to attain a congealed bond for African architecture to progress appropriately. The question of what should be interpreted as appropriate is however very open. Sustainability comes into the equation at this point.

In the present-day world the advance of the architectural discipline seems deeply rooted in attaining a good design approach at a social, environmental and economical level. These areas are within the range of architectural influence. Asquith (2006: 123) advocates that it is important for these factors to be considered in a contextually relevant manner. The sustainability of vernacular architecture is unquestionable. As buildings that did not rely on resources like electricity and water for construction purposes the environmental demand of vernacular architecture is light and highly resourceful. Often the designs maximize passive systems and utilize site provisions to the height of their feasible use.

As modern technology advances the dependence on vast resources for the construction and comfort of modern day architecture is starting to have an adverse effect on the world we live in. The high demand for housing, particularly in underdeveloped countries makes it difficult to employ costly processes that reduce environmental strain. There is thus a niche here for integrative practice. It is apparent that divining an approach that lends from the old vernacular construction principles lessens the environmental strain of current modes of construction and building design. Relevance can also be drawn socially as many old vernacular systems were moulded around the social family structures of the past.

An attentive approach to the social structure is just as necessary today as it was in the past. To maximize the value of the building by facilitating the cultures of a society, Rapoport (1969: 61) points to issues of basic needs, family, position, privacy and social intercourse as common factors in all cultures that need direct consideration in architectural development. The vernacular system of design revolved around this understanding. A look at the social decay currently observed at a global level is a marker showing how important emphases on social systems are.

Any effort to create or design a modern architectural intervention, particularly in the African context, should keep in mind the importance of vernacular wisdom and intuitive knowledge. Thus there is a need to prove this point practically for this will help motivate a response. Only when Africa based architects respond completely to vernacular architecture in the modern day context shall we see an appropriate modern African architecture be produced.

1.2.2 Aims

It is the prime intention of this project to pursue an investigation into the architectural probability of a balanced relationship between African vernacular architectural wisdom and the modern architectural advancements in technology and issue resolving process. The key objective being a test of this union in a contextually specific set of place, time and situation as represented in the case study.

The Case Study will be informed by precedential literature, architectural experiments and architectural instances that are deemed relevant and conducive to the project and its literal foundation. By assessing the relevant information it is hoped that a greater understanding of the past endeavours on the subject in question will help maximize the quality of the research, allowing a better understanding of the factors that could affect the outcome of the research. The creation of a harmony between vernacular wisdom and modern day architectural form will be a priority, all subsequent work shall be conducted with the realization of this harmony as a goal.

1.2.3 Objectives

The problems picked upon and precedential literature identified in the research study adds value to the critical analysis of the data accumulated from the case study. The discipline required for harmony between the unselfconscious and the modern does go hand in hand with the architectural pursuit for sustainable building design. By recognizing the import of this relationship it has become easier to identify where the case can be augmented and how applicable it is to the environmental context. The final outcome is likely to function as a unique example as to how the wisdom of the African architectural process can be employed in a modern coexistent building form. No level of comfort or functionality can be sacrificed to this end and true success is only accredited to the building proposed under this research should said building show evidence of performing better than a likened building of similar function but devoid of vernacular informed process.

1.3 SETTING OUT THE SCOPE

1.3.1 Delimitation of Research Problem

Many elements influence the Unselfconscious or vernacular building form and design in Africa. Building typologies have been introduced from various parts of the world. Colonialist architecture such as Cape Dutch, Portuguese, French, British and German style architecture all affect the nature and form of the African unselfconscious architectural process. This colonialist influence is highly responsible for shaping Africa into what it is today. (Kultermann 1969)

To attempt to understand the full extent the influence of colonial rule has on African architecture is at this stage far too great an endeavour and detracts from the main goal. This goal is to find what factors develop the integration of traditional and modern architecture. This dissertation recognizes the important influence varied colonial styles have had on the African built history but also recognizes that for successful results the research must be limited to the question of what pre-colonial architecture in Africa can offer the modern world.

It is in this somewhat “overlooked” family of design that the core of the African people’s identity lies. The research will stop at identifying principals linking the history of traditional building to the present day. Through literature reviews, questionnaires and interviews data will be collected that either supports or better defines this problem and shall go no further. The study will delve into this topic with the Southern African context in mind. Recommendations shall deal only with designs within this local context.

1.3.2 Definition of Terms

Unselfconscious architecture: Charles Jencks, a champion for the post-modern movement is renowned for his literary works on architectural patterns and theoretical systems. In his book *Architecture 2000* Jencks lists unselfconscious architecture as one of the six major traditions in architectural development. Movements such as folk architecture, vernacular architecture, eclectic, hybrid, DIY, traditionalist, consumer, mobile and adhocist architecture all fall into this theoretical category.

Semiology: The fundamental idea behind semiology and meaning in architecture is the idea that any form in the environment is motivated or capable of being motivated. Thus a form can at first seem arbitrary and unusual but by housing a function or activity can derive a meaning or give form to a meaning or activity. () The conveyance of meaning is important in developing or rather re-developing an African architectural style.

Urbanity: Urbanity refers to the characteristics, personality traits, and viewpoints associated with cities and urban area. The word originates from the term *Urbanitas* where in history it conotates refinement and the reality of a better state of existence. In modern language, urbanity still connotes a state of smooth and literate style an expression that carries its meaning to the architectural and social realm.

Adhoc: Adhoc architecture is architecture compiled of previously existent architectural precepts oriented towards a specific purpose or design. This movement recognizes that there are plenty of unique and individualistic needs not just in function but in environmental and sociological contexts.

Genre de vie: is the sum of concepts of culture, Ethos, world view and national character. First used by Redfield (1953, p85) to define the above and unify them under a “geist-force” driving a people to decide what they believe was right for them.

Culture: For the purpose of this study, culture is understood to be ‘the socially transmitted behaviour patterns, beliefs, institutions and processes of a given population or community’ (Maternowska 2000).

1.3.3 Stating the Assumptions

It is assumed by this project that the realization of a new direction in African architecture is necessary for the continent of Africa to develop into a self contextual individualized region that is creative, sustainable and transcendent. It is also assumed that the needs of the African people are unique precursors that demand a unique and appropriate style of design capable of reflecting the flexibility and plurality of the African populace.

1.3.4 Key Questions

1.3.4.1 Can Africa create an architecturally independent identity in architecture?

1.3.4.2 What more can the modern world learn from unselfconscious architecture in general?

1.3.4.3 A) What positive traits are unique to African vernacular?

B) And how can these traits be cultivated into modern form?

1.3.4.4 What would a balanced architectural statement for Africa look like?

1.3.5 Working Hypothesis

The relationship between positive African Unselfconscious Tradition and culture with the modern architectural advancements in technology and current social systems is currently imbalanced and detrimental to the African continent and its architectural identity.

A reassessment of this relationship, placing more weight on the African semiology could provide an architecture that more convincingly combines the tenants of a regions unselfconscious design principles. Such an approach could cater for the general specific purposes of the modern architectural environment and possibly cultivate the public's interest. Such a cultivation of interest can add a sense of ownership, making the resulting design intervention a publicly cherished resource rather than having it viewed as a vehicle for profiteering of traditional tenants.

In developing an architecture that relates to the African society at a core based level African architecture can then begin a journey not so heavily dependent on westernized influences. This may be a welcome intervention or it may be seen by the public as a resurrection of precepts better left forgotten. In the hope of carrying forward the unique, pluralistic and creative attributes of traditional African architecture, one deems this research necessary. Should the proposed research manage to develop a sustainable body of practices both at an environmental and sociological level then the research verifies itself twice and accomplishes not only a better approach to African architecture but a better approach to architecture in general.

1.4 CONCEPTS AND THEORIES

1.4.1 **New African architecture:** Roots of history, seeds of innovation.

The greatest cities in the world are old and constructed around principles of order that mesh the urban framework in an appropriate manner. These cities are by and large cited in a deep historical context, everything that evolves from this is a response to that historical context. (Lynch, 1990, p.109)

The Adhocist motivates for this culture to be preserved and maintained whilst other new modernist groups tend to veer towards the belief new and better urban arrangements should be integrated into dated city frameworks so as to maximize growth and functionality.

1.4.2 **Symbolism**

In a compilation of essays on vernacular architecture Asquith (2006) singles out work by Trevor Marchand who studies the vernacular architecture of Djenne (Mali). Marchand discusses the apprenticeship process of the masons in Djenne focusing on the dynamicism within a structured system. With Djenne being a World Heritage Site there has been much speculation as to the meaning behind Djenne's architectural history. Marchand carries the argument that the meaning behind the form of Djenne architecture lies not in the actual location and history but in its masonry traditions.

Marchand points out that it is the masonry apprenticeships seminal knowledge and system of education that ultimately defines the traditional structure. The Making gives the meaning. Semiology echoes this precept. It is then a point of interest to look into how past meaning can be re-introduced or re-conceptualized so as to reproduce the properties of culture and tradition in a new form.

1.4.3 Indigenous Knowledge

There is as yet no systemized approach to the informal and adhocist African super-ghettoes. African unselfconscious designs are assumed to be poorly conceived, Kultermann (1963) this is a general view encouraged by the corporate investors from various origins. This general view belies an underlying contrary truth that through the research vernacular unselfconscious design could enlighten or redevelop how we look at the way we practice architecture. As the adhocist sensibilities listed by Charles Jencks (1972) motivate improvisation sits squarely in the ingenious reassembly of existing components and theoretical ideas. Thus there is a potential ground for a revival of indigenous knowledge through simple reassessment.

1.4.4 Physical Determinism

Physical determinism is in a way an extrapolation of Critical Regionalism. The premise is that the site determines the nature of the building. This is a purely physical school of thought dealing primarily with the tangible challenges of climate, weather, orientation and ventilation. Things such as materials used, tech employed and forms resolved are believed by physical determinists to be directly linked to the over form and typology of shelter employed in the area. Anything contrary is seen to be in poor taste.

1.4.5 Spatial Anthropometry

It is a peculiar world view when the architect when seen as a practitioner is also seen as a symbol for divorced genius, above and beyond the confines of economic, environmental, structural and even anthropological restriction, challenging the advice of fellow practitioners so as to push the limits of the architectural profession. Payne (1968, 19-33) points out that all too often the value of the non-architects knowledge and contribution to the architectural field is sorely overlooked. The general body of architectural work is unselfconscious. Surely then there is knowledge in this field that is both innovative and fundamental. The relationship between people and the spaces they make for themselves warrants further research into how the public can be re-introduced into the building process.

The involvement of the general public will enable them, helping them to develop their own principled architecture by transmitting skills and understanding. This is the most celebrated method of transferring sustainable practices. It is strengthened by the fact that traditionally African architecture is by and large a social event that involves all factors of society.

1.4.6 Tectonics

Derived from the Greek term Tekton, Tectonic theory is a theoretical construct that attempts to quantify the strength of an architectural resolution. It has more to do with the height of qualities which are expressive of a relationship between form and force. When a structural concept has found its implementation through construction the visual result will affect it at a certain expressive level which clearly has something to do with the play of forces and corresponding arrangements of the given parts, Frampton K (2001).

The nature of tectonic theory however is beyond mere techniques and technologies. The celebration of junctions between items, spaces, ideas and concepts is at the heart of the tectonic process. It is far more than an attempt to solve structural issues creatively. Tectonic theory addresses the realm of phenomenological thought. We find practitioners dialoguing with issues of place creation and spatial identity. How things are brought together, integrated and resolved. That is a key issue for tectonic thought.

1.5. RESEARCH METHODS AND MATERIALS

Methodology

Integrative case studies within the City of Durban Cato Manor and the Mapungubwe National park were used. Intuthuko Junction, set amidst the informal Settlements of Cato Manor, holds a rich history while the Mapungubwe interpretive centre, boast a site equally rich in a history of a more rustic origin. Issues of social, constructional and contextual restraints were assessed. How the buildings integrated the opposing identity of cultures, construction methods and spatial arrangements was central to the success of findings. Norburg-Schultz (1976, 6) emphasizes a need for Varying locations of study within a unique environmental context thus Cases reviewed shall be at the very least 100km apart, to give a variance in demographic, climate and historical reference.

Analysis will be carried out in three ways:

1 Observing Environmental Behaviour

Traces of what occurs presently will be sketched, photographed and resolved into diagram format. Information gathered from archives and primary sources can then be reviewed in comparison to the observational findings so as to note what is present and relevant as well as what is not present and forgotten. After this process possible reasons for these discrepancies can be analyzed.

2 Standardized Questionnaires

Simplified questionnaires were drawn up (see appendix C) to better assess the relationship between the people and their own impressions of what African architecture was, is and should become. 30 Participants were selected ranging from various cultural backgrounds and population groups. The target selection was general. The nature of the questionnaire open ended to allow as many perceptual interpretations as possible. Men and woman ranging from ages 22 to ages 60 were consulted with varying degrees of expertise in the field of architecture, planning and housing. Participants freely divulged information and opinions but personal information such as age and names shall be kept clear of the research for confidentiality reasons. The questionnaire was used to verify the findings in the literature reviewed allowing public opinion to temper theoretical postulations cited throughout the document.

3 Focused Interviews

Interviewing the people local to the area developed a good impression of how much the past indigenous practices remain relevant today. Far more in depth interviews were carried out with architectural practitioners, lecturers, learned men, Traditional builders and government representatives.

Materials

Archives will be used to provide any background information concerning socio-economic or political factors, which may have influenced the development of the general traditional and environmental architecture. Any legislature that can be found encouraging integration between old and new methodology can also be beneficial. To investigate the cultural motivations of early settlements further, perhaps liaising with the Local principle on Malawian vernacular history will be effective.

Sketches and diagrammatic studies of vernacular architecture are vital pieces of information to help understand practices of the vernacular and traditional. 1st hand resources i.e. colonial and settler journals and records may be the rawest source for such information.

Maps and written studies will also assist in analyzing the climatic and resource limitations that may have affected the indigenous people and their design ethos. Agricultural records might also help as farming often made huge contributions to the architectural resolutions of early Malawian traditional settlements.

1.6. CONTRIBUTION TO KNOWLEDGE

The research topic undertaken in this proposal is by and large an endless evolving question of innovation. According to Constantinos (1963, p. 75) unselfconscious architecture is a field that covers 80% of the worlds built environment. As far as the body of literature is concerned there is the assumption that no existing style of architecture is openly recognized as successful “symbiotic modern and traditional African architecture”. There are however several attempts made to establish it. This is a niche that may lead to much more phenomenal insights into Africa and its next few sustainable steps into the modern world. There is much precedential work that can proffer much helpful knowledge as to what Southern African contextual architecture could become. Research into this field with a focus on a systems based methodology can help develop a more appropriate foray into the formalization of this illusive architectural field.

1.7. CONCLUSION

To conclude, this dissertation stresses that research in the field of unselfconscious architecture and its potential to develop highly appropriate architecture specifically for the African continent is a very promising and open field. It can prove useful in furthering both the theory of harmonics in African architectural processes and the development of culture in African modern design.

Current fields of development such as sustainable idealism, phenomenology, critical regionism and technocratic systemology should not be likened to this dissertation but should be understood to inform the direction this dissertation wishes to take. A relevant architecture for Africa should not turn its back on the western architectural discourse. It simply needs to find its own means to answer the greater questions the World seems to be engaging with. This can only be done by understanding the past and present priorities of the world's indigenous development, then adjusting these priorities into an African context along with the observed set of key form- dictating criteria. The study's success has been determined by the revealed bond between varied ideologies, conventions and concepts which can produce a building that augments the African architectural agenda

LITERATURE REVIEW

CHAPTER 2 ROOTS OF HISTORY AND SEEDS OF INNOVATION...

2.1.Introduction

Charles Jencks (1973, 49-50) predicts that as the future draws nearer accomplishments of a scale unheard of will ultimately shift beliefs drastically. In a post-millennium era this shift is felt all over the world. A general energy for reinvention has become the tide on which new-age theories have swept in. This yearning for reinvention changes the way we view space, form and the greater environment. It is this drive for progress that gives birth to new buildings the likes of which have never before been seen. This wave has inadvertently led to an unsettling belief. A belief that tradition is dead and history obsolete.

This Perception is championed by Kultermann (1969) who notes in his introduction to *New Architecture in Africa* that over the past few years the world has found itself constantly re-evaluating Africa's potential for growth via new systems of development. The discrepancy between the new and the old is immense, its perpetuation rapidly tumbling out of control. Today a visit to the African continent could see you facing a rondivel house, or shack dwelling when looking right only to face a high-rise corporate skyscraper when you turn to your left. Kultermann points out that there is a duality about African modern architecture that cannot fully be reconciled. Neither modern nor traditional developments in African architecture are pure arbiters of African architecture. We find however that both forms developments, by merit of adoption and innovation, have become a part of the African architectural spectrum.

The greatest cities in the world are quite old and constructed around principles of order that mesh the urban framework in an appropriate manner. These cities are by and large cited in a rich historical context. Everything that evolves from this historical context automatically becomes relevant (Lynch, 1990, p.109). Rapoport (1969) begins to note that traditional roots become lost in the mire of present day architecture. More often than not, we find that only the rustic areas of a country preserve archetypes of indigenous architectural history. This leads to a divorce between the old and the new, resulting in a loss of culture and identity.

Forgetting their culture and mannerisms then leads newer generations to slowly adopt a different cultural outlook. The result is then a slow preference for the context-less and alien. This is a dangerous slope leading to mimicry rather than open and vibrant creativity. Without creativity sustainable methods are lost. Culturally beneficial innovative processes are then neglected leading to negative development and a gradual loss of cultural identity. Kultermann (1963) argues that if Africa is to avoid such decay it must develop within its own identity and context. This should be a priority else the people of the continent be doomed to suffer the pitfalls of the developed world. These pitfalls are namely the struggle to maintain a healthy environment and preserve vital resources. Thus developing Africa outside of its own cultural control seems to adopt a trend for rapid negative growth within the society.

If we can imagine the architectural process as a tree then the history would constitute the architectural roots of that tree. In other words indigenous wisdom is the foundation of all architectural development, Heath (2009). The value of indigenous wisdom has recently become a topic of hot debate. According to an article posted on News 24.com (Nov 25 2010) due to corporate exploitation countries like Brazil and South Africa have openly attempted to recognize indigenous knowledge as an intellectual collective property, meaning it becomes a commodity, unique and valuable, that must be treasured preserved and managed appropriately to the benefit of all. This decision was taken in light of the exploitation of Amazonian tribal medicines and San Nomadic dietary supplements by pharmaceutical companies. The spirit behind this incentive raises a question. What about the indigenous *architectural* knowledge both primitive and modern? Surely this knowledge is too precious to be overlooked and far too precious to go underutilized.

Charles Jencks (1972) highlights the fact that the layman's approach to architecture is ever evolving. As specialist designers challenge the boundaries of architectural form, we find the respect for the indigenous process slowly erodes into obscurity. A type of hegelianistic attitude has been adopted by popular culture. Architecture is driven forward by architects of stature who advocate the "Zeitgeist". The Zeitgeist or "spirit of the age" is the drive of the time and is often manifest in the High-culture and the Avant Garde. This rush to the

future however is not all inclusive. It fails to cater for the evolution of architecture outside of high culture, doing this in spite of the fact such vernacular and traditional development represents the most prevalent form of shelter provision in the world. It is due to this attitude, Jencks believes, that the gap between the haves and the have-nots” shall incessantly continue to grow.

The adaptation of indigenous processes into African architecture is well documented by Udo Kultermann (1963 &1969). He analyzes both the new architecture in Africa and the new direction this architecture is going, showing that there is a constant process of adaptation at work. It should be noted that at the same time Rapoport (1969) begins to define this phenomenon of the ever adapting house form, describing its relevance to culture. In the book *House Form and Culture* Rapoport challenges the view of physical determinists by pointing out that every known criterion a physical determinist can adopt has at some point been proven, by the habits of traditional and primitive architecture in various parts of the world, to be fallible and at times entirely untrue. Rapoport does not mean to say a building should not be shaped by its environment. Instead Rapoport argues that there is more to be said about design than touch-surface determinism. He believes there is another level, yet to be realized, within responsible architecture. The environment we respond to, regardless of how important the environment actually is, is not the prime defining factor of design.

2.2. Moving away from modernism

Charles Jencks’ reflects on the future, musing that as it draws nearer an impending shift of core beliefs shall occur. To achieve an Integrative approach to architecture it is important to understand what these beliefs are shaping up to be. Being widely recognized as the person that coined the label, “post-modern” architecture, Jencks admits in an article on the *Rise of Post modern Architecture* (1972), that the title is highly indefinite describing a movement in the same way one might describe a woman by calling her “not-a-man”. It seems the world has chafed under this ambiguous successor to modernism. A more finite response to post-modernity becomes the new objective. The most prevalent systems within post-modernity agree on one thing. As quoted from Baker (2000, 2) many buildings

labelled “post-modern” still lack a unifying language. It is a question of what parameters within these buildings can actually cultivate positive social and environmental improvement. The general criterion for post-modern design is that it often fails to pursue a sustainable resolution born from innovative and naturalistic process. However within the structure of post-modernity, promising off-shoots have started to emerge...

2.3.The Adhocists

In pursuit of an innovative process several dominant schools arise, two of which deal exclusively with forming a benchmark for development. One school relying on adhoc sensibilities believes that creating architecture without socio-cultural context is a bad thing. A building that lacks historical reference easily becomes lost and misused becoming a convention for good taste and an excuse to deny the plurality of actual needs Silver (1972, 15).



Fig 1 Photo of Adhoc architecture at lightning ridge by Philip Cheverton, ci sourced from Panoramio.com (02/2011)

Silver explains further that a truly appropriate architectural approach denies a need to be recognized. Such architecture would take the ethical high ground by merely being satisfied with a good integrated architectural resolution that attempts to answer the direct needs of the potential inhabitants, their neighbours and the urban/rural framework within which they reside. (See fig. 1)

This adhocist method is characterized by silver to be functionalist, yet maintaining spontaneity rather than rigidity, playing with nostalgia, identity the superiority of the perceiver all to allow a blend of elements to produce harmony rather than entice conflicting positions. A settlement in Lightning Ridge New South Wales 2834, Australia has taken to the adhocist principle seriously by simply developing as an informal settlement much like the squatter camps found here in southern Africa. The camp was developed as a miners camp titled “Fred Bodels’ Camp” and is recognized as a genuine land mark of the South Wales community. (See fig 2)



Fig 2 Photo of junctions and joins at lightning ridge by Philip Cheverton, ci sourced from Panoramio.com (02/2011)

The architecture is a haphazard collection of local materials, all arranged to sustain remarkable success as a shelter. Elements such as gutters, insulation and sheeting have not been replaced in over a century, and the buildings undergo changes as time dictates. This approach expresses adhoc principles in their raw extremes. Structure is derived not from traditional values but rather the demands of the area and the need for shelter. A solution designed for a specific problem or task, specific and to which successful adaptation cannot be assumed by any other purpose or site. Jencks (1972)

To summarize adhoc innovation firmly draws from a rich and relevant pool of inspiration. Post-modernist in and about nature and the natural, it is a firm break from the structuralist Enlightenment pursued by modernists in an attempt to pursue the intangible Jencks (1972, p15-16).

2.4.The Neo-Modernists and a tentative approach to urbanism

On the other side of the spectrum another school of architecture emerges arguing that buildings without context can by their very nature create the context. By standing out, buildings can draw attention and publicizes the activity they house within. Thus by being different these buildings become a signature icon of intention for their environment. Renowned architect, Himmelblau (1980, 95) hammers this perception in place by labelling architecture of the past as *tense* and *restrictive*.

In an article taken from the *blazing wing action object* (1980) Himmelblau questions a democratic demographic that lives behind what he labels Biedermeier-facades. Himmelblau observes that a movement to progress in architecture is tired of the past Palladian strictures. The freed minds of the people should in kind be embodied in the freed forms of the built form. Himmelblau expresses it best in his statement that “architecture must blaze.” This school of thought casts aside strictures of convention, context and harmony rather encouraging a venture into all that architecture can possibly be. This is achieved by celebrating a) the fierce individuality of the creator b) the unique identity of the client and c) the general dynamic of the worldview.



Fig 3 Image of the Guggenheim art gallery in Bilao Spain Sourced from www.gsd.harvard.edu (02/2011)

Neo-modern architecture shares many of the basic characteristics of modernism. Both reject the free plying of ornamentation, decorations, and deliberate attempts to imitate the past. Neo-modern buildings, however, announce themselves by breaking away from the norm adapting an avant-garde stance, not really championing a cause but rather celebrating the right to break the pattern of the utopian modernist. Neo-modern buildings, like modern ones, are designed to maximize presence.

Neo-modernism diverges most sharply from modernism by using urban theory to maximize viability. Many of the tenets in New Urbanism are employed by the neo-modernist movement. Practitioners decline the “tower in a park” vision Le Corbusier advocated in support of a system linked network where buildings became integrated with the city, open to transit users, tourists and native citizens alike. Frampton (2002)

A beautiful and popular example of Neo Modernism would be Frank Gehry's Bilbao Art Museum (see fig 3). It is an architectural design that simultaneously stands out as an artwork in and of itself. It is a fashion statement, in its own way highlighting the use within in a way that completely breaks off from the conventional strictures that modernists loved to advocate.

When analyzing the Bilbao Art Museum building we find there to be a strict level of control afforded to random elements of décor. There is also a notable dialogue in material and facade treatment. Contrasts between materials talk of the permeable and impermeable compartments in and about the building. Contrast of out and in is further enhanced via portico treatment, accenting of simple columns and the tinted glazing nestled between the structure. This glazing allows light within without breaking the appearance of solidity in the outer facade. Several clever scaling strategies ensure the building speaks at a personal and universal level. (Jencks, 1972)

The neo-modernistic traits are all evident within the Bilbao Art Museum. The expressive way the building contorts as well as the way it negotiates the public in and around it, engaging them and celebrating the passage through and about the building in a way that almost reminds one of a dramatic actor posing just so to maximize the effect of the experience. It is a general building that, unlike the adhoc buildings in lightening ridge camp, speaks little of the local culture. Rather the Bilbao Art Museum dialogues with the tastes of contemporary society. From it we can deduce the "other" dialogue Neo-Modernism attempts to engage in. a dialogue at odds with the adhocist approach. Neo-Modernist It's as though a universal answer is being sought. Quite possibly achieving this Answer is not the point rather emphasis is laid on the eternal attempt to find it.

2.5. Critical Regionalism, bridging the gap

To analyze the two schools of theoretical thought mentioned above, a common set of links must be drawn. One finds that both schools of thought wish to transcend the past endeavours of modernism. There seems to be a unanimous agreement that the modernist movement was not an appropriate way to go about social and environmental development. Furthermore both schools of thought discussed above believe *themselves* to be more appropriate architectural approaches towards the selfsame social and environmental development of architecture. The development they both seem to aspire to is something that carries the world into a “better” future. This future is likely one laboured with less social, economical and environmental problems. So one thing is evident, modernism failed to find an adequate response. Ironically both adhocism and Neo-Modernism do not seem to do that much better.

All schools of thought in the post-modern era are challenged with issues of sustainability that must be addressed to promote their own success. Christopher Alexander (1965) points out that it is impossible to deny room for acontextual design. In fact it is highly likely that acontextual buildings, such as the neo-modernists produce, mould the environment giving it a character and uniqueness singular to the architect’s intention. Such intension ultimately benefits architectural discourse. Thus it must be admitted that there is significant merit in the pursuit of neo-modernist ideals. These ideals however are not the best approach to the human holistic vision of progress. Here we find the traditional adhocist principles and slight echoes of Alexander’s systems theory (1965) seem better equipped. Adhocist architecture is attuned perfectly with the phenomenon of spiritual essence, purity through raw need and appeasement. For example, in the honey comb houses in Tunisia there is a natural organic characteristic within the growth of a city. A building in this setting can do nothing other than merge and adjust to the needs of its inhabitants.

Ultimately Adhocism indicates that a level of sensitivity to the *Genre de vie* (spirit of the site) is required that caters and respects the cultures, traditions, mannerisms, spatial properties and symbolisms of a people. If one takes into consideration the fact that 80% of

the world celebrates unselfconscious architecture with roots firmly set in traditional precepts one can argue that any innovative approach cannot be divorced from such a broad base of identity-making architectural history. In fact it is suggested by Alexander (1965) that in analyzing and paying homage to historically rich context one can decipher the *genus loci*, revealing deep-rooted design primers that can lead to better and more innovative modes of contemporary design. The stark contrasts between a culture or context-centric philosophy (ad hoc) and a stylized theory focused on universal legibility (Neo-modernism) are resolved by Frampton in a paper titled “the isms of contemporary Architecture” (1983). In this dissertation and the chapter titled: prospects for a critical regionalism, Frampton is seen to build off the Frankfurt schools “critical theory” and the phenomenologist’s reverence of the specificity of space. (Nesbitt, 1996)

In lieu of the issue addressed by Karl Marx, Frampton admits that in the current turn to architectural fashion there lies a danger. Perpetual ad mass consumerism, for which there is no overriding rule, leads to the loss of local identity and expression. Thus in response to the insurgence of such negative trends within the built environment the wish of critical regionalism is to present an alternative answer. This answer is a case specific architecture based on two essential aspects, namely Understanding of Place and Tectonics. The Critical regionalist ideal would be an exemplary work of architecture that “evokes the oneiric essence of the site, together with the inescapable materiality of building. (Nesbitt, 1996)

2.6. Incorporating the spiritual and cultural into critical design.

The work of a critical regionalist takes many varied forms. The nature of this free flowing theoretical approach is always unique in its engagement of the site and its demands. Tadao Ando is an architect that engages liberally in conceptual projects. The natures of these projects give hints to Ando’s sympathies for critical regionalist theory. Frampton (2002) reviews Ando’s work, explaining how his projects stretch across the spectrum from hotels of leisure to houses of worship. As a self taught authority in the practice of architecture Ando attributes only two things to his architectural development. One thing being his study tours that marked his time spent during the sixties and the second thing being the spiritual depth of Japanese building culture.

Ando is renowned for his approach to spaces incorporating spiritual gravity. It is important to note how he draws links to cultural cues that manifest in the use of material, the treatment of facades and the provision and restriction of spaces. Ando was recorded to have said that one cannot simply put something new into a place. To Ando's mind, one had to absorb what you saw around you and what existed on the land. This knowledge could then be used in tandem with one's design ethos to re-interpret what design is produced. (Furuyama, 1996)

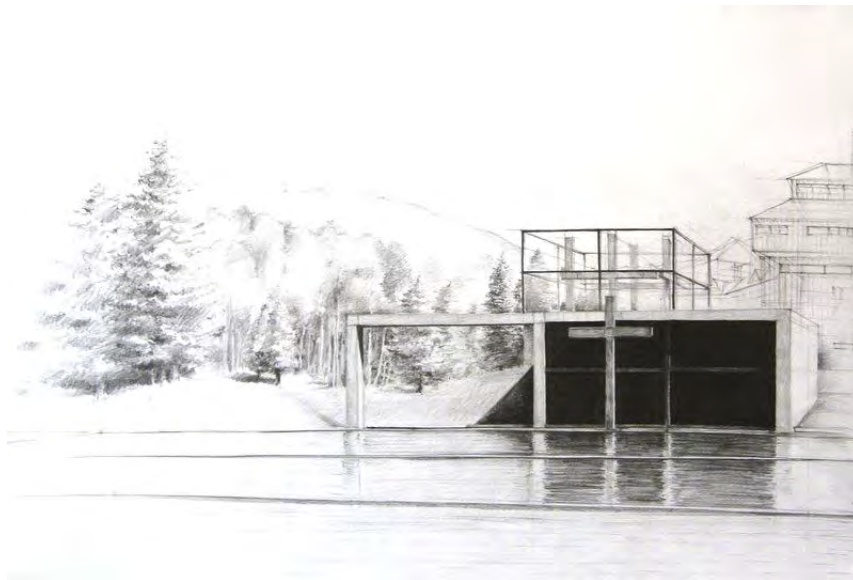


Fig 4 Image of Tadao Ando's Church on the Water Sourced from <http://www.arcspace.com> (06/2011)

This philosophy manifests itself best in his treatment of spiritual space. Ando's Church on the water and can be defined as a building that was erected at a time when Ando was particularly aware of nature, highlighting the beauty of the Japanese countryside, framing it in a picturesque framework composed of wall, ceiling and floor (see fig.4). Ando carefully positioned the church to take maximum advantage of the undulating, forested vista to which it faces.

The sign of the cross is even more prominent in this glass and concrete composition than the usual convention; its traditional significance is weakened through its quadruple repetition within a glass enclosure. The four crosses are absolutely symmetrical and equal in their respective axes. Since they almost touch each other at their extremities they deny

the traditional orientation of the church and in so doing imply a totally 'other' idea of the godhead. The resultant bounding figure, enveloping the void in the centre, makes it impossible to avoid a panoramic experience of the landscape. Frampton (2002, 310)

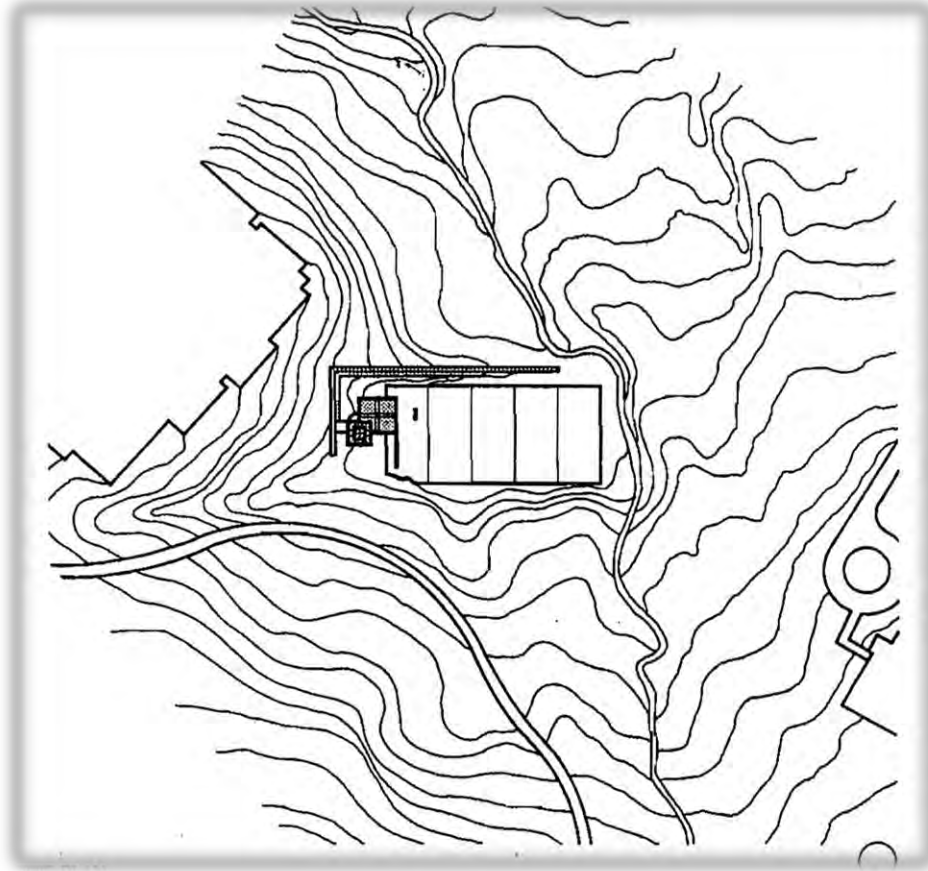


Fig 5 diagrammatic Site Plan emphasizing landscape sourced from *Precedents in Architecture* (2005, 18)

The design of the church on the water is an interesting building. Its approach shows a respect and appreciation for the natural advantages and natural beauty the site has to offer. (See fig. 5) The natural environment is not emulated but celebrated, augmented in a way that speaks of the modern spiritual. The Church is successfully immersed in the topography, taking advantage of the rivers' undulating patterns and the cooling winds channelled across the water. In responding to the site and the buildings surrounding it the Church maintains the historical aesthetic and matches it to the Christian spiritual experience. Use of thin, fine lines composed of concrete and steel allow for vast 'light' structures that are true to their intrinsic properties. The concrete is stark and cold; the timber is crisply lined and acute at joins and edges. Steel is welded with as little visible bracketing as possible. All this crisp simplicity makes for a wonderful contrast to the

natural environment. A visitor within the building feels uniquely connected to the surroundings whilst being held carefully apart. The repose across a field of water makes for a gratifying extension of space. Frampton (2002, 310)

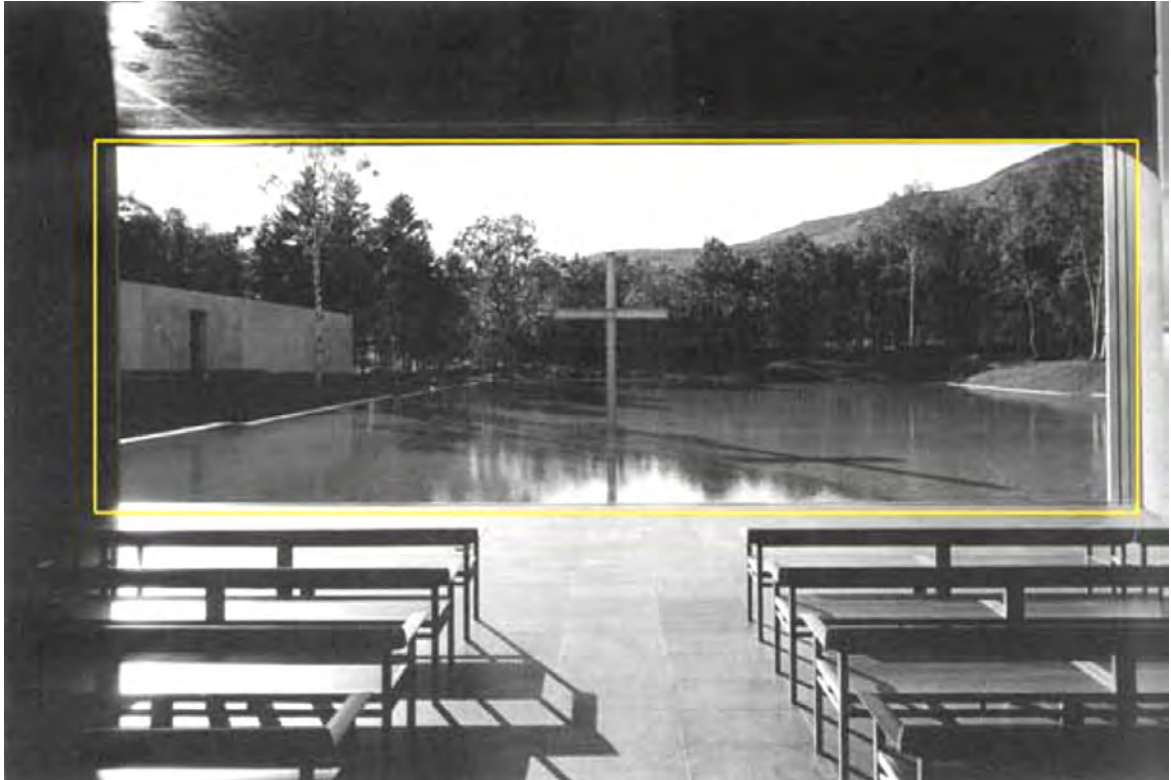


Fig 6 Image taken from book titled Tadao Ando, (1996, pg. 136)

The subtle introduction of basic Elements in Ando's spiritual work bring in an aspect of reflection that generates a positive meditative atmosphere from those within the congregation. The water becomes a calming tool while the ever present flood of natural light creates levity within the church building. This use of rigid form emphasizes the aesthetic of nature. This approach can be traced back to the cultural practices of traditional builders in Japan. Zen Gardens are a popular part of most traditional Japanese homes. It was important to make a showing of a well kept garden (see fig 6); this impressed guests, made a statement about the order of the house hold and became a spiritual place for quiet contemplation .Furuyama (1996)

To draw a more telling comparison between the old principles of Japanese architecture and Tadao Ando's own methods one could evaluate Ando's treatment of light and tectonics in his

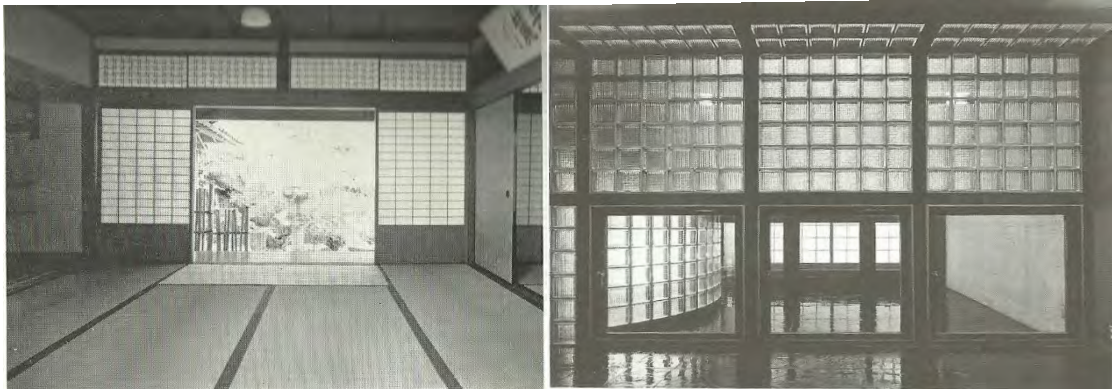


Fig 7 Left: Image of lattice framed garden looking out to nature and filtering light in to create contrast.

Right: image of a Glass block house interior looking through to the far wall opening. Sourced from

Labour, Work and Critical Present (2002, 43)

Glass Block House. Juxtaposing this house against the framework and joining principles of the Minka house reveal further connections between Ando's work and the Japanese culture.

In Ando's houses we find an ongoing dialogue between the present and the traditional cultures of the past. Ando, when asked about his use of concrete to address a lightweight history refers to semiological representation. Ando explains that the reinforced concrete frame has robbed the symbolic potency of the central Shinto column, a traditional and cultural bulwark in Japanese architecture. As a result a new sense of stability must be introduced. With this in mind Ando introduces the wall as a protective shield that is categorically opposed to the infinite space-field of the modern mega-polis. It becomes a new potent symbol for the Japanese home. Essentially the wall becomes a defining tool that sets the family apart from the multitude. Ando believes it is very important to approach the utilization of walls carefully. Frampton (2002)

The assumption of meaning in structure stems from the construction traditions of Japanese traditional houses. The wall was seen in Japanese homes as a key to spatial identity, defining how the home provided sanctuary for those that lived within it. In Fig 6 we can see the close relationship between the interiors of a traditional Minka house and the Glass Block house. The Glass Block house was designed to solve social estrangement within the family. As a result transparency becomes a running theme. If one looks at the opaque lattice and glass block partitions one quickly picks up on Ando's effort to create orthographic

panels that define varying levels of public-private space. This transparency of space was important in promoting visual communication, an aspect pivotal to the practices of Japanese family culture.

2.7. Conclusion

The idea of “building the site” refers to the critical regionalists’ notion that the site should be used the way it wants to be used. A site’s wants are implicit in its *genus loci*, its inherent properties hinting a preferable pattern of opportunities. This seems relevant foundation to argue a merging between traditional and modern languages in architecture. This is largely because critical regionalism looks at modern scientific methods to maximize traditional precepts. These precepts dictate what within a site is crucial to the nature of said building. Critical regionalism is not a theoretical approach that champions “vernacular” design though, it is more sympathetic to the adhoc principles that suggest a building should develop spontaneously in a way that can never be imitated, a child of not only climate and site but also culture, myth and craft. Frampton (2002, 471)

Critical Regionalism is more specifically a discipline that recognizes the limited constituencies in which it is placed, differing from adhocism by using localized systems and resources to the best possible result both technically and sociologically, finding a greater structure within a body of predetermined structures, in essence a microcosm of structuralist theory. Critical Regionalism echoes a cultural approach. For example the links between contemporary Tadao Ando designs and the classical Minka, indicate that reintroduction of culture into a modern discourse where appropriate can produce architecture with substantial originality and gravity.

This project thus leans towards the Critical regionalist approach, the reasoning being chiefly an accord with the premise critical regionalism caters to the chaotic nature of traditional and vernacular architecture, an architecture that holds widely adhoc tendencies with modern globalized structures and their development. It is clear through Nesbitt that Critical regionalism is a discipline that attempts to serve both the natural and technological. This bridging theory begins to speak of a platform for traditional and modern architectural integration both in regards to spatial treatment and site association.

CHAPTER 3 THE PEOPLE, CULTURE AND CREATION OF SPACES

3.1 Man and his spatial environment

Humans have always been fascinated by the relationship they share with their world and what lies beyond it. It is fine to admit that the natural world has always been our foremost source of enlightenment. Pearson (1994, 121) quotes Charles Correa who clarifies:

“If we are to know where we are going, we must know where we are coming from.”

This sentiment is echoed in the strategicians military manual the Art of War, where San Tsu reflects:

“In the pursuit of conquest a leader must understand heaven, must understand earth and Must be aware of the commanders role within these things”

-San Tzu, *The Art of War* (1910 trans.)

Both Men seem to have a common respect not just for precedent but for primal, naturalistic characteristic. San Tsu goes further to define how the sky(heaven) and the condition of the field (the earth) must be taken heed of if one wishes to defeat an opponent. To plough forth in chariots on muddy clay or marshland could spell defeat for even the most advanced military force if the opponent knows how to take advantage of this mistake. The motivation for the careful consideration of ones environment is therefore fairly serious. The history and native inhabitants become even more relevant to the architect who faces a far more patient opponent, time and place. In time all things decay, corrode and dissolve.

To this point architects have used attractive finishes to create commodity architecture. Such architecture is as desirable as any speedboat, motorcar or kitchen appliance. However these flashy modern designs quickly lose their centre and ,unlike a motorcar or speedboat, one cannot trade up the minute times demand it. It is no small wonder these flashy architectural designs easily lose their client base with the next fad. Commodity architecture is just an envelope. What architects need to address is the individuals these envelopes contain, how to preserve them and preserve the lifestyle that characterizes who they are.

If we are to look at Framptons discourse around the need for a tectonic design with nature sensitive architecture as a goal we come across an interesting point in history where architects, philosophers and critics alike begin to question the true route of development. Whats more interesting is the fact this discourse began in earnest as early as 1941.

Hans Sedlmayr (1941) comments on the continuous pursuit for capitalization in regards to natural resource and environment. He says:

“The shift of mans’ spiritual centre of gravity towards the inorganic, his feeling of his way into the inorganic world, may indeed legitimately be called a cosmic disturbance in the microcosm of man, who now begins to show a one-sided development of his faculties. At the other extreme there is a disturbance of macrocosmic relationships, a result of the especial favour and protection which the inorganic now enjoys. Almost always at the expense, not to say the ruin, of the organic. The raping and destruction of the earth, the nourisher of man, is an obvious example and one which in its turn reflects the distortion of the human microcosm from the spiritual.”

-Frampton (2002, 91)

Sedlmayrs observations on issues of cultural degeneration outline a clear central problem. It is our position in this Era to act as the rear guard, a last line of defense attempting to reconnect with what we are hurriedly running away from, our cultural tie with the earth. The Question is how to do it? Further research on the devices used by traditional homemakers should provide a better perspective. It is hoped a further understanding of primitive uses of space hints at a positive way forward. Thus the cosmologic belief systems culture cultivates and the way these sensibilities have incarnated in todays world are the next step in researching Modern and traditional Integration.

3.2 Cultural, Tradition and Cosmologic design

It is well and good to speak of things of mystery such as the pyramids and their world renowned status and star aligned myth and legend, but what of smaller more humble things? For several millennia the traditional act of building has been closely linked not just to shelter development but also spiritual completion. If we turn an eye to the primitive people of the past we find an ethos just as meticulous about their construction patterns as the ancient Egyptians. The primitive homes were built to be impermanent. Despite this they lack nothing in cultural significance. The act of building has power amongst these early societies. It is implicit in their compilation of settlements, in the settlements alignment to the natural world and in their philosophy towards the spiritual and physical universe.

Relatively speaking ancient tradition has but recently been abandoned by the westernized world. Till that point of abandonment many cultures adhered to the belief that our ancestors, a group's line of predecessors, showed their children the way, giving them grounding in the universe. It is through ancestral belief that we found our place amidst the earth and all the creatures within it.

Pearson (2005, 27) points out that the important thing behind ancestral reverence was the fact a majority of the ancestor based cultures saw mankind as part of the environment rather than above it. We thought of ourselves as cogs in the machine rather than the beneficiaries for which the machine was engineered. Thus we centred our lives in accordance to the seasons and the annual rituals of migration, harvest, hunting and construction. Such rituals coincided with the seasons, the phases of climate and the availability of resources.

Life was oriented about essentials. Mass production was non-existent so all fabrication was necessary, drawing from the natural environment lead to all elements being fashioned from the environment, echoing it and being a part of it. Today the popular approach to architecture lacks the quality of a location specific "soul" in both design and materiality. The international style speaks to everyone and in so doing talks to no place in particular.

Primordial shelters embody the cosmic order, encapsulating the teachings of the Gods. In this way they stay daily reminders for proper conduct to the people and the society. To understand the role ancients have towards tradition one can return to the treatment of the dead in primitive society. Structures like the Dorset Cursus where designed to bring attention to the ephemeral connection between this world and the world of the spirits, the universe and the greater forces that they were unable to fully explain. The Dorset Cursus was a huge swath of land enclosed by two parallel lines of gleaming white chalk, roughly 6 miles long. The Cursus connected several long burrows that directed the eye to the skyline when viewed from afar. Pearson (1994)



Fig 8 entrance to Knapp Burrow 2500 BC, similar in build to Dorset Cursus Sourced from Pearson (1994, 35)

The Cursus was a monolithic structure, clearly meant to last centuries. It was a bridge for the living and the dead, meant to give symbolic truth to the beliefs of the culture that constructed it. As explored in the previous chapter stone, then the most permanent

construction material was used with endurance in mind. The use of such a material to such a large scale however must have been an onerous and difficult task, the labour involved is estimated to have taken 10 million hours. Pearson (1994, 28) comments on the effect of the Cursus noting that at a time when forests covered the area this structure when complete would have had a remarkable impact on the mind and spirit of these early people.

Early human culture did not simply encourage the construction of monolithic references to their universe, they also took their Universal outlook and introduced it into the manner they designed homes. The Native Americans for example were very spiritual about their approach to house building. To the Pueblo Indians the link between earth and spirit was fundamental to their existence. They believed that their ancestors first lived in a world below the surface of the earth and that they travelled upward through the second and third “planes” to reach the “fourth plane”, a plane where humans exist. Above all, lay the domain of the powerful, life-sustaining spirits of sun and rain. These elements ensured a connection between earth and sky, a key part theme in many Native American craftwork and architecture. Pearson (1994, 32)

The rectangular Kiva, Miwok & Hogun all became interpretations of the Native American beliefs, using strong symbolism with deliberate placing to create homes that cultivated a comforting space, allowing these early people to feel one with nature. The Kiva was the purest archetype for the Pueblo Indians as it symbolically represented the way they emerged from their ancestral underworld home. The Kiva, entered by a ladder from the roof, had a ventilation shaft with damper, fire pit, altar, raised platform, wall niche, and a hole in the floor called the Sipapu. To the Pueblo Indians the Sipapu was a symbol for the place of emergence-the conduit through which the living commune with the spirits of the dead. In a way they saw it as the naval of the earth.

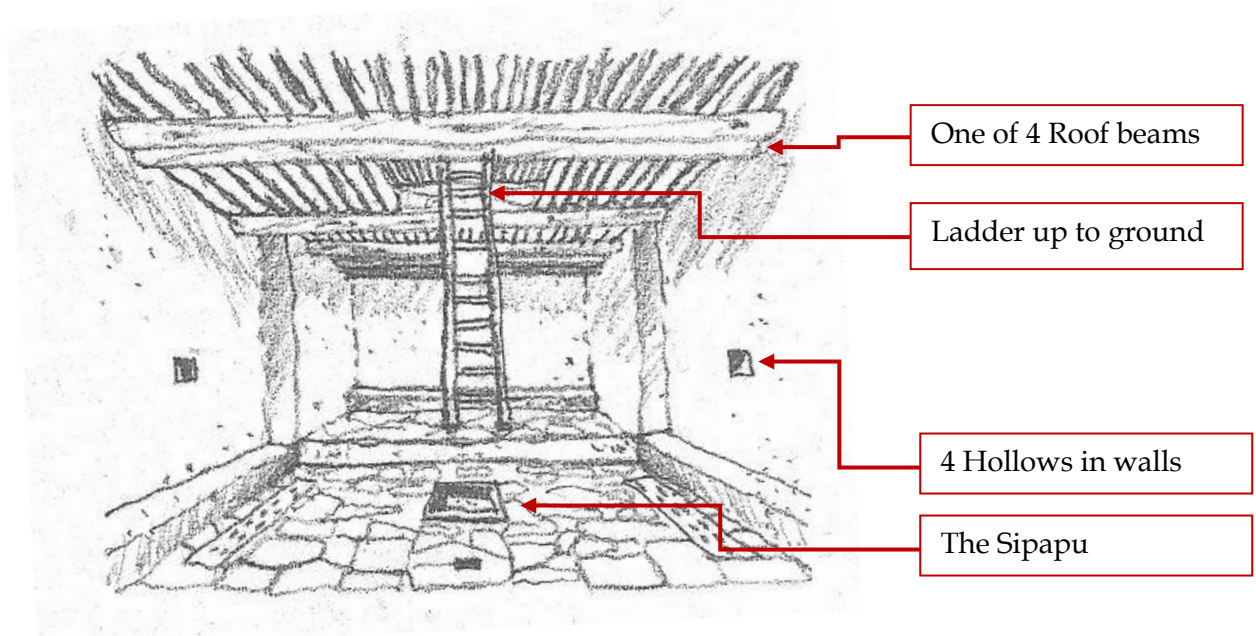
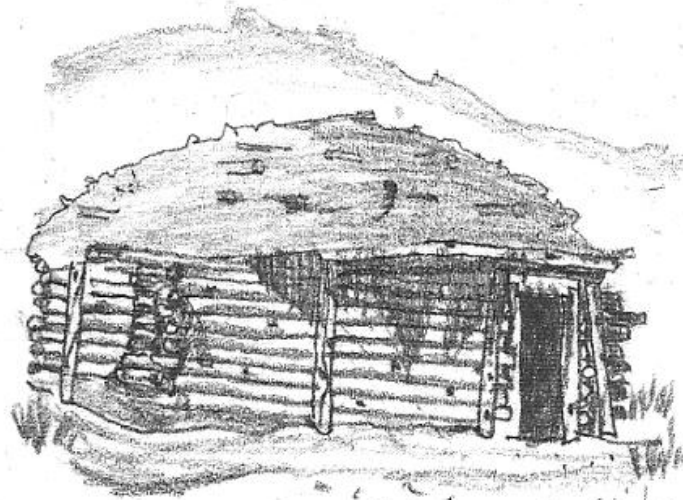


Fig 9 sketch of the Kiva Interior sourced from *in search of natural architecture* (1994, 32)

The Kiva is also associated by the Native Pueblo Indians as a symbol for the four world of emergence: the Sipapu being the first world (see fig 9), the place of origin; the main floor was second, where animals were created; and the end Platform was third, a plane on which rested access to the ladder that lead out of the top hatchway and onwards to the fourth and final world, the world of the living. The Kiva also served as a representation for the space within which Kachinas or deities resided. Thus the living space is at times a place for dance and ritual. Symbolically speaking certain parts of the home were attributed a character that represented the wider world. The four roof beams were the first four trees of the earth, the roof was the Milky Way and the walls were “the sky”, Pearson (1994, 32)

Pearson (1994) explains that the relationship between the Native Americans and the spirituality of the earth is not an isolated occurrence, indeed there are several similar accounts of cosmologically specific house forms amongst the Huns of Mongolia, The Chinese, the Zulus of South Africa and the Eskimos of Antarctica. For the sake of continuity another example of Native American house tradition, the Hogan, shall be reviewed. According to Demographics.com (02/2011) Amongst the Native American people currently alive today the Navajo, once known as the Dineh, are the second largest Native American clan actively practicing their tradition and maintaining their culture. Being a people that started off as farmers they harboured a great affinity for the earth, and the plants it gave “birth” to. Pearson (1994, 32)



*Navajo hogan (female) with
earth-covered roof.*

Fig 10 The Hogan (female) with earth-covered roof. In search of natural architecture (1994, 32)

To the Navajo, it would appear, the home or Hogan (see fig 10), as they call them, is a symbolic gift from their creation myth “blessing way”. Pearson (1994) gives an account of the story stating that According to this myth, the first man and first woman emerged through three underworlds to be met by a deity they call Talking God. The God proceeded to make them their first “home places” called Hogans. These were fashioned of natural materials immediately available. The design of the Hogan was split to reflect male and female qualities separately.

These were fashioned after the two sacred mountains in New Mexico referred to as the “heart of the earth” and the “lungs of the earth”. It was believed that Talking God set parameters for all homes to follow. These parameters were as follows. Firstly it was decreed that the entrance to the Hogan must face east toward the rising sun. This precept was common amongst early peoples, the Zulu people, for example, fashioned their kraals to align the central axis with the sunrise; Secondly the main support poles (representing mountain, water, corn and earth worlds) were to be set to the four cardinal points of north south, east and west. Under each post was to be placed pieces of the sacred “jewels” of white shell, turquoise, abalone and obsidian, elements that represented the sacred materials

Talking God used to make the very first home. These ward off evil by linking to the first home and the power vested in this construct. Pearson (1994, 33)

The very act of building a Hogan could then be surmised as an act of cultural worship, a respectful act of obeisance to the essence of all things. This cultural reverence for the building craft is also explored in Africa. Among the Lobi tribes for example the actual title of a builder was not much to speak of but the title of the Chief builder was likened to being a master of trade or a blacksmith, titles of some power among the early tribes. In the dissertation “the Making of Lobi Architecture” by Yavo (2003) an account of the spiritual and social power of a Master mason is given. Where among the Navajo and Dineh the act of building is done in careful respect and reverence of their common culture it seems the act of building among the Lobi peoples was a jealously guarded secret, officiated by a chief mason who was respected and feared in equal measure. Only through him could one expect the necessary authority, education and opportunity to work as a builder.

It is assumed that through lineage the builder can pass on the “knack” for design. All this cultural continuity is deemed important as the very act of building the cultural home is seen as vital for a regions success. The caste system amongst tribal cultures shall be explored further in the next sub-chapter but suffice to say the Lobi people believed in the cultural mystery of place making, seeing those blessed with the skills and lineage to be a privilege that could not be offered up lightly. It was even implied that any outsider that assumed the title builder was smote down by the arcane powers of the rightful Master mason. (Yavo, 2003)

Why then would the act of building be seen by the aforementioned cultures as highly important? Already we have picked suggestions from Pearson that the act of building extended beyond merely creating a dwelling, it branched itself towards worship, status and a symbolic celebration of a peoples universal outlook. A look at how these spaces were dwelt in is important to see just how spatial quality motivated social mechanisms.

3.3 Hierachy and Cohesion in Traditional Built Form.

In the above chapters we have found that the People are not slaves to the Genre de Vie of a place. But more times than not it is in their best interest to follow the cues that make their site unique. Indeed, there is a heavily physical aspect to the genre de Vie where materiality and climatic comfort are imperative not just to good design sense but survival. Through cues taken from the genre de Vie, the cultural essence becomes linked to the creation and treatment of social space. Something practitioners of Primitive architecture tend to practice at a cultural level.

Rapoport (1975) muses on the way aboriginal people Relate to each other at a tribal level. The Tectonics of their spatial relationships are reviewed in the book *Shelter, sign and symbol*. Rapoport establishes a framework, that dwellings essentially meet two functions. (1) Provision of physical Shelter and (2) the definition of symbolic and physical space. In lieu of this the aboriginal australian dwellings seem to fulfill a more shelter oriented function than a spatialy symbolic role. They have little in terms of symbolic rule, layout or use. The only mandate set to a dwellings functon amongst the aboriginal people is the insistance that a dwelling is exclusive to one family (see fig 11). This is motivated by strong cultural ties to the need for personal space within a tribe. Rapoport (1975, 41)



Fig 11 Image of the aboriginal paper bark dwelling sourced from <http://www.ssec.org.au> (06/2011)

Despite the dwelling itself possessing a simple role as shelter the complexity and symbolism of tribal hierarchy becomes apparent in the manner in which more than one tribe would gather together. When an aboriginal camp is struck Rapoport explains that the arrangement follows a clear and well understood set of principle rules. These rules may vary from tribe to tribe but they define clearly what is expected of the members of the tribes gathered. It is found that when several tribes meet their huts were grouped according to tribe. The spacing between groups being several times bigger than the space between huts within the group. The Camps were arranged in a manner that reflects the phratries and classes, the closer your link to the head of the tribe the closer your position to the centre. The most revered or respected tribe retains the closer position to the centre whilst the least powerful tribes are loosely scattered around the outer circle of the camp. Rapoport (1975, 39-41)

The aboriginals thus established a sense of place and order. Through this a structure of social cohesion through hierarchy is implemented. Rapoport expresses further how this was done remotely, independent of any permanent structural intervention. Place was given identity through the spacing of home settlements and their identification with the natural plants, rock faces and sloping landscape. Sense of place is thus reliant more on the symbolic process undergone to establish an area rather than on the development of the area

architecturally. This is a cultural tenant seminal to the habits of most Indigenous people of the Southern Hemisphere. Rapoport (1975, 41)

The traditional African settlement provides an interesting example of settlement design, particularly in how the defined open space of African settlements relate to contained single cell dwellings. It would seem the place of rest is not necessarily a place of living. According to studies by Rappoport (1969) then later studies by Heath (2009) and Pearson (1994) the dwellings themselves appear to be merely that, a dwelling, a place of shelter and rest.

The true cultural activity that surmount to the home at least by eurocentric understandings of the word, seems to occur in a modicum of compartmentalized open spaces. We thus find the existence of the internalized spaces within the limits of the externalized social spaces determines the hierarchical status of those internalised spaces. Simply put the powerful occupy the dwelling space of honour whilst those subjected to this power occupy less important dwelling spaces. Luckan (04/2011)

The whole is more significant than the sum of its parts. Amongst traditional builders the “home” is not the hut but rather the entire compound. Kultermann(1969) suggests that Villages by their very nature are a cluster home;. The traditional African house, in polygamous situations, is a home that revolves around a wealth of social links.

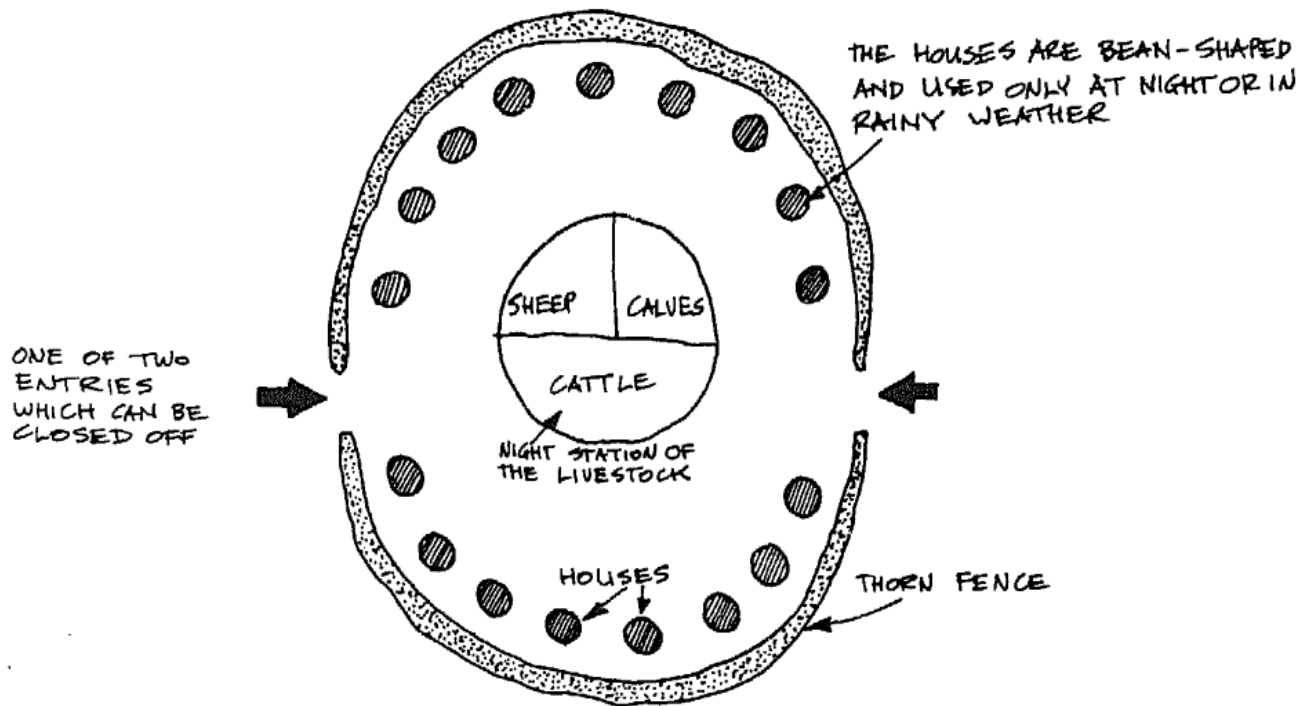


Fig 12 Masai compound (diameter approximately 130 ft) sourced from Rapoport (1969, 57)

Garland comments on African planning system. He suppositions that the African people all run a very common theme in the arrangement of plains-land settlements. The African culture of building around the centre is a well document phenomenon (fig 10). Since raiders and wild animals always threatened the traditional villages the wealth of said village often found itself placed in the absolute centre with living and social spaces occuring in a ring that protected the centre ensuring all had equal access to its resources and could observe and secure the centre if need be. (Rapoport, 1969).

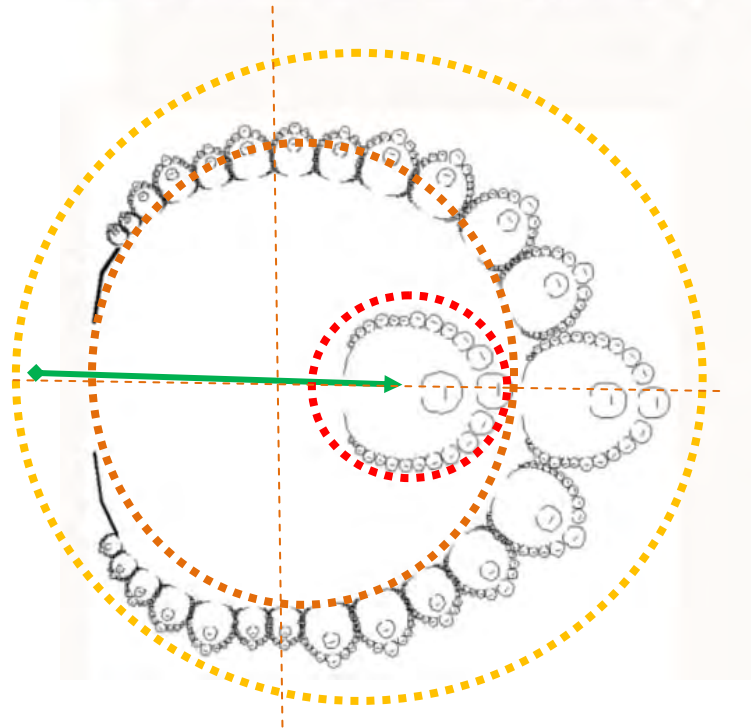


Fig 13 Bala Village sourced from Wikipedia.com (03/2011)

The Bala, a tribe that live in hot arid plains-lands are known to have nested fractal settlements that work at three levels. As shown in fig 13 they arrange their families in microcosms of the overall settlement. The most important family (red) connected exclusively to the chief of the clan often features in the centre surrounded by the families of his older sons and generals, his lesser wives and their family and lastly, closest to the entrance his youngest sons, and unmarried daughters along with minor guests and goats. (Heath,)

An important thing to note in all this hierarchy based divisioning of space is how much space the layout accommodates for the act of tribal living interactions. Rapoport (1969) stressed the import of this structuring in his chapters on social motivations for cultural

settlement arrangements. Visitors to a tribe can instantly identify the compound of those in charge. The axis and flow of entry is also a definitive marker of hierarchal sensibility. The safety of the Settlement was ensured by the single entry advance, often facing the rising sun insisting the visitor entered several rings of defensible space to get close to the head families, the cattle kraal and/or the granular wealth. (Rapoport, 1969)

The idea of a hierarchal division of space continues right through most plain dwellings in african society, permeating deep into the varied family units themselves. For example, in a traditional cameroonian polygamous compound several small dwellings or compartments, each managed by a separate wife where arrayed in a radial fashion around a common granary with the area furthest from the entry set aside for preperations and for cooking (fig.14). Within this set-up there was no mandatory place for the Man of the household, rather he slept in his wives huts on different days as he wished or met with them in a separate hut reserved for his personal activity. In such a situation the emphasis was on the central granaries. As can be seen in fig.14, the principle wife oversaw the management of the resources in accordance with the mans will. The children of this wife were usually formally charged with the shepherding of the families best and most valuable livestock while the head, in this case a farmer, saw to the fields. visiting such a family would see one meet the head of the family outside his principle-wifes hut. This all promoted a simple sense of hierachy, juxtaposing the head of the home against his wealth (wives, grain and minor livestock). Rapoport (1969)

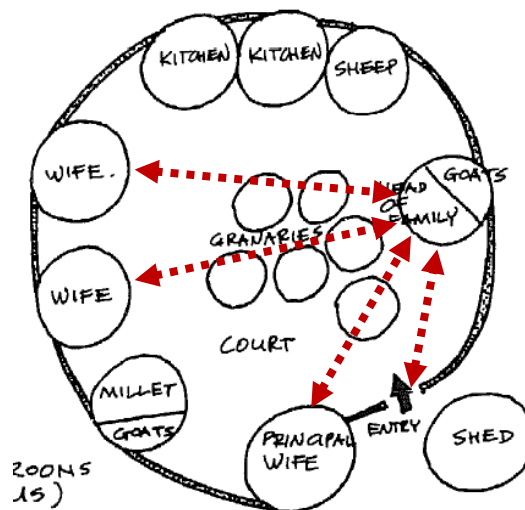


Fig 14 Cameroon house (Polygamous), Taken from Rapoport, House Form and Culture (1969, 56)

It would seem that the polygamous family dynamic had to be adjusted as cultural norms began to shift, often from the adoption of Christianity, a widely monogamous religion. The resulting monogamous family structure was adapted among the tribal villages of Cameroon (see fig 15). In this case it appears that the head of the family is attributed a position of power, being the “control” for all formal entry and exit through the dwelling space.

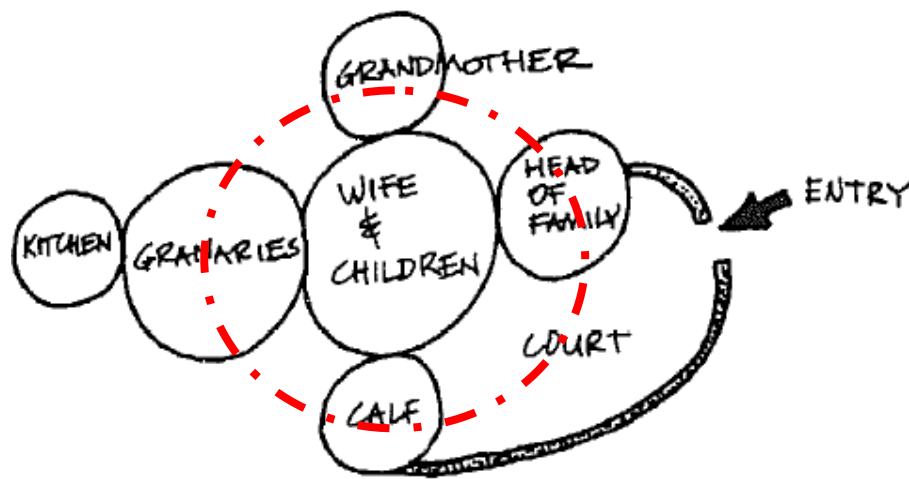


Fig 15 Cameroon house (monogamous), Taken from Rapoport, House Form and Culture (1969, 56)

The system of Hierarchy in traditional architecture is a physical manifestation of the nature of relationships within the tribal context. By adjusting to a social structure that shifted the family arrangement the emphasis of hierarchy continued to translate as well. Arguments have been put forward regarding the adjustment of homes to be a simple catering for a cause. The less need for open expansive homes equates to a lesser need for the provision of circular design. Rapoport argues that this extends itself a bit further than merely the accommodation of a redefined need. He discusses the manner in which the subsidiary rooms reflect the role of the single wife.

In fig. 15 The children and wife are placed in the centre of a cross. This can be an interpretation of the woman's station. Now that she is the only woman in the house the settlement is arranged for her to serve her family. She is first to access kitchens and granaries. She is a caterer to the elders of the family and she is in constant care of her children. The Man of the house is situated far from the “chaos” of the inner dwelling. This allows him easy access out of the building should he need to work in the field or should he

not wish to talk to any guests. If the head of the house wishes to commune with the family he can do so in the court, all young livestock are also readily available to him for slaughter and preparation. The synergy of the home is thus quite intimate. (Heath, 2009)

Camerooni culture is unique, the tenants of their buildings are constantly in flux with the station and role they hold in the family. Oliver, (1997) discuss how closely knit the practice and process of house building relates to the practice and process of culture itself. Even the most intimate space is given regional qualities. Much like the Hogan has a “sex” determined by the construction methods implemented the Zulu Hut social spaces have a “sex” determined by axial divisions within the home. Biermann (1971)

The Zulu Hut Itself is a constant negotiation of social structure. Biermann (1971) and Denyer (1978) both touch on the subject of spatial divisions within a traditional home. The symbolic properties held by the cardinal points is very important to a sense of propriety within the Zulu hut, or Indlu. In fig 16 we find the home is divided into a male side and a female side. In the centre a fire for cooking was placed with a shrine for the ancestors, the umsamo, placed at the far end of the central axis.

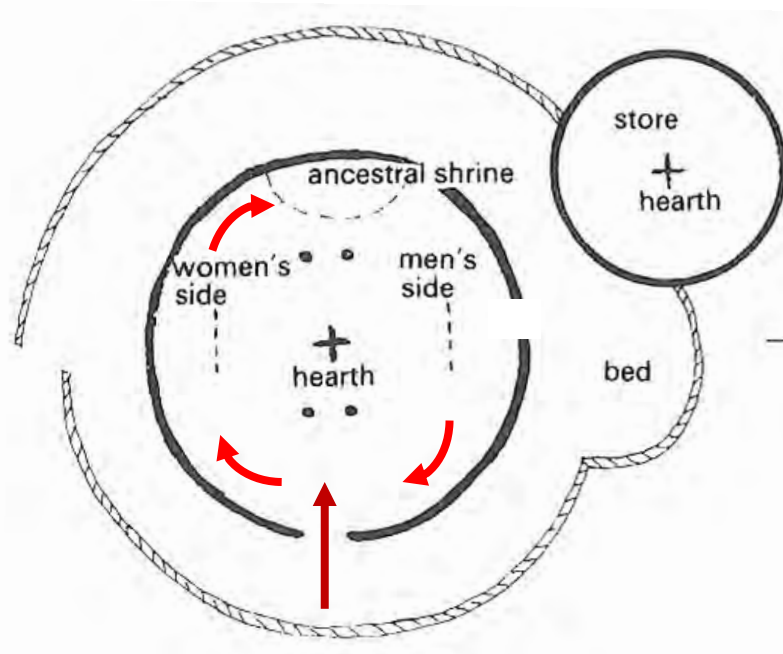


Fig 16 Typical Spatial Planning of a Southern African Zulu Hut sourced from Denyer (1971, 111)

The rationale of the division is purely cultural with anchors in the belief that a woman is a chaotic energy, which must live separate from a man who is a rational energy. These attributes associated with the sectioning of the Indlu determined the living style and living conventions of a zulu man and his wife.

Only the youngest children of the family could be expected to enter such a hut unannounced and even then they were restricted only to the left (female) half of the dwelling. Over and above this a visitor in this space was expected to circulate the fire in a clockwise direction, travelling around the woman's side, passing the sacred seat of the ancestors and finally arriving at the man's side. Should the visitor take a contrary path they are deemed rude or an enemy at which point the man can take action to defend his home.

It is clear that the early practices of culture and clan put emphasis on spatial relationships to better understand one another. We find practices between Native Americans, Native Australians and early African tribes hold consistent themes. First of within these themes is the import of space in relation to spirituality. Second is the import of space in relation to status. Lastly we find emphasis on space in relation to family. In none of these cases do we find an overarching need for homes to shelter a closeted lifestyle. Relating with people and the act of living are considered one thing. Both activities are expected and encouraged outside the dwelling. It is then most interesting to see how these rustic principles could be interpreted by modern means.

3.4 Markers of traditional Spatial cohesion in Modern design

Udo Kultermann (1969) Looks at the development of the African architectural process. During the 60's certain countries within africa began to ascertain independence. As independent states they began to liase with the International world on architectural endeavours that began to consolidate the identity of an african architecture in the modern world. Several interesting examples of architecture inspired by particularly African concepts were developed. They manifest in educational, social-cultural and residential fields of design.

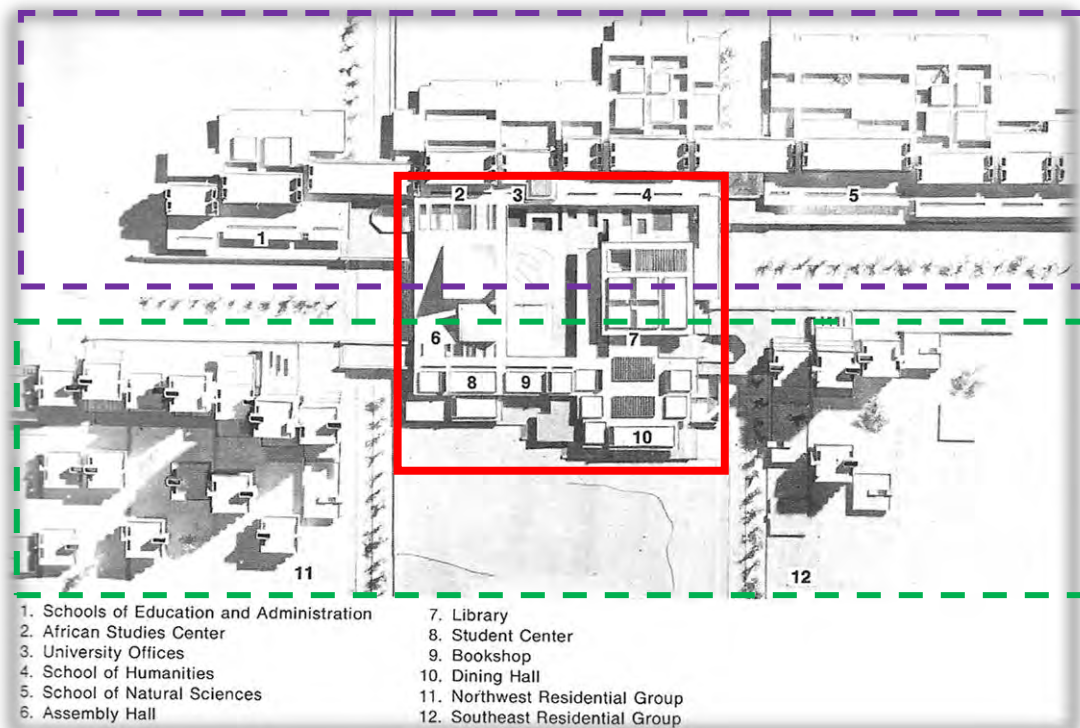


Fig 17 University of Zambia, Lusaka, Zambia sourced from
New Directions in African Architecture (1969, 46)

In 1965 Julian Elliott, chief architect Douglas Yetter and Anthony Chitty put forth a proposal for a new university complex in Lusaka Zambia (see Fig 17). This project began a year after Zambia attained independence. In its conceptualization the universitys use of two external parallel components were arranged in a manner that seperated work (school faculties in purple) from play (residences in green).

These two components are connected in the centre via a meeting hall, a student center, a set of dining rooms and the central library (area highlighted in red). It seems the Library is closely tied to all major social activity. In this way the centre of the university campus, in effect, hosted the “wealth of the compound”. This “wealth” being the Books and resources essential for study and student interaction. Kultermann (1969)

Kultermann continues to draw a comparison between the University and the plains-land settlement of a traditional village. The design by Yetter, Elliott and Chitty emphasizes core social qualities, a spatial tectonic is excersized that binds the university community around the negotiation of open space. a very African system of dwelling division.

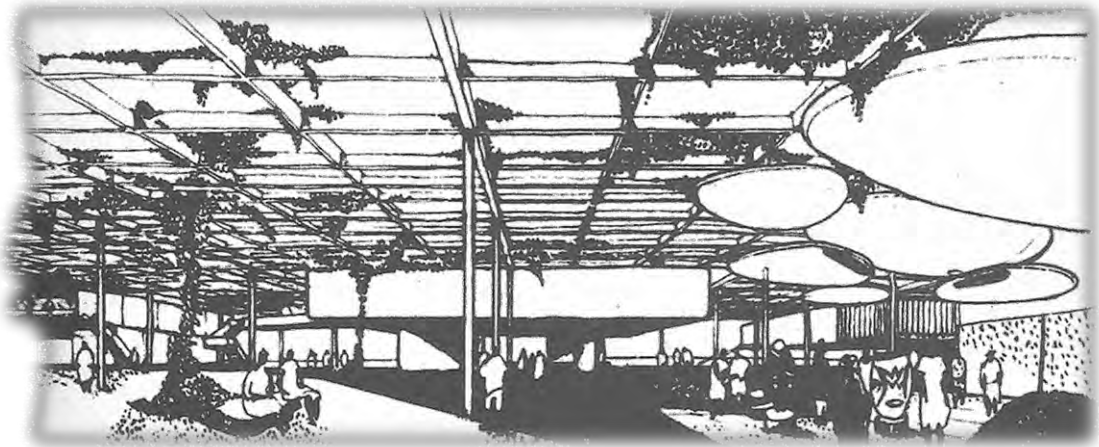


Fig 18 Interior perspective of Yoshizakas Cultural centre design sourced from *New Directions in African Architecture* (1969, 53)

Further examples of afro-centric design manifested in a set of proposals for a social cultural centre in an african setting. The first example was put forward by Takamasa Yoshizaka, an architect whose design won first prize at an international competition (fig 18). Yoshizaka designed a cultural centre that was essentially a closed complex housing two auditoriums with a set of museums nestled inbetween. The two museums contrast in nature, one being an outdoor museum while the other is enclosed and connected to a study centre.

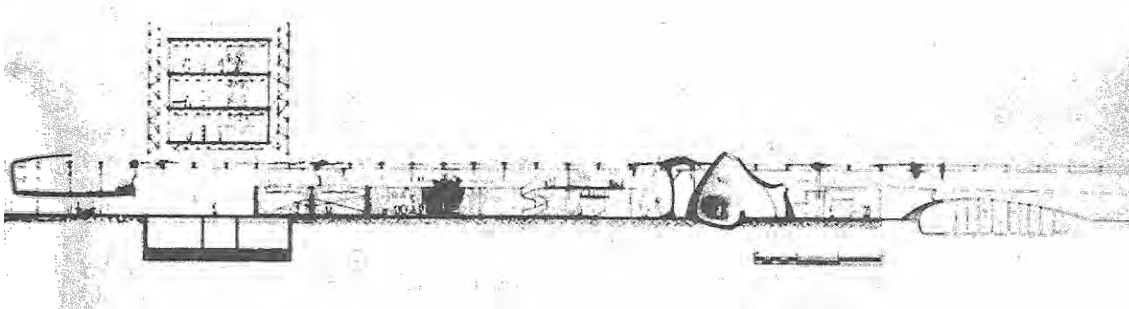


Fig 19 Section of the Africa based Cultural Centre complex designed by Yoshizaka sourced from *New Directions in African Architecture* (1969, 53)

The use of dynamic curvilinear forms in the proposed design (fig 19) showed imaginative interpretations of pliable African buildings. These were expressed best in the cave-like rooms of the study centre and the auditorium. Kultermann notes that this architectural approach was potentially a generator for a genuinely afrocentric architecture. The applications for the well shaded and open proposal showed great potential. Kultermann (1969)

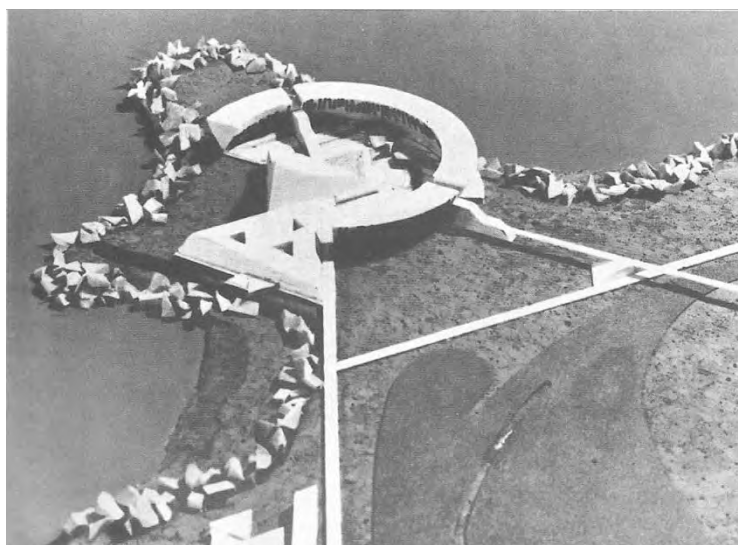


Fig 20 The Cité des Arts, sourced from *New Directions in African Architecture* (1969, 53)

In the Cité des Arts (Fig 20), D'Olivio groups the various cultural buildings, namely the Library, dancing school, museum and so forth, and incorporates them in a three quarter circle that gets punctuated by various forms carefully accented by triangles in both layout and elevation. It seems to offer a unique perspective, marrying simplistic geometric form to

incorporate the African sense of community within a unique social structure. Its positioning on a mini peninsula seems a bit staged. Furthermore D'Olivios design uses triangulated lines of reference to establish a unique connection to the land.

Of the Three Examples of a social-cultural centre the most critically planned would be the cultural centre by Olumuyiwa. The building in its entirety is a combined technical institute, teachers complex and community center. The heart of the complex contains an elevated entrance area with offices, assembly hall, two-storey foyer and music rooms.

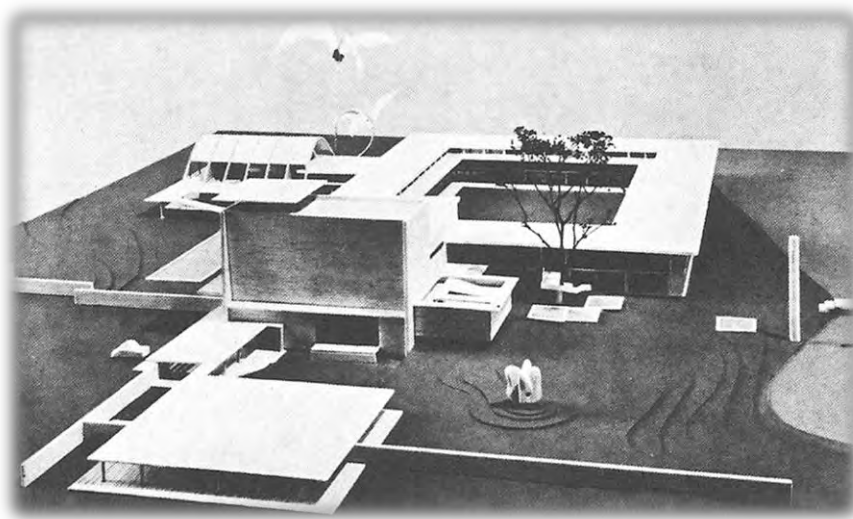


Fig 21 Olumuyiwa's proposal for a cultural centre in Nigeria, sourced from *New Directions in African Architecture* (1969, 54)

From the entrance one then travels to an area housing elevated workshops around a rectangular court. The gymnasium, covered by a glass barrel vault roof, and a lower-level area with kitchen and dining rooms are placed to the side of the main complex, all connected by a covered walkway. There is a ramp that allows access to the upper level of the gym and another allowing access to workshops. The complex has a large parking lot near the entrance. This is separated by a planar wall that privatized the garden and interior space. The entry is also given character by an open outdoor auditorium. Clearly the activity of performance and socialization is connected to the outdoor spaces, much like the African boma, central kraal or granary.

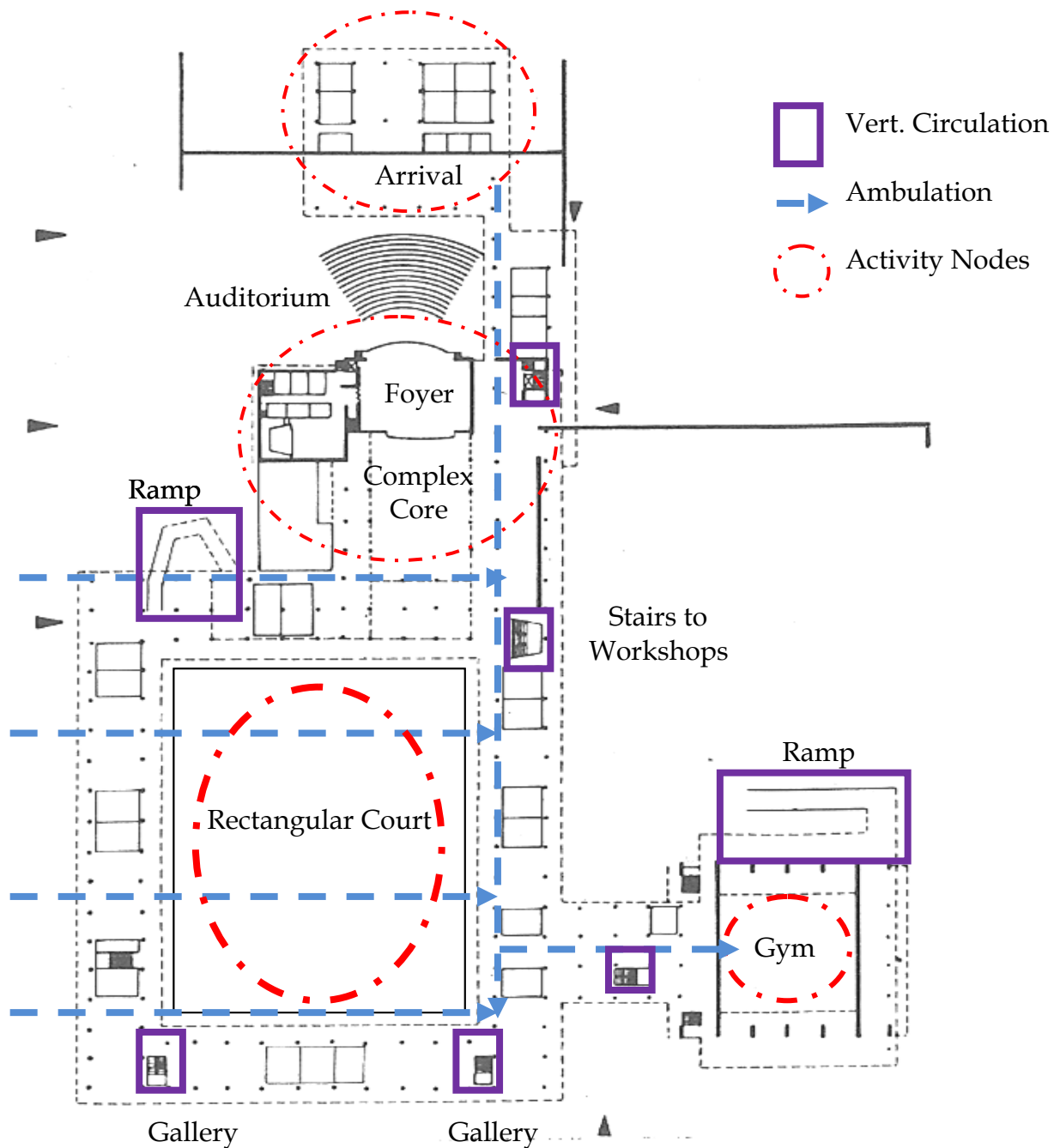


Fig 22 Diagram showing spatial connections within Olumuyiwas Cultural Centre sourced from *New Directions in African Architecture* (1969, 54)

If the criteria identified in the review of above are the key to a modernized framework for African architecture then the concept of linkage through spaces could operate like this when formally realized. See Fig 22

3.5 Conclusion

It is difficult, upon first glance, to see a connection between the Bala village and the recent attempts by architects to reinterpret African architecture. Essentially the connections consistent in all examples given by Kultermann seem to suggest that stringent architects of the 60s and 70s saw a need to create the link to open social living. To quote Jullian Elliot on his residential work in Katanga

“We always return to this planning solution and concept of “solid boxes in open boxes,” which seems such a characteristic of buildings in Africa...the beehive villages in Ghana, Mapogga, in the northern Traansvaal and possibly the finest and most monumental of all, the Zimbabwe ruins of Southern Rhodesia, are really an exceptional example of the defined and moulded roofless or external space.”

-Jullian Elliot, 1965

The focus on climate and traditional living habits is the key to working in Africa. The import of how a cultural people practice their building customs accommodates the overall theme of the dissertation. African culture rotates about the dynamic allocation of individuals within a society. It is clear that this allocation of systems is not unique; many cultures across the world follow similar building practices. What’s important to note is that this cohesive spatial planning practice is a common planning system in the majority of African cultures.

The Cultural Nuances of Africa go hand in hand with spatial provision. They give the spaces provided by the settlement a more active character than the dwelling itself. Consequently understanding of the nuances can motivate a proper union between the traditional and the modern. Critical regionalism is echoed in the planning process. Several African settlements attempt to maximize site potential. Tenants of constrict and release seem vital in getting such spatial arrangements to work. The design of spaces detailed in the African settlement work very well within their context. The next step is finding a way to merge old spatial principles together with new social and technical qualities.

CHAPTER 4 REDISCOVERING SEMIOTICS, MATERIALITY AND TECTONIC VALUES

4.1 Introduction: Cultural meaning

Rapoport (1969, 42-43) quotes Mumford's on the issue of man and symbols. Mumford explains that for one to understand the close link between man and his need for symbolism one must recognize first that man was initially a symbol-making animal before he was a tool-making animal. Jung (1964) agrees with this precept having said that man utilizes the spoken or written word to express the meaning of what he wants to convey. His language is full of symbols. These Symbols help define the world as we know it. We constantly use symbolic terms to represent concepts that we cannot define or fully comprehend. This is one of the reasons why all religions employ symbolic language or images to further explain the sublime or intangible elements of their given beliefs. Jung (1964)

There is unification or rather an eternal cyclical undertone behind symbolism. Meaning is a strong quality that imprints itself on the minds of the people interpreting it. Often one can reinvent or redirect meaning so as to further the understanding of a new and distinctive subject. Doing so broadens the societies understanding and encourages them to engage in new dialogues over simple conventions. A classic example of symbolic reinterpretation would be the design of the swastika (see Fig 23).



Fig 23 Picture of various Variations of the Swastika sourced from www.themeasuringssystemofthegods.com (02/2011)

The swastika continues today to be an extensively used sign in Buddhism, Jainism, and Hinduism. In Buddhism, a swastika represents resignation. In Jainism, it delineates their seventh saint, and the four arms are also used to remind the worshiper of the four possible places of rebirth; the animal or plant world, in Hell, on Earth, or in the spirit world. To Hindus, the swastika with the arms bent to the left is called the sathio or sauvastika, which symbolizes night, magic, purity, and the destructive goddess Kali. In both Hinduism and Jainism, the swastika or sathio is used to mark the opening of pages, thresholds, doors, and offerings. Lowenstein (1941)

The Swastika became a symbol of elitism among the German people associating power, privilege and the right to consider themselves superior to other races. This was in an attempt to revive another interpretation of the symbol as the standard for Aryan purity. Even to this date viewing the swastika instantly chills the minds of Jewish people and sympathizers towards their cause, all this due to the actions of Nazi German extremists in the name of the swastika. This makes the swastika a popularized symbol for human wrong doing despite all the positive attributes this symbol holds in several other cultures. This proves that the understanding of symbolism is never final or definite. At times symbolism transcends conscious thought entering the levels of unconscious or subliminal thought. As Jung puts it, what we call the psyche is by no means identical with our consciousness and its contents. It is a part of nature and like nature it is limitless and difficult to claim complete control over. Jung (1964); Bidani (1997)

4.2 Past Symbolics and their relevance today?

Norberg Schulz (1964) reviews place making in the environment. He describes all works as relevant to a time and a space. It is thus evident that all entities are governed by the qualities of time and space, the union of which creates a significance of place. Within this framework the Symbolic aspect of architecture lends itself to a consistency of message that breeds unity. The great temples and pyramids of Egypt are windows into early Egyptian life. In particular these buildings are windows to Egyptian culture and their attitude towards the afterlife. the “holy” character of the Amon temple near Luxor is accentuated by the use of hieroglyphic engraving, a language dedicated to symbolism.



Fig 24 Pylon of Amon Ra, obelisk and statues demarcating entry. Authors' source, (2009)

pylons that announced the entranceways were seen as thresholds into a holier plane of existence. The approach to these great axial devices was often emphasized by rows of miniature statues of the pharaoh and the sphinx. The Sphinx was a guardian of the spiritual realm symbolizing the gateway to knowledge and keen judgement (see fig 24). The story behind the symbols are what give them their relevance. Bard points out that as time progresses some stories would deviate, adjusting to the new lifestyles and conditions of the people that told them whilst other stories and the symbols linked would remain permanent. (Bard, 2000)



Fig 25 (Left) Ancient Egyptian symbol of Horus the falcon god and (right) The Falcon god symbol supplanted by a bald eagle sourced from www.free-floating.com (02/2011)

The Eagle or falcon warrior for example was a core symbolic figure in Egyptian culture. It represented the pharaoh and his link to divinity. America has sublimated this symbol in the imagery of its currency and federal institutions (See Fig 25). The Translation of symbolic imagery has fed its way into status symbols and motifs throughout modern architecture. Oliver (1975) writes on the reinterpretation of ancient symbols pointing out that there is a carryance of attributes and cultural tradition that we have systematically adopted in the globalized world.

4.3 Symbols of power from traditional to modern context.

In chapter 3 we establish that the cosmology of a people often manifests in the methods of dwelling construction. Gadalla (1988) a renowned Egyptologist speaks as an Egyptian-American on the adaptation of symbolic icons taken across from Egypt to be redefined in foreign contexts. The cosmological backdrop of the symbol shifts and changes to suit its new environment.

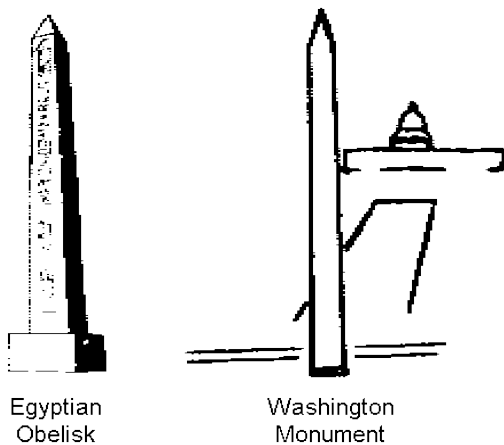


Fig 26 comparative sketch of the Obelisk sourced from Egypt-tehuti.org/gadalla (02/2011)

The Washington Monument (see Fig 26) is one of the mostl recognized symbols in the capital city of the United States of America. It is shaped like an Egyptian obelisk, an Egyptian symbol for solar rays. Obelisks can also be found as tombstones in U.S. cemeteries. The link in meaning between the two is rather obtuse and unapparent. However Gadalla quickly points out that this adaptation of a kingdom symbol is in a way asserting the status of power in the modern world. In the process of assimilating a permanent symbol of power there rides an assimilation of the mental associations an obelisk carries. Similar adaptation of imagery can be noted in other megalithic, symbolic architecture.

The Pyramids, eminent African structures, were grand statements of Pride status and power. The very shapes of the pyramids are social devices that when associated with an individual, i.e. a pharaoh, embodies a spirit of pride. This association of symbol to power adds memorability. It now epitomizes the height of the social ladder not just in the Egyptian culture but also in the Global world.

The Pyramids of Giza are a famous trimetric arrangement, pyramids of such monumental size that they out do all other pyramids before and after. The Pyramids are just as popular for their majestic scale as they are for the mystery lying beneath their unique orientation with the stars. Their placing and orientation are unusual thus they are linked to mystery and preternatural science. The pharaohs of old cemented their status as rulers of the Nile by using such “grave markers” to enforce the memory of their achievements into the mind of the people long after they had passed on to another plane.

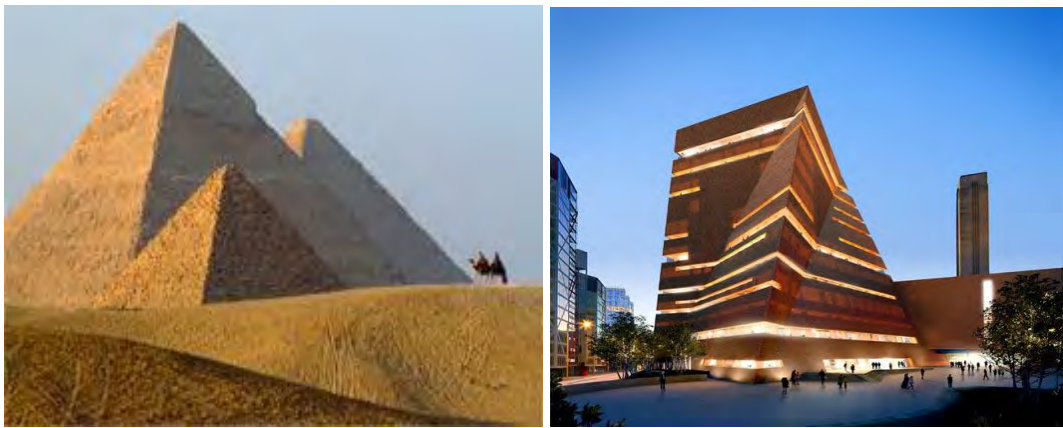


Fig 27 The Pyramids of Giza (Left) sourced from *Ancient Egypt: Anatomy of a Civilization* (1989, 32) Tate Modern Gallery of modern and contemporary art (Right). Sourced from Sustainable Architecture.com (04/2010)

Picking on this mystery we find that several designs echo a pyramids Iconic form in loose architectural translation. Perhaps of the most recent buildings echoing the pyramids would be the Tate Modern gallery of modern and contemporary art. The building is a modern design by Herzog & de Meuron, located in England. It echoes status and conveys a message of economic and cultural capability.

The pyramid-like structure is entirely subliminal, merging into the art gallery smartly. The architect hoped to elevate the status of the artistry invested within the building to a satisfactory level. By aligning the arts with the pyramid he inadvertently congeals the two aspects together into a new package that has a reinvented meaning. This Practice of adopting symbols extends to the physical meaning of materials. The following sub-chapters explore how materiality is seen in a traditional context and then again in how it is reintroduced to the modern platform.

4.4 New Methods, old Materials and climate

Natural Materials are an important link to the earth and are often the markers for identity sensitive design. Before globalization the telling factors of a people revolved around Culture and its manifestation in its environment (Amos Rapoport, 1969). To this end the assessment of feasible integration between modern and traditional should delve into recorded attempts to use traditional material in a culturally relevant way. Rael (2009) gives a fair account of how the new and innovative architects of the 21st century have re-assessed the usage of earth based building designs. Rael (2009) notes that more times than not the adaptations of earth-building techniques, in order to meet the demands of an industrial society, often prove themselves to be quite ingenious in their conception and execution. Among the traditional materials rehashed he lists the sustainable use of Bamboo and mud, moulded earth both at rescue and high design level and of course simple mud brick designs that prove elaborate and quite versatile.

Rapoport (1969) defines the case of architecture and climate as a case specific victory for the prevalent culture on the prevalent weather patterns. He discusses the question of house form and climate:

“Man was faced with the problem of designing for climate as soon as he left those areas where no shelter from climate was needed, and left the shelter of the cave in less hospitable areas. In these terms the house can be seen as a shelter that not only protects its occupants and contents from animal and human enemies but also protects against the natural forces commonly known as *weather*.”

Rapoport (1969, 85)

Here Rapoport continues to discuss how the direct consciousness of adverse weather conditions lead man to either flee for better weather or stay and adapt to the conditions that threaten him. We find evidence of this adaptability in homes dealing with extreme environments. Extreme environments such as the likes Eskimo people, encounter. These people are determined to live in homes made of ice blocks to protect against adverse cold.

In a far less hostile environment Rapoport describes the development of the a Malayan house (see Fig 28), traditionally open and exposed to the elements the Malayan house also uses the materials on hand to respond to the weather patterns it endures. This use of bamboo and earth, reeds and loose fabric is hugely successful, suiting the humid tropical upland climates but that is not always the case.

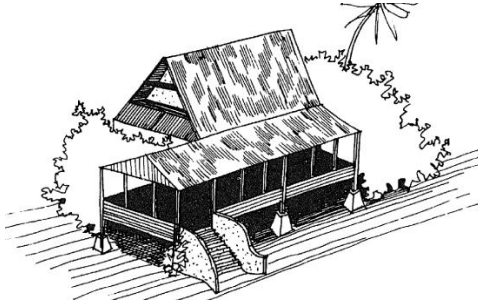


Fig 28 Bamboo Malayan house, source *House form and culture* (1969, 102)

The modern equivalent to this vernacular wisdom must then respond in kind. In a book by Koeningsberger et al. (1973) on building in Tropical climate accounts of climatic restrictions in architecture are formed. Essentially the following points are made clear. A home in a tropical climate must pay special attention to form and planning, external spaces, treatment of roofs and walls, openings and ventilation. When commenting on traditional shelter within such an environment Koeningsberger identifies two typologies.

Where timber is scarce one may find a prevalence of single storey, earth-walled houses with roofs framed in timber, bamboo or palm fronds then covered with thatch. This building type has broad over hanging eaves to shade the walls and is often moulded directly from soil close to home. Koeningsberger (1973) lists the numerous disadvantages to this form of shelter. It seems that there is poor air movement inside the dwelling type. This leads to high levels of discomfort. Often these homes negate the advantages of the tropical breeze by walling the compound. The intense heavy rains are likely to erode the bases and surfaces of earth walls, therefore annual maintenance is essential. Due to the structural properties of raw earth and the limited knowledge of traditional house builders the number and size of openings along the wall is quite limited. This means interior spaces often remain constantly damp. Koeningsberger (1973)

When Timber is more easily available or where earth conditions make earth-work construction impossible the situation reverses. The traditional dwelling is frequently placed up on stilts and is built from local timber or wicker frame with open-weave matting, timber or split bamboo walls, floors, doors and shutters. Thatch or built up layers of leaves cover a bamboo or timber roof-frame, which usually has broad overhanging eaves. Koeningsberger (1973) explains that the lightweight timber construction holds little heat and cools adequately at night. The elevated position offers better security and better air movement than single storey shelters. The thatched roof is an excellent thermal insulator, although it may not be quite waterproof when new. The broad eaves shade the walls and openings, providing protection from driving rain and sky glare permitting the openings to be kept open most of the time. One weakness is that the thatch is a convenient breeding ground for insects, and the entirely wood and vegetable matter structure gives food and easy passage to termites. Koeningsberger (1973)

Koeningsbergers evaluation of the strengths and weaknesses of these traditional building types gives certain summations. He divines that both types of shelter perform well in their traditional rural context, where materials and labour for their construction and regular upkeep are readily available. In densely built up areas, such as towns, even the latter type loses its climatic advantages, and the thatch roofs create a serious fire hazard. It is difficult to employ any of the two types in towns. To this end contemporary processes must be explored.

4.5 Hand Made School

Informed by such studies international interventions have adopted traditional media and refined its properties, adjusting construction principles and ingredients to better suit the modern context. Rael (2009) writes about the positive modernization and use of earth and bamboo in buildings. He assesses the Hand Made School located in Rudrapur, Dinajpur District, Bangladesh. The building was designed by Heringer-Roswag who herald from Europe. The architects were posed with the challenge to design a school for earth-conscious child education. The design was to implement and improve upon the traditional cob culture by addressing the climatic and contextual limitations of mud and bamboo.



Fig 29 The Hand Made School Sourced from *Earth Architecture* (2009, 200)

The Dinajpur district of Bangladesh is known for heavy rains and a lack of truly workable clay in the extremely fertile soil. As a result Bangladeshi cob wall construction suffers from high levels of erosion, normally eroding to such an extent the homes are often reconstructed each year. There is also a lack of binding and strengthening materials such as straw or stone. Rael (2009)

Heringer and Roswag opted to implement the traditions of earthen construction and adapt them using local resources, to increase the longevity and structural stability of the building. To mix the earth and water together cows were used. The mixture was improved by the addition of rice-straw, an agent that acted as binder and helped the walls dry evenly. The mixture was piled into layers of mud, then compacted by hand and allowed to dry. Once the wall had dried additional layers of mud were added to add a new height.

As it was a building entirely built by hand twenty-five labourers were brought onboard. These labourers were trained for the construction process, developing a series of skills that helped improve their own methods of home construction. During the process school children and teachers were also trained and participated in shaping the door and window surrounds (see Fig 29). This inclusion of the community is recorded by Rael to have instilled a sense of pride and ownership in the building. Rael (2009)

Traditionally earth buildings in Bangladesh are built directly on the ground, this leads to rising damp. This issue was addressed by the introduction of a building foundation of bricks that act as a buffer between the damp soil and the earthen walls (See appendix A). The walls are shaped by a spade and compacted sufficiently to prevent animals and insects from borrowing in. Rael (2009)



Fig 30 Interior “caves” (left) and exterior cob wall and coloured door (right) source from *Earth Architecture* (2009, 201)

The interior is plastered by a light coloured clay and lime wash that brightens the spaces (see Fig 30). Due to the plastic nature of a cobwall the architects fashioned intimate “cave-spaces” within the wall that allowed children to crawl in and meet, study, nap or play. This augments the free thinking education systems of the specialized school. The caves are organic and amorphic in shape, they contrast sharply with the simple square classroom, humanizing the space and appealing to the secretive, fanciful mind of the child.

Above this cob wall architecture we find the opposite approach. The two class rooms above the ground floor level now speak of light and ventilation. The second level floors are constructed almost exclusively of bamboo. They are composed of a square-by square framework that offers expansive views out to the natural environment. The flooding of light makes the space seem even bigger than it actually is. The only physical elements separating

the children and the outside sky are louvered timber screens that allow the breeze clean through the class room (see Fig 31). This framework is anchored in the earthen walls beneath. The second level floor is constructed from bamboo that gets covered by a layer of mud and planed to a smooth even finish. The ceiling is covered in strips of colourful, locally woven fabric hung from a triple layer of bamboo beams. These strong rafters are part of the roof structure, which is clad with corrugated metal and provides large eaves that protect the mud walls from the heavy rainfall. Rael (2009)



Fig 31 The upper level of the School takes on an entirely different characteristic source from *Earth Architecture* (2009, 201)

Essentially the design of the handmade school has Managed to retain the qualities of the two typologies commonly used in Tropical climates as listed by Koeningsberger. The modern adaptations in this design are subtle yet effective. Perfecting an already successful style of construction seems to have coerced Heringer-Roswags' creative leanings, solving many issues linked to sustainable cobwall and bamboo building practices. The community and school should not have found it difficult to adjust to the building design. The construction process should leave a valuable legacy that argues the advantages of traditional design. Most importantly the meaning attached to these traditional materials is preserved in the process, allowing Bangladeshi people more options to preserve their cultural outlook.

4.6 The Jean Marie Tijibou Cultural Centre, Noumea, New Caledonia

The Jean Marie Tijibou Cultural Centre in New Caledonia is a tradition sensitive building (see Fig 32) that was named after Jean Marie Tijibou, a leader of the pro-independence movement in the French Territory of New Caledonia during the 1980's. Tijibou wanted his people to become active participants in the modern world, yet he did not call for an abandonment of tradition in the acceptance of the modern.



Fig 32 the jean Marie Cultural centre, sourced from (Conciega 2004, 3)

Instead the integration of balance between traditional and modern culture was desired; and the Jean-Marie Tjibaou Cultural Centre, built in 1989 and designed by Italian architect Renzo Piano, became the fruit of their suffering and a symbol for their aspirations. (Blaser, 2001)This building is a perfect precedent for symbolism as a technological traditional hybrid.

The architectural style was derived from traditional constructional techniques. Initial studies by piano analyzed the Kanak vernacular architecture. The Kanak traditional hut is most notable for its high conical roof made of wattle and thatch. This wattle is such a shape

for various reasons. Such a shape is influenced by environmental and cultural markers within the Kanak society. A steep pitched roof like the one depicted in fig.32 provides protection from the heavy New Zealand rains that helps to enhance the lifetime of the thatch and ensures its structural survival through the intense storms and winds prevalent in the new Caledonia area. (Conciega 2004, 3)



Fig 33 Traditional Kanak Huts Sourced from (Conciega 2004, 3)

Reed and timber were adopted into the expressive weaved silos which, one can observe from afar, is an iconic passive design. The high roof allows for an emulation of the cooling passive systems that acts much like the stack effect in chimneys, a common technology seen even in the tipis of the plains-land Native Americans. This is a noteworthy passive technology that was, piano explains, adopted systemically in most of the earliest vernacular buildings. This gave the architecture of the area its character. (Piano, 2001)

The entire Jean Marie Tijibou Cultural centre uses materials and joints in a very pseudo traditional way, reinventing but not replacing the tenants of a Kanak hut that gave it its unique character. In this way Renzo Piano believed he kept the essence of the people alive

in the cultural centre. The “huts”, as he has named the stations all around the centre, were each carefully modulated.

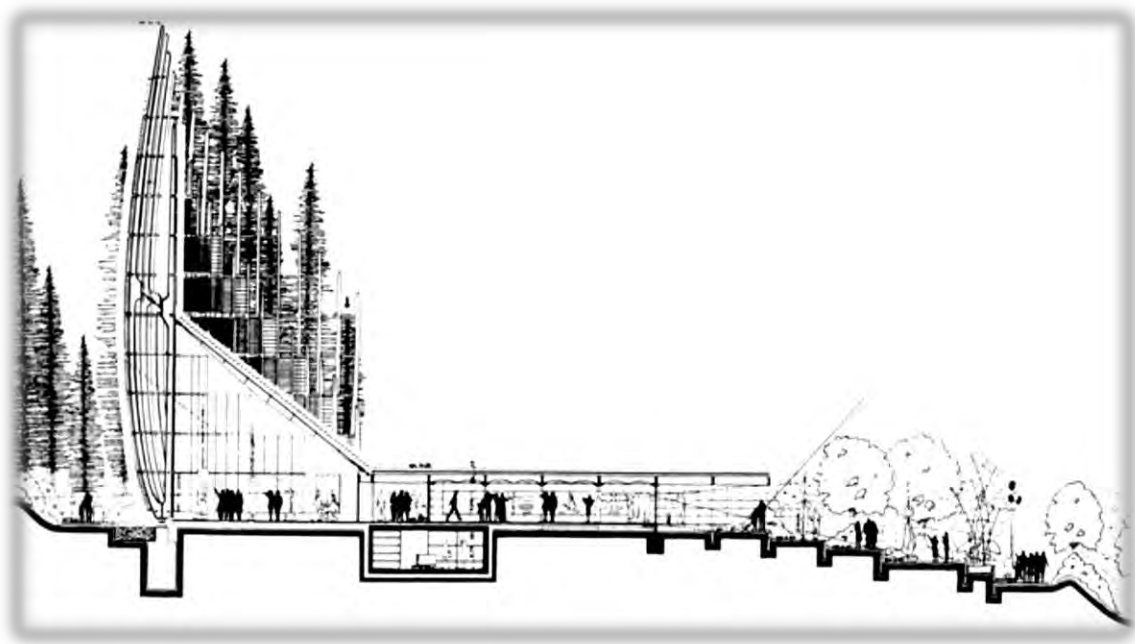


Fig 34 Section of The Jean Marie Cultural centre Sourced from (Conciega 2004, 9)

When asked about this modulation the Piano says:

“I decided to tone down the resemblance between ‘my’ huts by reducing the length of the vertical elements and giving the shells more open form ... the staves no longer meet at the top, as had initially been planned. The wind tunnel (simulation) showed that this produced a greater effect of dynamic ventilation. Yet they have deeper resonance, some literal: the wind surging through the slats of the open outer carapace gives the huts a voice... it is that of the Kanak villages and their forests.”

-Piano, 2001

The “voice” of the wind passing between the staves is a unique aspect that gives the entire site a character. In response to context and need Renzo Piano has given the location of this highly influential tourist centre an ephemeral spirit that has been accepted by locales with pride and a modicum of respect. Sekler (1963)



Fig 35 Image of the construction of a traditional hut whilst looking out to The Jean Marie Cultural centre Sourced from vitruvius.com (02/2011)

In his essay *Structure, Construction, and Tectonics* Sekler (1963), distinguishes between structure as the fundamental ordering principle of a work and construction as a particular physical manifestation of this principle. Tectonics we find is an expressive form representative of the other two modes, celebrating both physical and ephemeral connections.

The integration of modern and traditional is by definition the critical regionalists take on design. Even within this the Tectonics are heavily case sensitive, so any celebration of joins will invoke something unique. Piano explains that this joining of expression to construction is very important for the creation of an iconic form, and thus it is vital for developing symbolic space. Lynch (1981) says that ultimately the dialogue between Iconic structures and the people inhabiting them creates an iconic space. Culture and tradition is a working example of this very fact.

The Jean Marie Tijibou Centre utilizes laminated glue Timber rafters that adopts a curvilinear arch rising vertically. This shape is held mechanically with pivot joints (fig 19) to accommodate bending as generated by wind loads. The joints are bolted to a hardcore concrete foundation. The tectonic treatment is important because of the manner in which joints are celebrated. Neat yet complex fixings, despite their primitive nature, show careful thought through innovation. Piano blows up the traditional use of reed work to a scale the eye can engage with from a distance. The charm of all traditional design is its truth to the needs, function and strengths of the materials Here we find Piano extending that charm to modern technologies. Sekler (1963)

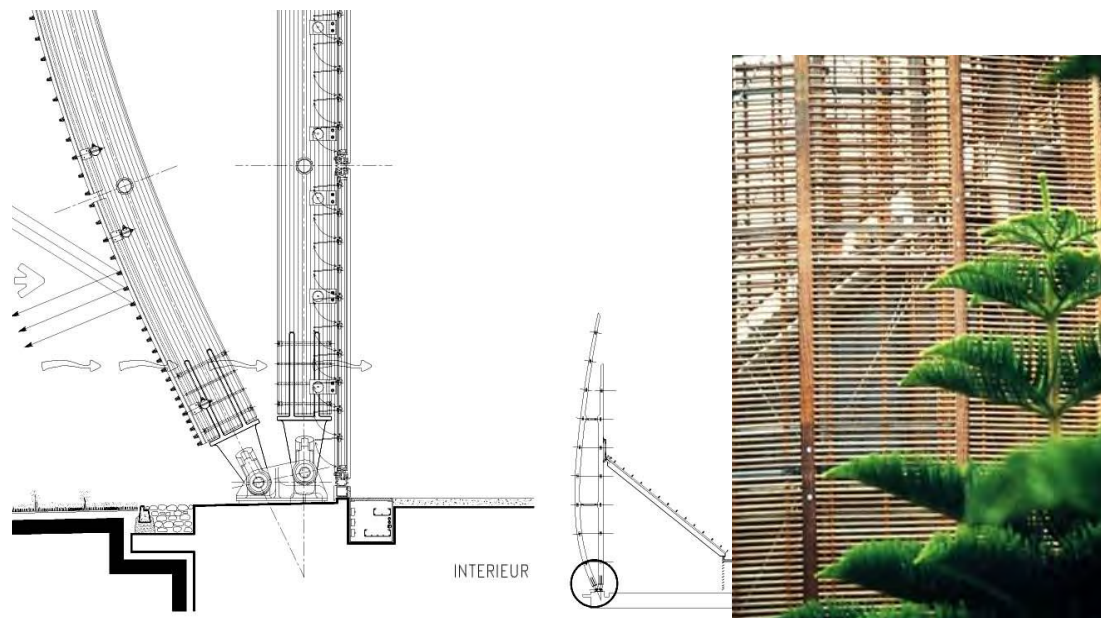


Fig 36 The technical detail and perspective of the curving stave wall and wattle lattice Sourced from www.vitruvius.com.br/revistas 02/2011

In implementing this design approach we find a new motivational link to the Kanak Culture. The junctions of spaces are celebrated by the building. Places where people gather are highlighted by this innovative tech, making the event even more special. In a way the Iconic nature of the Tijibou building is accredited evenly to its material meaning and its celebration of connective elements by high, easily discernable structure.

4.7 Conclusion

Form should not be dictated by material but it can be limited by it (Rapoport, 1969). Almost as if reflecting on this statement Frampton (2001) considers the conscious cultivation of the tectonic tradition in architecture as an essential element in the future development of architectural form, casting a critical analysis of the issue of modernity and of the creation of place. Much work has been passed on as "avant-garde" architecture. In the modern context however we find the best manner of generating character is through the expression of connections. The Traditional tectonic systems were key to the creation of traditional buildings. Frampton seems to suggest modern design provides space that emulates symbolic spirit at times attempting to extract the meaning to provide a universally accepted environment. This approach however seems to lack a self-telling character.



Fig 37 Jean Marie Cultural centre actively visited by tourists, Sourced from (Conciega 2004, 9)

To achieve an Integration of modern and traditional qualities in architecture a gap must be bridged; Rapoport (1969) and Teiji (1972) both surmise that the essential architectural manifest of a people is important to figuring out what makes them unique as a people. The traditional and primitive architecture of a group sets them apart from their fellow humans and unifies them around shared principles, beliefs and practices. Celebrating this common social denominator in architecture via the reinvention of symbols and materials, helps accommodate the vernacular spirit into the modern architectural world, effectively giving the soul back to architecture.

CASE STUDY

CHAPTER 5

5.1. QUALITATIVE: MAPUNGUBWE INTERPRETIVE CENTRE

5.1.1.INTRODUCTION

The Mapungubwe Interpretive Centre is the second ever winner of the World Building of the Year award. Designed by Prof. Peter Rich the Centre is a building on the site of an ancient civilisation which is also designed to highlight the fragility of the environment.

The Centre is the result of an invited design competition held by South African National Parks (SANParks) in 2005. The proposals needed to provide about 3000 m² of exhibition space for the artefacts of the Mapungubwe Kingdom, interpretive areas for the cultural and natural significance of the park, and headquarters for the park staff, and amenities for visiting tourists. Coupled among the architectural requirements were development aspirations to improve the conditions of communities surrounding the parkland. In merging architecture and development SANParks sought to use poverty relief funding to inject money and skills into the local community.

The museum building is designed to tell a narrative to the visitor of the relationships the people have initially with the environment and the relationship the people have with each other, their past present and their future. The building is built in the midst of a heritage site that dates back to what is believed to be the cradle of humanity where civilization took its first major leaps forward. In doing so it was critical to have a building scheme that embraced the earth, improving the social strata while maintaining a low environmental effect. The most ideal solution to the African context and the treasure that is African history.

The project won the competition by setting out to not only frame the environment but embrace it, dealing with the issue of sustainability from the very beginning. This has been achieved by incorporating natural materials and architecture that puts people to work imparting new feasible skills in the process. The system of vaulting for example is a 600 year old construction system that originated in the Mediterranean. The buildings of the

Interpretive centre mostly use a creative blend of vaults and silo like structures, these silos themselves being heavily African elements echoing the architecture of great Zimbabwe. The African art and culture is thus abstracted in these forms not just for show but for climaticly atuned function in a southern African context. In the end through construction it was hoped a new set of skills would be delivered to the people. The aim of Mapungubwe is not just to be an exemplary building but to transfer both knowledge and respect to the new generations developing a new contemporary image in the ancient and natural African context.

5.1.2.JUSTIFICATION OF CASE STUDY

The Mapungubwe Interpretive Centre was selected by a jury for the power of its psychological and architectural conception and development. Suha Ozkan described it as a building that 'carries both weight and a message of complexity to the outside world, ' The jury agreed that the way in which it related to the land and made graceful virtues of the challenging issues of sustainability, politics and social improvement made it a highly deserving winner (Fagan 40)

In reviewing possible case and precedents the interpretive centre quickly identified itself to be the most ideal example of a culturally rich yet modern architectural intervention. The reasoning behind selecting this building was due to the depth of the qualitative aspects involved. Several theoretical frameworks practiced by the designers this document has touched on in the literature review, namely hierarchy, symbolism and a series of culturally rich setting and responses. (Cooke, 2009)

The buildings are all linked strongly to Jungs take on symbolism. Peter Rich has identified elements of africa that are recognized across the cultures of the people, namely raw adobe, natural stone facades and a wealth of fascinating applications of earth-tile, meranti timbers and timber poles. The integrating elements of old and new technology comes into play yet again when we assess the redesign of common day convention. As a museum the layout and floor plan of the Mapungubwe Interpretive centre is more akin to a traditional compound. Keeping the absolute core of what the centre MUST be has allowed Peter Rich to explore what a museum does not have to conform to.

“The design grows out of a profound appreciation of its natural and social context. The volumes respond to the terrain and resonate with the rolling hills. We look to earth construction for inspiration while delivering a public building with stringent demands.”

(Fagan 2010 quotes Ramsfield, Pg43)

Elements such as finish, scale, location, exhibition and expression have all been analyzed carefully and readapted to add value to the legacy of the site rather than to take away from it. In this respect the project is an ideal point for research that subliminally challenges the modern response to public design. This factor is key to what this dissertation aims to accomplish.

5.1.3. LOCATION

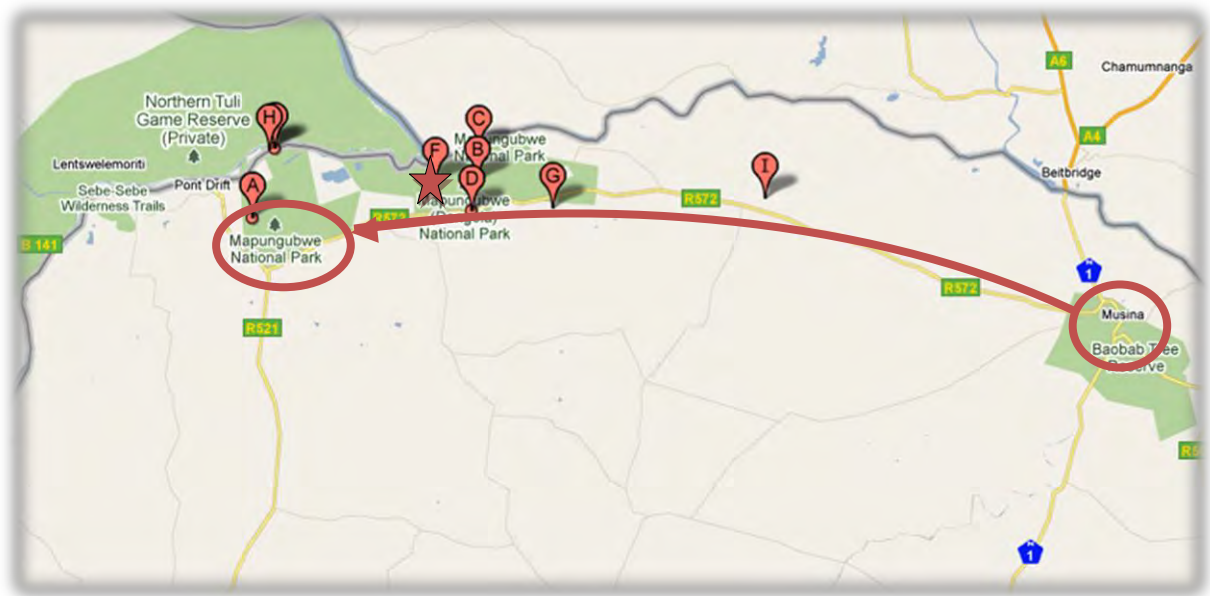


Fig 38 Map showing the northern portion of Limpopo province with Mapungubwe marked by a star placed at the meet between the Limpopo and Shashe River. Source www.googlemaps.com (03/2011)

The Mapungubwe national park (see star in fig 38) is situated at the confluence of the Limpopo and Shashe Rivers in the far northern region of Limpopo. Within this park are several natural heritage buildings, the Interpretive Centre being one of the most decorated and internationally acclaimed. The park is a natural setting that attempts to re-establish the indigenous fauna and flora of the region.



Fig 39 natural wilderness of Mapungubwe, authors stock (07/2010)

The park is fairly young as it was created through the acquisition and integration of several privately owned properties. There are currently plans underway to create an international peace park joining wild lands together. The dramatic rocky landscape of the park is a result of violent geological events that resulted in the Limpopo River changing its course from flowing into the Atlantic Ocean to discharging into the Indian Ocean. The sandstone formations, Mopane woodlands and unique riverine forest clustered with baobab trees all form a beautiful habitat for a rich variety of plains-land animal life.

The complex landscape was both the inspiration for the design and the source of most of the materials for its construction, resulting in a composition of structures that are “rooted” to their location. This makes the building very site specific; a similar result would be hard to come by anywhere else in Southern Africa, let alone the world. As a symbol for the African built environment it is a resounding success. Very distinctive, yet maintaining an anonymity within the natural environment.

5.1.4. HISTORICAL AND SOCIAL CONTEXT

The Mapungubwe Interpretative Centre celebrates the Mapungubwe Kingdom, an ancient civilisation and trading culture linked to the Great Zimbabwe of old.. It is believed to have been inhabited from roughly 1220 to 1290 ad and as a result is a UNESCO World Heritage site (UNESCO.com, 2011). In previous chapters it was highlighted that one of the strengths of Great Zimbabwe was its monopoly on trade and resources thus the site holds a wealth of gold smelted idols that have been restored and housed in the Interpretive Centre. The different crafts, some of gold and others of wood and beadwork all seem to have lasted well throughout the years.



Fig 40 Mapungubwe famous gold foil rhinoceros, authors stock (07/2010)

The trademark gold rhino (see Fig 40) often linked to the signage of the park is an adopted symbol that has been theorized to once have been used by a traditional priest or intercessor in the rites of the lost kingdom. Evidence of a hierarchy is apparent. A kingship is believed to have reigned over the inhabitants of the area. More shall be touched on the social structure and how it resonates through to the design development further on in the document.

Socially, the Architecture and development meet in a labour-intensive programme to employ local workers with minimal skill to make both the materials for the building and the building itself. The building is constructed of locally-made pressed soil-cement tiles which are then used to form the thin shell structural tile-vaults of the roof. The use of the site to produce the building has a massive effect on the embodied energy used on site but also as mentioned before imparts key skills to be carried forth by the masons into their homes and neighbourhoods.

The history of the site the building occupies is in itself a holy land for the southern African culture. It is a site of significant import exhibiting an African kingdom that flourished. The kingdom was active in controlling the areas monopoly by activating heavy trade routes and mining precious resources. An interview with Peter Rich, televised on SABC 2, revealed that he believed this wealthy heritage is symbolic of an innate African success story, a history which we can use as precedent for future success.

5.1.5.EMPIRICAL DATA.

The Mapungubwe Interpretive centre is set amidst a sloping landscape with plenty of foilage and natural stone, loamy soil and clay. Since the core idea is to utilize the natural elements to produce a building there is much readily available resources that have been taken in and adopted into the structure, foundation and finish of the design. In keeping with Critical regionalist theory we find the building is highly case specific. There is a fine tie between culture and a global identity. The building is a technical marvel that at the same time remains natural and simply supported by vault technology.

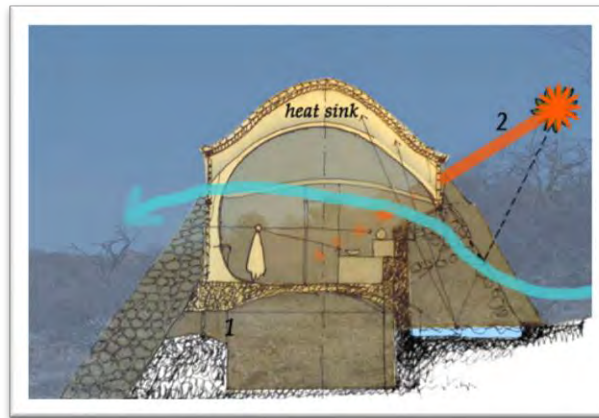


Fig 41 Diagram of a solar section authors edit, stock from PeterRichArchitects.com, (03/2011)

The site itself is in a quite hot and arid climate. The building orientation is highly important. By running in triangulated zigzags that generally face south and north across their “eaves” (see Fig 41) the built form protects itself from the harshest times of the day’s heat coming from direct north light. The buildings open out to courts with southern views seen through top to floor glazing. The Prevalent winds are tampered down by foliage effectively creating a wind shield where the wilderness is particularly thick. This screen of foliage also acts as impromptu shading. One could say the vegetation around the building acts as a jacket. Genius

The passive systems working within the building are best explained via section, being in the space on a warm day, one can feel the wind drawn in without feeling any negative radiation from the vaulted roofs. These roofs act as heat sinks during the day, slowly leaking out warmth during the night.

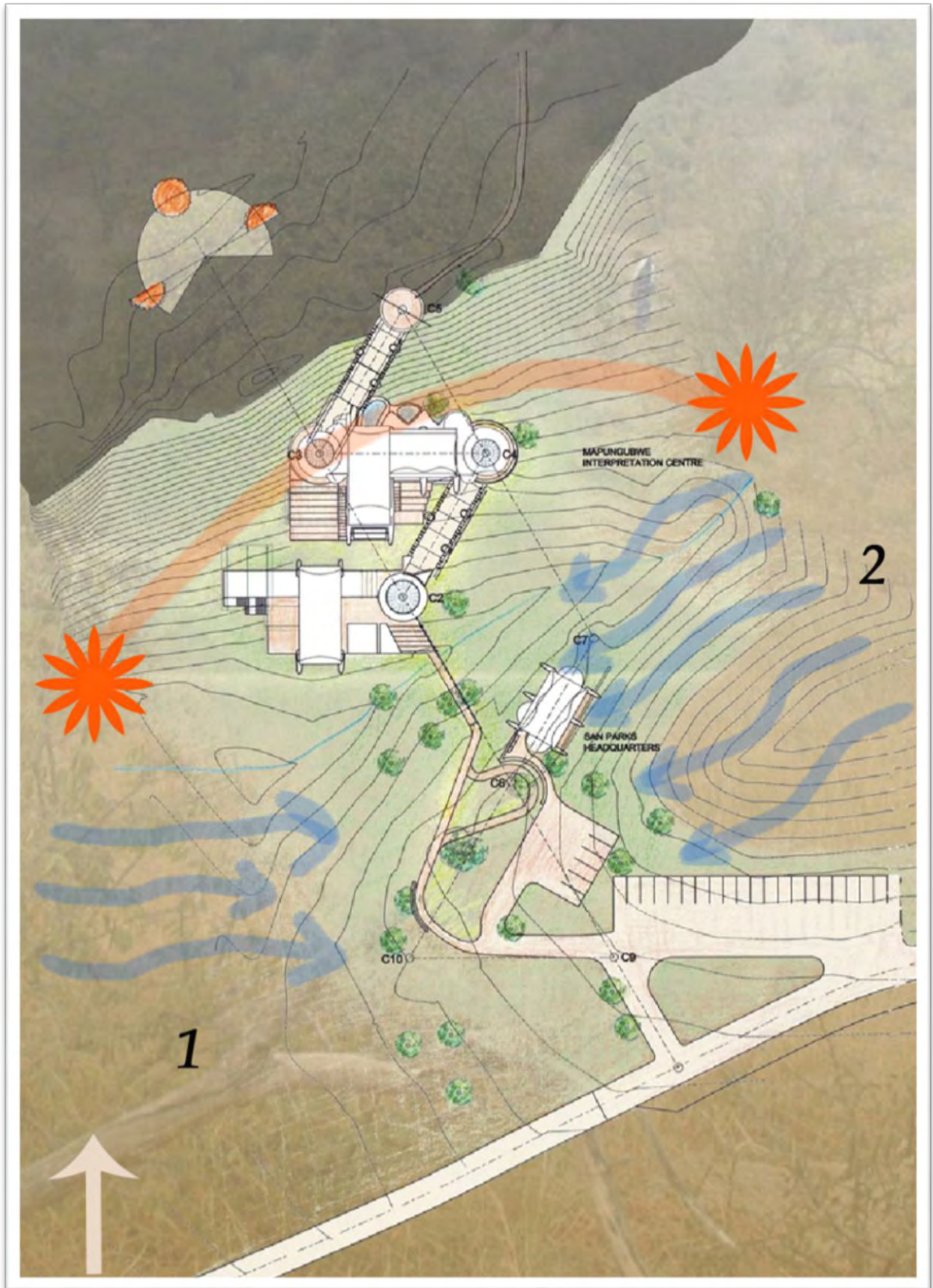


Fig 42 Diagrammatic Layout of the Mapungubwe Interpretive Centre

5.1.5.1. AMBULATION

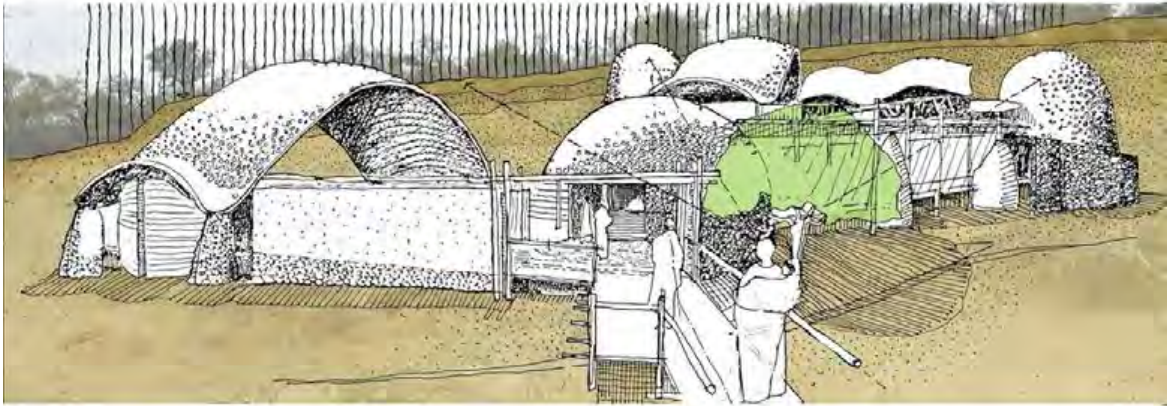
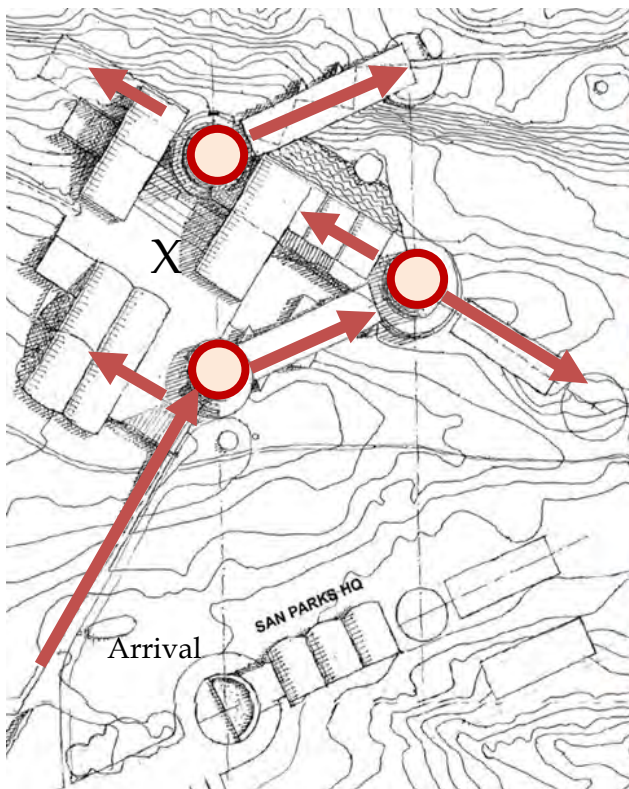


Fig 43 (Above) Sketch design of the Mapungubwe Interpretive centre showing textures and formal relationships with the site (below) diagrammatic assessment of processional travel through the building, Source Holcim Awards gazette (08/2007)



Mapungubwe draws visitors along a path that moves through the museum and into the landscape to better explain a culture and its context (see fig 43). The Interpretive centre is ordered to an underlying triangular geometry that echoes ancient beliefs that equilateral triangles provide primary ordering. This was all set out from a line running parallel to the contours. Secondary elements are fixed in position by this geometrical system, which is important because of its reference to triangular motifs etched on stones uncovered on Mapungubwe Hill.

The headquarters are the only buildings divorced from the procession, allowing autonomy for administrative exercises. During particularly lively exhibitions the stage area (X) is active and pulls people in from every portion of the building.

5.1.5.2. HIERACHY AND THEIR LINK TO PASSIVE SYSTEMS

There are signs that in the past the lost civilization of Mapungubwe possessed a system of hierarchy. Kings and royals were situated at the highest point of city settlement with the prolariat on the valley floor. This systematic organization is echoed by the building today. The user enters along the valley floor and ascends via silo demarcated nodes up to a platform with an unhindered view out to the rivers and landscape.

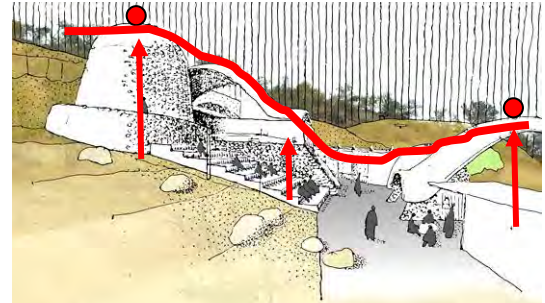


Fig 44 Diagram showing how composition of mass emphasizes significance against the landscape.

The level of light is determined by size and height of the space fluctuating as one walks through the museum creating a unique experience ranging from earthy darkness to sun flooded oculi. The vaulting design of the is notable for more than this; it has been attuned to the local environment. Much like the venturi effect acting on an airplane wing air runs faster above it than below it. The oculi and side vents effectively draw hot air up and out leaving all the spaces cool and comfortable. (See Fig 45)

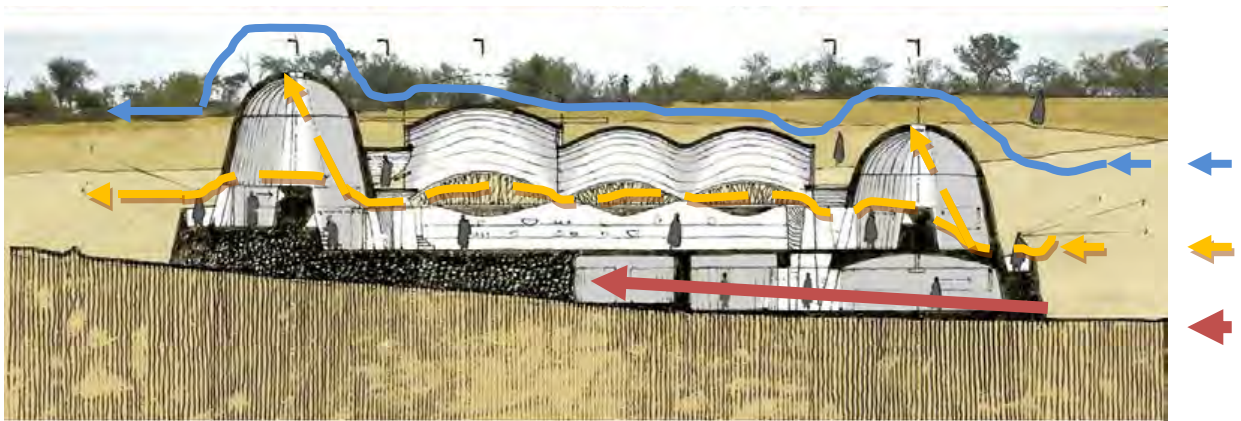


Fig 45 Diagram showing Winds speeds and how the pressure actively develops suction to draw heat out of the building. Source (Fagan 2010)

5.1.5.3. SYMBOLISM

The oculi denotate key areas and relate to the sites history. It is a common practice to create a cairn, essentially a tall pile of rocks, to give direction. This practice has been adopted along the route as a symbolic and easily understood signage system. (Rich, 2009)



Fig 46 Cairn and oculus from outside. Authors Stock (02/2011)

The interiors of the massive cairns are reminiscent of ancient sacred spaces, providing the beginning and the end of the spatial experience. Emerging from the building at its highest point, the visitor is led to views that overlook the valley. There they see formations that once housed ancient civilizations. At once the visitor is made aware of the rigorous geometry, the rhythms of the vaulted forms and the intimate relationship to the landscape. The building Echoes this method of organic rhythm and repetition. It thus becomes a symbol of a pattern system, the use of which was long since forgotten. In a way the new building revives the old building system yet at the same time it reinvents self same building system.

As reviewed in chapters 3 and 4 of this document there is a sense of unification or rather an eternal cyclical undertone behind symbolism. In the Mapungubwe Interpretive Centre meaning is given strong consideration. Ideas are piggybacked on top of stronger ideas which are then given form in modern day mediums and methods. It seems the Mapungubwe Interpretive Centre follows Lowenstein's premise (1974) that a symbolic design should bolster understanding beyond literature. It ideally should enhance understanding through experience. This is a very important point to observe in both the everyday abode and in any culturally relevant public domain.

5.1.5.4. CONSTRUCTION AND TECTONICS

VAULTS

Vault technology has been touched on in prior sub-chapters. Being an innovative solution to climate, the high thermal mass passively cools the space during the day and radiates accumulated heat at night. The Mapungubwe Interpretive Centre attempts achieve this by utilizing vaults made of layer after layer of earthen tiles and reinforced concrete in some extreme cases. The focus on using site gathered materials then reveals its merit: sandstone floors; earth block walling; exposed tiles on the soffit of the vaults, stone on the exterior; and natural timber for the minor components. All these naturally robust elements ensure routine maintenance is minimized, with negligible environmental cost throughout the life of the complex.

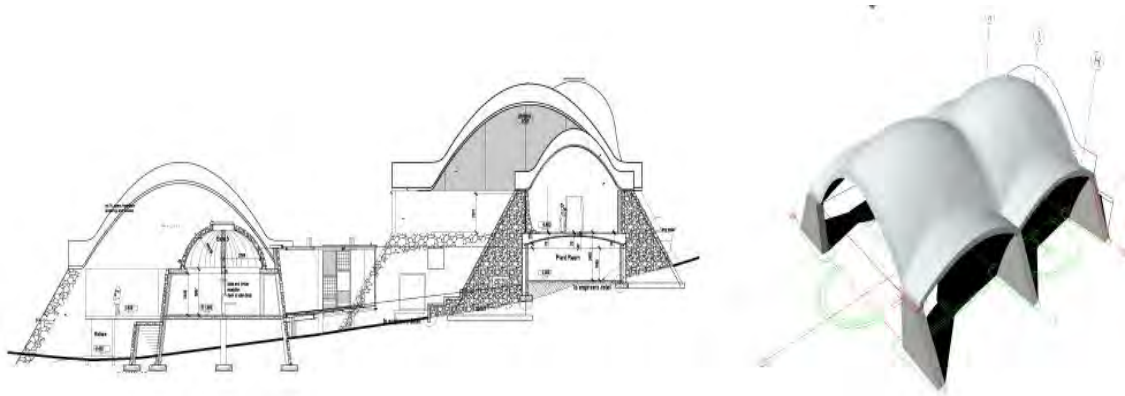


Fig 47 section and 3d render of vaulted shell roof. Source (Ramage 2009, 15)

In addition to being structurally sound, elegantly simple and environmentally sustainable, tile vaults hold constructional advantages for developing areas. Learning the technique is straightforward; good results come quickly. The design of the Centre draws from indigenous forms and principles. These principles are adapted to meet contemporary physical needs. The diaphragm-like vaults establish a rhythm that speaks of the geological formations and of the earliest regional dwellings. These are contrasted with the cairn-like forms that contain the multiple exhibition spaces. All elements can be easily and actively adapted by the people of the area to varying degrees.

Construction process

The construction process behind the Mapungubwe interpretive centre is unique in that it has been systematically recorded and made internationally available on Social media networks such as YouTube.com. As can be seen in Fig 48 and consequently in Fig 49 the documentation of the Interpretive Centre was thorough. Records of day by day development reveal how stages of building occurred. There is an emphasis on workman skills. All construction methods were unique to the area. The project hired several labourers from the community. In assisting with the building process they were taught complex construction skills.



Fig 48 Constructional process of an earth tile vault sourced from Mapungubwe constructional record, youtube.com (02/2011)



Fig 49 Constructional process of an earth tile vault sourced from Mapungubwe constructional record, youtube.com (02/2011)

The tiles are stuck together using limited use of formwork and simple geometric guides to define the shape. The rapid set of the mortar and the structural shape allow the mason to span between guides, relying on structural action to develop while the building is under construction. The form work is heavily supported in the initial phases. Insurance by the engineers and architect help keep the over guides in line with the envisioned design. Once the formwork is set (see fig) The Layering of earthen tiles begins.



Fig 50 (above) Process of laying down earth tiles



As the vaults span across Rampart like piers some concrete is cast to ensure the shortest span is ridged. The masons then begin their work layering flexible wet tiles to the shape desired. As the first mason works on one portion another three with assistants begin work on the other three sides.



Fig 51 timber joist pergola image sourced from Peterricharchitects.com (02/2011)

The tiling is done in cross courses so as to better interpret the moments creating a three layer thick shell upon which earth is treated and plastered the inset with site quarried stone work. The Shell vaults and diaphragm walling are composed of little to no steel at all; the walkways are made of simple concrete and earth with timber and slats to shade the procession naturally. All the design elements are highly refined in their execution, despite their rustic nature. The overall effect is the sense one has arrived before an old building. It feels like the building has sat on the site for hundreds of years despite being less than two year old. It is a wonderful example of critical regionalist thought, giving a natural feel to a technical and complex problem.

5.1.6.CONCLUSION

The Mapungubwe Interpretive Centre is a highly idealized project with several key elements of its design singing well together. As a case study to the idea of integration this dissertation finds that the Mapungubwe Centres attempt to marry natural tradition and modern technology is a viable and positive success. The awards accredited to the Mapungubwe Interpretive Centre give us an indication that the world body of architectural professionals see promise in this field of study.

The Centre is part of a story, still unfolding, of culture developing in symbiosis with its natural legacy. From the southern environmental context we find similarities in climate and natural resources, defining factors that led the past peoples of the Mapungubwe area to greatness. The truest sign of development from the times of the lost Mapungubwe kingdom is in how we re-utilize their legacy and not in how we simply remember it.

By integrating these lessons, with allowance for cultural practice and public sensibility, it is easy to imagine the hybrids integrative design can produce. Factoring a traditional and historical legacy can motivate the theme of creating a new ethnic harmony. Careful grafting of tectonics should heighten the African context. Peter Rich approaches the Mapungubwe Interpretive centre as an opportunity to demonstrate the potential of the South African setting. Sustainability is not a forced imposition on the design but rather a subsequent side effect of practicing good design principle from an Afro-centric perspective.

5.2. INTUTHUKO JUNCTION

5.2.1. INTRODUCTION

In the pursuit of an Integrative architecture the higher echelons of government and the lower communities of Cato Manor have colluded to create a series grass root development schemes to help the society of Cato manor help itself. At the heart of this initiative we find the headquarters of the Cato Manor Development agency. Initially a spontaneous group with no real base of operations, their ties to government, sponsors and their commitment to the improvement of Cato Manor so the organization solidify and take on a very distinct mode of operations.

Soon this mode of operations extended itself beyond the varied venues they operated from and a need for a new Head office building became a priority. The Cato Manor Development agency or CMDA as they are better known thus held a competition which the then up-and-coming East Coast Architects managed to win. The competition winning submission was a case oriented design that looked critically at issues of development. It aimed at the production of an integrative solution for modern functionality and the cultural practices of the Cato Manor informal settlement.

Currently arriving at the sight one finds that a lot of the imagination seems watered down with time. The site itself is not as busy as one would expect and upon discussing the building with a local guardsman, it appears the only true appreciators are people with business and educational cause to visit the building. This is unfortunate as the building held a popular position in the early years of its inception. The society seems to respond to the design positively but a certain aspect of the function and process seems to make this culturally rich design intervention less approachable than the architects originally intended.

5.2.2. JUSTIFICATION OF CASE STUDY

“Focuses on local authenticity, not machismo”

- Lipman, Sunday Independent, May 12 2002

The headline used by the Sunday Independent to describe Intuthuko Junction is aptly appropriate. Intuthuko junction commanded a lot of respect from the community because of its vibrant yet relevant character. There is a mass of insightful pieces within the design that make a visitor to the building think of the people and the building culture of the Cato Manor informal settlement. Squatter Camps, shacks and rundown neighbourhoods are a common trait to every Country. The name may often vary, from the favelas in Rio, Brazil, the junk towns of Shanghai China or the ghettos in North America; all carry a unique reality to poverty that shouts “we cannot be ignored”.

It is the goal of every municipality to attempt to “solve” the problem of the poor districts. Often these solutions are nothing more than a band-aid on a bullet wound, sentimentally correct, but over all ineffectual. The Cato Manor Development agency however is an NGO that looks for a deeper more meaningful solution. Intuthuko Junction was intended to be a fulcrum for change, Buckland (2002) writes on the intended function of the building from a list of fronts. It is intimated by Van Heerden that the building used devices like Form, Grain, Public-Private Interface and the Street Face to engage with the community and integrate their culture into the buildings modern functions.

The motivation for assessing Intuthuko Junction is largely due to its fairly new and contextually relevant approach to designing with the culture and tradition of a people in mind. All too often gimmick driven architecture assumes the image of a culture but rarely practices a critical principle to address the community. After careful study it would seem this building shows all the vital tenants required for that essential link to the community. Despite this the building is not as socially active as it was anticipated to be. This Case study focuses on the difference between Intuthuko Junctions potential and its current state of development, accessibility and use.

5.2.3. LOCATION AND ENVIRONMENT

The Intuthuko building is sited in Cato Manor, Durban South Africa (Fig 52) at the corner facing Mary Thilphe Street. Cato Manor is located on the outer limits of the Durban Metropolitan region between the Umbilo, Brickfield and Sherwood area. Containing roughly 93000 people (CMDP.org.za 05/2011) it is predicted to have a future population estimated at 170 000. It is an area that suffered greatly under the Apartheid government's policy of forced removal for squatter settlements. The development of the area proposed by the CMDA incorporates the need to readdress these past injustices and promote black empowerment within the area.

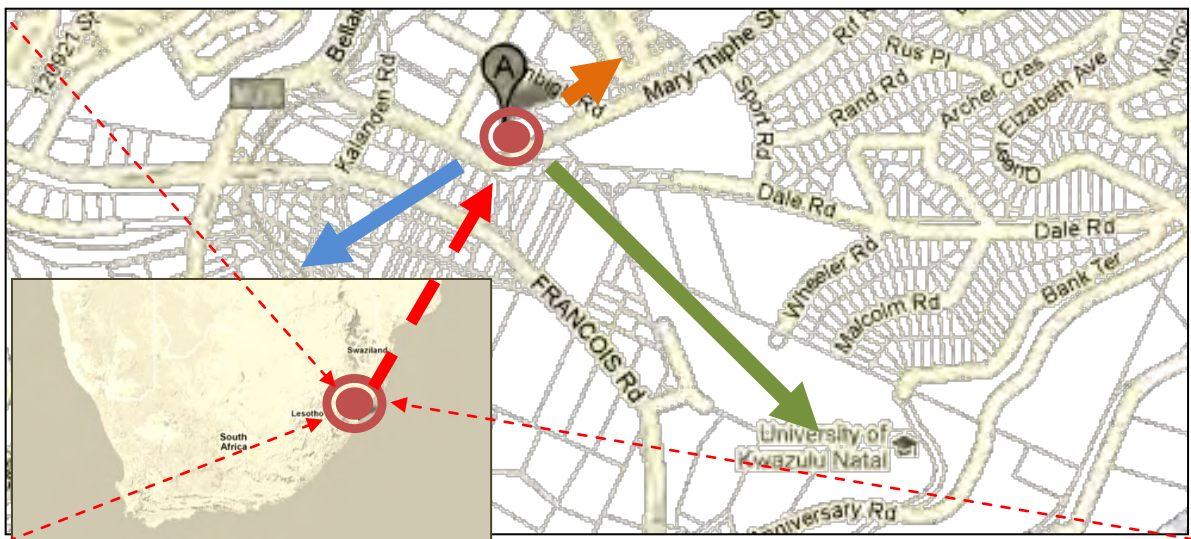


Fig 52 Image of Intuthuko Junction Taken off googlemaps.com (05/2011)

Cato Manor is polluted and suffers from poor accessibility, inadequate infrastructure and service delivery. This is surprising as the area seems to be surrounded by the brickfield business district (orange arrow), the Howard University campus (Green Arrow) and the Albert Luthuli hospital. All zones enjoying constant development and high level resources.

5.2.4. HISTORICAL AND SOCIAL CONTEXT

Cato Manor was initially an area where the first mayor of Durban, George Cato, was granted land as compensation for his beach front property which was taken over by the military. Cato and his family used the land till the turn of the century. This lasted for some time before the farm land was subdivided into small farming lots. For the next three decades landowners hired out or sold plots of land to gardeners in the Indian market. African squatters had already begun to move into fringe areas about these farming lots, settling in along the banks of the Umkhubane River.



Fig 53 A shack settlement, Cato Manor, 1950 sourced from cmda.org.za/history

According to CMDA.org (05/2011) they were barely tolerated. During this time Africans were not afforded ownership of land and thus were labelled “temporary” sojourners. In 1932 Cato Manor was incorporated into the municipality of Durban. This made the Shack settlements illegal however authorities left the area to its own devices and soon people flooded into the area. Landowners made profit from letting out properties and soon Indian businessmen opened shops and bus services to cater the society. Edwards (2003)



Fig 54 A Cato Manor shack area prior to the establishment of a Controlled Emergency Camp 1955 (sourced from .cmda.org.za)

In 1945 the Cato Manor area broke out into anti-Indian violence allegedly due to some mistreatment of a 14 year old boy at the hands of an Indian businessman. The resulting riots forced all the Indian residents in the area to flee. Following these riots Indian Landlords returned to collect rents or let out plots to Africans who then erected more shacks and sub-letted them. This compacted the living conditions with 6000 shacks housing numbers as large as 50000 people. Edwards (2003)

By 1957 the municipality had begun developing new housing schemes for Africans in the Kwa-Mashu area. Cato Manor was designated to be a temporary transit camp for this relocation process. Many Africans were unhappy about the sudden change of location. Municipal attempts to move the people of Cato Manor consequently met with heavy resistance. Raids demanding confiscation of liquor and regional passes led to what is now known as the Beerhall Riots of 1959. Edwards (2003)



Fig 55 Native Management Office, set on fire by demonstrators, June 1959

After the riots an escalation of violence led to the deaths of nine policemen and this hastened government action to clear the Cato Manor completely. The area was left vacant with some houses, shops and Hindu temples scattered here and there. Eventually in 1979 The few remaining residents of Cato Manor formed the Cato Manor Resident' Association. This association made it its Mandate to fight against forced removals within the area and hamper the progress of racially-based housing developments proposed by government. Edwards (2003)

The 1980s led to minor development intend for the Indian community but this was quickly overshadowed in the early 1990s by a rapid wave of informal settlements In the Cato Crest area. This was largely due to mass urbanization. In 1993 The Cato Manor Development Association (CMDA) was formed and the new government showed support for the organization with the funding for a headquarters, the currently existing Intuthuko Junction. Edwards (2003)

The CMDA project helps organize the construction and development of low-cost housing, schools, libraries, community halls, roads, clinics and other necessary resources. In addition to this, the CMDA focuses on the stimulation of economic development and community empowerment through interventions such as training schemes and small, micro and medium enterprise development. Van Heerden (2011)

The CMDA is the principal agency responsible for the process of redevelopment in the Cato Manor area and has secured substantial funding from the European Union, local, provincial and central government as well as other funding agencies. To date, R380 million in public sectors funding has been invested in the project. Its Role in the Cultural Development of the area is also very important. From visiting the building one finds full accounts of the Cato Manor history, arts, craftwork and business. Such a building is the closest thing to a cultural centre the district has.

5.2.5. EMPIRICAL DATA

5.2.5.1. Form, material and design intent

The massing Of Intuthuko Junction is variegated with a number of compartments informally aligned to make reference to the variation of housing within the Cato Manor community. The Mono-pitched roofs cut an interesting line against the sky, seemingly echoing the tectonic of Cato Manor Shack buildings. The Colour design of Intuthuko Junction reflects a multiplicity of function. The vibrant colours also represent the colour schemes commonly used within Cato Manor itself. Bright, near fluorescent reds oranges and yellows are creatively combined



Fig 56 images of entrance to Intothuku Junction (left) and competition drawings sourced from KZ-NIA journal 1/2003

Upon review of articles written by Edwards (2003) it appears the building was conceived to be an architectural attempt to merge the Cato Manor community with the more developed portion of Umbilo. It attempts to make explicit the dialogue between these two diverse regions. It thus features elements that are simultaneously permanent and impermanent, cheap and loud or polished and polite. This dichotomy of building character properly incorporates the public and the private.

In an interview with tenants of the shops small shops housed in the building one salesman pointed out that the dichotomy of character was as much hurtful as it was beneficial. The salesman explained that he saw a low sales rate. Most of the people that purchased from him were either working in the offices let out to the CMDA and other business or were the

occasional tourist. It would seem that both communities did not feel comfortable to engage with the building, those from Cato Manor think of it as a place a person from Umbilo would visit whilst those from Umbilo would think of it as a place those living in Cato Manor would come and frequent.

5.2.5.2. Public-private interface

Observing the area about Intuthuko Junction it was discovered that the building complex Functioned at three different levels of public private space. In theory the lower level (see fig 53) is a level that opens out to people. It is amorphous in plan, with walls detailed and textured cleverly. The wavy patterns speak of South African hut architecture with a wall of varying tones of colour and finish.

Talking to an ex-secretary, Mrs F. Dlamini, an interesting point is put across. In the early stages of the buildings life several people visited the building out of curiosity. They partook of the activities in the interpretive Centre, tourists visited and students visited as well. Over time however interest diminished and the private sector become more and more introverted.

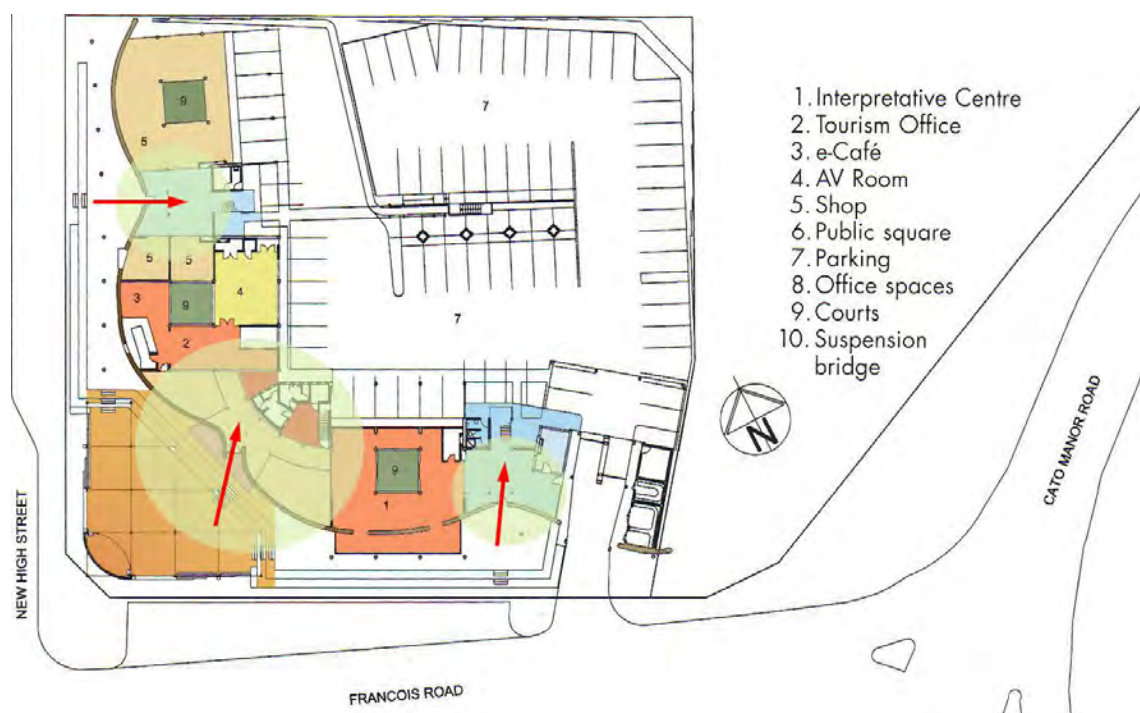


Fig 57 Diagrammatic ground floor plans showing degrees of public private space as edited by author, sourced from KZ-NIA journal 1/2003

The upper floors (see 54) housing the major business component are currently quite busy, but relatively closed off. They start to feel quite detached and isolated, something the architects had hoped to avoid by incorporating shops and casual space on the lower floors.

5.2.6. Conclusion

Essentially the combination of activities is a balancing act. The intention behind Intuthuko is a noble one. The attempt to provide more than just an office block was an additive intention. Sadly it was not very successful. The functional relevance of the building after a long life as a mixed use corporate entity would have been good if it was sited in an area more connected with either Cato Manor or Umbilo. As a building lost in the boundary between these two regions the functionality of the building has become more and more internalized.

There is the impression that the building could revive its public face as the area develops into a more congealed society but many members of the umbilo community feel reserved about meshing Cato Manor and Umbilo together. The stigma of poverty within the area of Cato Manor hides the progress achieved by the CMDA. Should further development of the buildings immediate neighbourhood occur the public component may be revived, reconnected it with the community.



Fig 58 Diagrammatic **first floor** plan showing degrees of public private space as edited by author, sourced from KZ-NIA journal 1/2003

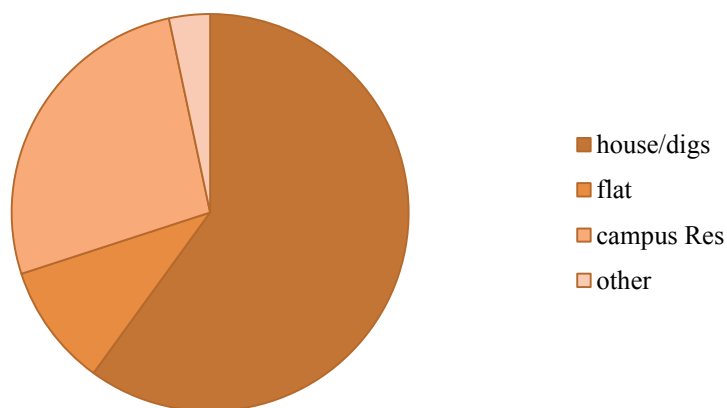
CHAPTER 6 ANALYSIS AND DISCUSSION

6.1. FINDINGS IN RELATION TO SECONDARY RESEARCH AND QUESTIONNAIRE

6.1.1. On The Innovative process-The questionnaire and feedback

In writing this dissertation the issue of integration between modern and traditional architecture was boiled down to a few points of inquiry. In questioning whether Africa can create an architecturally independent identity in architecture research revolving around innovation was carried out. Chapter 2 titled Roots of History and Seeds of Innovation looks at whether tradition is truly obsolete. Recognizing Charles Jencks' (1973) assessment of evolving trends we find re-invention becoming a more and more 'popular' choice of action.

In assessing the current state of respect for history today a questionnaire was conducted asking how the youth of today rate the relevance of architecture. These questionnaires were conducted within two Cities within Kwa-Zulu Natal, namely Durban and Pietermaritzburg. In this questionnaire participants were asked "what they thought of "New" Buildings constructed in Africa." To regulate the findings the questionnaire (see Appendix C) was conducted on thirty people mostly under the age of thirty. The following is an assessment of the answers recorded. To establish a basic foundation for context participants were asked open ended questions such as whereabouts they lived and what type of house they called home. Of the 30 participants eighteen lived in a house or house based digs. Three lived in a flat, eight lived in Campus Residential facilities and one lived in a hotel like exception.



Graph 1 Chart showing participant body in relation to their dwellings types.

The participants were asked about their thoughts on new architecture within the City they lived in. Many architecturally trained participants admitted the new architecture erected within the Kwa-Zulu Natal area was quite reminiscent of contemporary and international styles practiced liberally across the globe. There were some amongst this number that felt that the new designs introduced into the African context were culturally and climatically poor, confused and lacking in “soul”. One lady of Xhosa speaking background said:

“It’s like they are trying something new (but) it feels like it is not good enough yet”

This is not to say that this dissertation refutes a need for modernization, many of the people that completed the questionnaire lived in modernized homes. When prompted they even listed a few buildings within the Durban area that appealed to them. Buildings like the New Moses Mabida Stadium, the NSA gallery and the new Pietermaritzburg Library were all listed as favourites that people considered attractive and enjoyable to be in.

When asked about their feeling towards Traditional buildings in Africa over 90% of the participants involved expressed appreciation and respect for vernacular house form and culture. Many of the respondents felt that the African traditional home held all the qualities of what it meant to be African. It seems like the dignity of the African traditional home lies in its accommodation of every aspect of an Africans lifestyle. Participants who had been inside a traditional settlements noted that the echoes of traditional culture could be felt throughout the entirety of the settlement. When asked what traditional buildings in the region subjects of the questionnaire like most, a huge variety was provided, ranging from the Xhosa, the Venda, the Zulu and the Sotho traditional home.

When asked why these buildings appealed to them subjects confided an appreciation of the application of bright colours, innovative structure and form, communicability with nature and close relation to the society. The layout structure of the traditional settlement has changed over the years but in each culture it was clear where one was meant to go if one needed something. The space, as a young Zulu born participant explained “...it’s as though the space tells you how to act within it, showing you where to enter, where to leave and how to behave within it”

Oddly enough the very things people appreciated in modern buildings they linked back to traditional or cultural designs. What does this say about the Innovative process? Well in Chapter 2 of this dissertation the highs and lows of adhocist and Neo modernist design were compared, two opposing poles of postmodernism. It's established in the study that these two extremes both are additive to the building society but on their own fail to truly manifest a clear answer to the issues listed in the problem statement.

Frampton frames critical regionalism as an amicable answer and the case of Tadao Ando and the Church on water becomes an explanatory tool in assessing the sensibilities of a critical regionalists approach. Above and foremost we find that the critical regionalist tends to focus on the creation of place. To aid in this endeavour Tadao Ando effects the use, the reinterpretation and abstraction of old cultural nuances. We find a tentative approach to the genius loci of a building site, drawing answers from the environment in relation to form, function, view and setting. The dissertation finds in the study of Church on Water that a truth to materials and a truth to the site are pivotal for true success in modern society however the true account of spiritual and symbolic quality stems from the reverence of history. The Glass Block House echoes the framing of old Japanese Minka houses. We find that the differences are definite but the discipline is similar. The detail and orthogonal composition of space in the glass block house echo the traditional ideal. This accentuates the sense of place and enables traditional family structure.

This dissertation finds these principles repeatedly supported throughout the literature reviewed thus findings can be seen as highly favourable of the critical regionalist approach at a culturally significant level of implementation. The Inquiry shows clearly that a building with no cultural substance is frowned on by society. For Africa to create an architecturally independent identity an architect has to cater for what exists on the land at a socio-cultural level, using that knowledge along with contemporary thinking to interpret an approach.

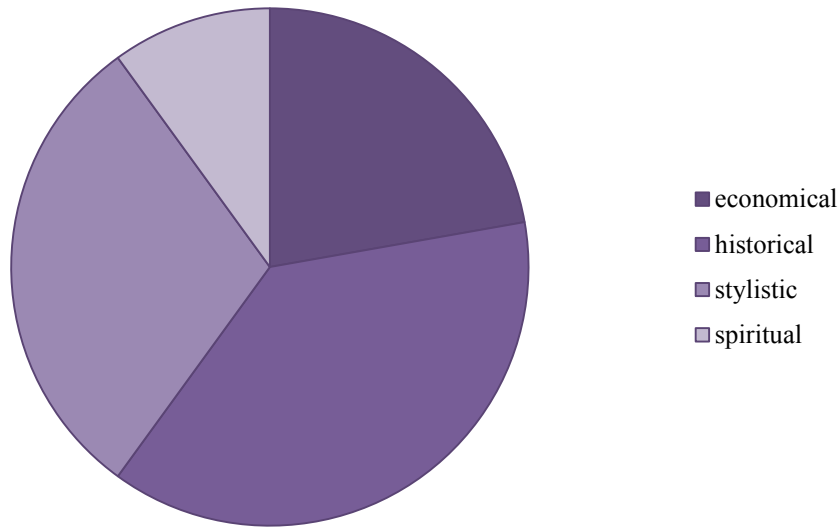
6.1.2. On the Creation of space with people and culture in mind.

The dissertation establishes that the critical regionalist approach to innovative design revolves around a creation of places that draw from the strengths of the past to create a more appropriate solution in the present. When addressing general lessons the modern world can draw from unselfconscious traditional architecture Chapter 3 begins by stressing the childlike wonder of the early civilizations. During a time when understanding was limited, an emphasis on the notional Myths and religions influenced every aspect of early human life. This included how they designed and constructed their homes and shaped their cultural principles.

The Navajo and Dineh visualize a cosmologic connection to their home and creation. They compare the first construction of the first dwelling to symbolic manifestations of their world. In an interview with Mr Lucken, a researcher and educator with a focus on theory, records of Mr Luckens insight into the pursuit of early spatial relationships read as follows:

The tectonic relationship between the rulers and the ruled is a tenant that shaped many early African settlements. The way in which a man and his wife(s) create their compound is a constant dialogue of station and respect. Items are given order within an organic form, the core resource adopting a position in the centre whilst the chief station claims a space either in front or at the very end of the compound depending on custom based interpretations of value and privacy.

Luckan explains that the African people are vested with a sense of structure in their planning that helps everyone work well as a community, this is affirmed by writings by both Oliver (1975) and Rapoport (1969). Both writers on accounts of the aboriginal and native African people draw links to place making principles that work just as well if not better than modernized planning.



Graph 2 Showing the options listed as a major asset of value in Traditional Building.

When Subjects of the questionnaire were asked about their opinion in regards to traditional buildings 34% said they were valuable for the lessons they impart, whilst 27% felt they were valuable for what they represent in terms of style. A few of the participants claimed that traditional buildings had a spiritual property and another set of participants noted financial value in the construction methods employed. Almost all agreed that the traditional buildings are relevant to climate topography and community. This is generally accepted to be a good indicator that there is a need to preserve traditional practice and what it stands for. To this end a method must be established that formalizes the use of spatial tectonics in accordance with traditional African ideology.

The review of work collected by Kultermann relating to the topic of a “New Direction in African Architecture” highlights several applicable examples of work planned for the African context. We learn from the University of Zambia that the connection between hierarchy and social activity is augmented by the critical anticipation of public private space. Centralizing buildings that possess the highest public draw and separating buildings that possess individualized specialties to the outer extremities. The complex does not adopt circular space, resolving to adhere to the practicality of rectilinear form to maximize functionality. Despite this divorce from the organic plan common in most African architecture the arrangement of the architecture has a strong underlying relation to afro-centric design.

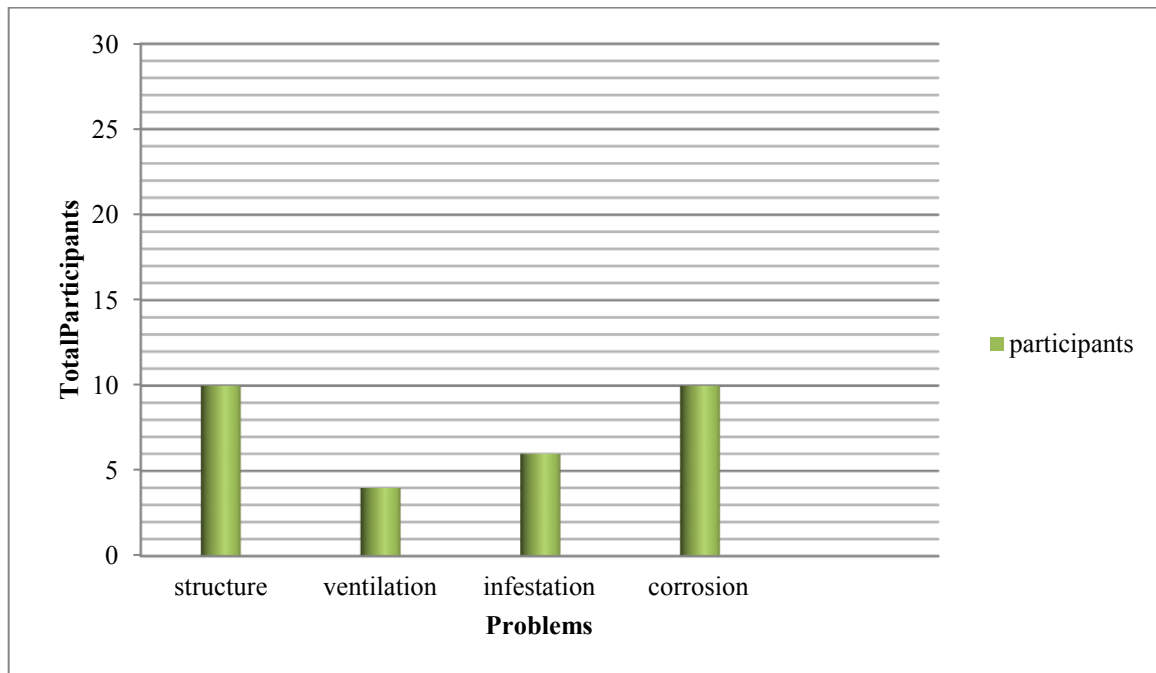
When focus shifts to the design of cultural centres several variants all seems to be augment their design by careful consideration of spaces. Yoshizakas and D'Olivios designs both focus on augmenting the courtyard. Creative cave-like forms in Yoshizakas prize winning design catered for a free and open connection to all spaces. The activities all related and merged into each other to create a balance of open and closed space. D'Olivio goes one step further and establishes a link between circular arrangements and triangular forms. The geometric abstraction proves to be quite effective. Both designs still remind one of formalistic tendencies, the designs are somewhat forced to meet African ideals in a style that receives international appreciation.

Olumuyiwa is no different in this regard, holding close to the Eurocentric architecture from which he was educated. Where Olumuyiwa does make an interesting divergence from his peers is in the way he looks with the perspective of an African architect well aware of the needs to comfort and habitual respect. We find a prolific use of shade, with spatial system that makes a system of hierarchy clear and apparent. Administration is afforded mass and height, ambulatory space is open and flooded with light. Most importantly the outdoor auditorium is open to the air and allows social activity to merge with cultural activity.

From the findings on spatial cohesion, hierarchy and its incorporation into the modern context we find it is important to draw the link between space, ideology and activity. This is achieved by using multiple levels of understandable connections to increase the legibility of Africa based design. Jullian Elliot simplifies the wisdom behind African place-making to a catering of boxes within boxes (spaces within space.). In this we find Levels of meaning intensify with the degree of entry. Such cultural nuances allow for a universally recognized link between modern and traditional principles.

6.1.3. On rediscovering semiotic, materiality and Tectonics.

As explained in sub-chapter 6.1 and 6.2 several subjects that took part in the inquiry felt a strong connection to the traditional buildings. When asked what about the traditional buildings they would like to change a full 30% of the 30 participants suggested that structural changes were necessary. Some complained that there was not enough ventilation, others felt infestation was a problem whilst still more felt durability was quickly compromised.



What this alluded to was that there is a simple need to improve the structural portion of traditional design to create better tradition based architecture. But the issue is evidently more complex than just adopting the best parts of a tradition or culture. In traditional architecture we find that all things are given meaning. The use of particular materials start to take up a place in the cultural practices of a people, this is evident in how the Navajo construct their hogans, how the Zulu construct their Indlu and how the Lobi approach the construction of their earth based suquala. The key materials have a meaning, how we treat and reassess this meaning is implemental to the success of reinvention processes.

In Chapter 4 a study is first accredited to the re-use and reinvention of symbols and their meaning. It is clear that over time we find a simple can change irrevocably. The Nazi

symbol, the swastika is perhaps the most powerful example. Something which originates from a good cultural link to Hinduism is afforded a complete transformation when associated with the acts and deeds of Nazi fundamentalists.

This re assignment of symbolic meaning can be additive. The Egyptian obelisk and pyramid both show that a positive link to an old symbol is just as plausible. They have both been reclaimed by western culture, a democratic culture almost completely at odds with the autocratic practices of ancient Egypt.

With this in mind the reclamation of material meaning is just as complex an issue.

By living in environments that demand various climatic conditions led to specialized house forms. In Sub-chapter 4.4 the assessment of architecture based in a tropical climate shows what factors affect the choice of materials in traditional architecture. The Handmade School in Bangladesh exemplifies an approach to these rustic materials that maximizes both sustainable construction and functionality. The design is a fine marriage of old style architecture and present day technology. All the good tenants of earth based architecture are implemented well.

The greatest measure of success is the fact that the rural community of Bangladesh associates well with the technology used in the Handmade School. The link to their own traditional dwelling construction attaches the community strongly to the building and vice versa. The sustainable practices of the handmade school could easily revolutionize the world but there are obvious drawbacks. The design is functional but not necessary optimal. An introduction of certain necessary technologies i.e. light and heating could compromise several elements of the schools sustainable design.

Quality education can still be achieved in such an earth based design. Cunning use of simple technologies like Wi-Fi stations and green bulb light fittings can make rudimentary materials just as accommodating of techno-culture as the most executive schools. The difficulty lies in society's lack of acceptance in regards to the "green" approach and the introduction of sustainable technology. Things like mud brick, bamboo and moulded earth are commonly thought of as a "pauper's technology" meant for those without means. Its success in a heavy urban context would be limited at the very best of times.

Renzo Piano's introduction of an advanced tech that draws from the simple styles of construction to create an even better solution starts to speak of something more accommodative of the urban context. Here Piano combines symbolic and iconic form with feasible innovations drawn from the traditions of the Kanak. These innovations add to the building at a functional workability and aesthetic appeal.

Lessons drawn from this precedent can be boiled down to a need to not just respond to the genius loci of a place but to respond to the cultural identification with certain technologies as well. Piano's architectural response suggests that designing a culture sensitive design should not be pure emulation. It must be a response to a culture; innovation must improve on the technical without taking away from the meaning behind the technology assimilated. We must reincorporate symbolic meaning and associate it with function in a positive way. Successful integration lies in the respect for the meaning behind the use of a material, colour, form and finish. What these elements represent to a people and how they employ it is a defining factor in how they picture themselves in the world today.

CHAPTER 7 CONCLUSION (AND RECOMMENDATIONS)

It is commonly anticipated that the successful bonding of two different things will inherently produce something better, more versatile and, at the very least, more appealing to the intended user. This is often the case. Metallurgy for example has always strived to merge ore based materials into alloys. We know that carbon infused iron was a technology that revolutionized the dark ages; Samurai swords have been unrivalled in sharpness for hundreds of years because of this carbon infusing technique.

7.1. Revisiting the Hypothesis

It was identified in the hypothesis that the current relationship between positive African Unselfconscious Tradition and modern architectural advancements in technology and current social systems was imbalanced and detrimental to the African continent and its architectural identity. This has been proved valid by responses in the questionnaire with 27 of the 30 participants identifying current architectural representation to be biased. This bias favoured heavily on modernizing without much reference to traditional spatial principals, meanings and technology.

The process of bonding the modern and traditional was further hypothesized to be the answer to a more successful interpretation of African architecture. Current attempts are found to be unfavourable. The study thus aimed to find the defining factors needed to make the merge of the two architectural worlds more successful. In this endeavour interviews, case studies and literature was negotiated.

In the pursuit of the proper integration between traditional and modern architecture this secondary research touched on key issues. The dissertation literature review looked at how architecture can assume an independent identity in architecture. This was found to link best with critical theory and a respectful incorporation of the site. The literature also documents the import of spatial and cosmologic ordering principles in a traditional setting. How hierarchy and spatial cohesion relate to each other gave emphasis on the quality of the

integrative process. The meaning behind materials, joinery and their tectonic link to rustic architecture is identified as the final factor necessary to accommodate Integrative design.

7.2. Addressing the Aim

It was the prime intention of this project to pursue an investigation into the architectural probability of a balanced relationship between African vernacular architectural wisdom and the modern architectural advancements in technology and issue resolving process. This aim has been achieved with findings that support the possibility of a unified construct representing all the positive aspects of African traditional built form in a contemporary modernized format. The systems that can promote harmony between vernacular wisdom and modern day architectural form have been isolated and reviewed.

7.3. Reviewing the Key questions:

- Can Africa create an architecturally independent identity in architecture?

The literature review points to three things. The first is that no architecture is truly independent. Ideas all stem from a common pool of knowledge. Ideologies such as the International Style and Modernism were popular because they argue for a common root to all architectural problems. Secondly Chapter 3 shows that all architecture that is informed by culture is inherently unique. Lastly there is a directly proportionate relationship between the historical and cosmological beliefs of a people and the appropriate architectural solution. That said the way to architectural independent identity in Africa is possible if not already there. It is just a matter of carefully reclaiming what made Africa unique.

- What more can the modern world learn from unselfconscious architecture in general?

There is evidently a great wealth of intuitive knowledge within unselfconscious architecture. The modern world can learn a lot from the familial emphasis and ordering of space, a fact that seems evident in every example discussed in Chapter 3 of this dissertation. The treatment of spatial quality is reinforced by how symbols are created and identified. In terms of legibility alone there is much contemporary architecture could learn from the unselfconscious process. It is safe to assume that the wealth of intuitive design lies

in the building is constructed and what it is constructed out of. Modern architecture has already earmarked several past technologies to develop sustainable responses to climate change. This evidence points to the reality that much can be learnt from the unselfconscious process

- What positive traits are unique to African vernacular?

Well for starters we find the ordering systems of family groups to be quite insightful. The makeup of the average family today is quite different admittedly but core tenants on how to connect one shared space to another remain the same. African architecture also offers us much in the way of constructional knowledge, how people gather together to construct and impart building skills is a very positive trait that we see echoed in the construction process of the Mapungubwe Interpretive Centre. Defensive planning systems are a common trait to African settlements. Use of axial hierarchy is quite clear in most settlements being as clear cut and legible as most modern day urban planning systems.

- How can the positive traits of African architecture be cultivated into modern form?

The limitations of African architecture are varied for each region, so are the associated strengths. To develop a modernized approach to African architectural design we need to establish what the context is, looking at the people in the area, weighing their cultural, economical and social needs against the resources and tech easily available. The approach of sustainable practice coupled with the principles of critical regionalism set up the best foundation upon which to adopt positive traits of African architecture. Chapters 3 and 4 both support the premise that adopting the aforementioned principles of meaning, material and spatial relationships into the workings of complex modern buildings is the best way to integrate the positive traits of African traditional architecture.

- What would a balanced architectural statement for African architecture look like?

The evidence collected via the study speaks clearly on this. Certain things must be present to call any architectural statement a balanced representation of Africa. Through research via the use of questionnaires affirming the aspects of architecture still open to development the following was discovered. There are good aspects surrounding new architecture in Africa but these positive elements need to be reinforced by an already well accepted form of

African architecture. The Case Studies show two examples that differ in location and approach but aim for the same result. In a pursuit for a link between the old and the new, the conventional and the traditionally unique we see the Mapungubwe Interpretive Centre manifest as a positive imposition on a traditionally sensitive site. Intuthuko Junction on the other hand is something of a good idea situated in a troubled place. It seems to fail in some of its functions while excelling at others.

The difference between the buildings could be broken down to a difference in criticality. Considering the ingenuity of the Mapungubwe Interpretative centre, the awareness of the historical power of the sight instantly gave cues as to cultural archetypes that reflect respect, way-making and spirituality. The orientation of the building makes the best of the known climate with thermal masses and vaulted heat sinks being the most powerful passive systems. This positive use of land, meshing history, culture and environment to help aid modern day technology is a successful approach. On the other hand the case of Intuthuko Junction shows a less successful story. In this project the history of the location and the present state of Cato Manor undergo deep political changes. Through the process the very precept of traditional design is tested. The Client has a strong relation to the society, and Intuthuko Junction attempts to serve this connection. In the end, the link between old and new is too desperate.

The motivators needed to draw public interest to the building lie mostly in the the functions the building offers. Provision of essential components, such as a general use hall, an educative component or even a socially conscious IT outpost in an area where such things are sorely needed is the best way to make the response to a building a positive one. Encouraging them to visit the building more often and get acquainted with the other more social and cultural components. The balance of technology and tradition has already been identified as crucial. Meeting the direct technological needs of the urban environment would augment the cultural factors already active within the building.

Finally it was hypothesized that developing an architecture that relates to the African society at a core based level would enable African architecture to grow with less dependency on westernized influences. This may be the case as the public participants indicated an uninhibited passion for the traditional form of traditional African buildings.

7.4. Recommendations

Based on the evidence accumulated in the document, certain considerations become apparent. If one were to anticipate a successful union between modern technology and the African traditional tectonic certain principles would augment the overall relevance and effectiveness of the design. These considerations are general with the express awareness that a portion of the recommendations listed could be implemented in a solitary situation but the union of the recommendation would likely work far better in tandem.

Recommendation 1: The Link to a historical context is important to Integrative Architectural efforts.

It is clear in this dissertation that the Design of any one building is made stronger by its link to the site at an environmental, sociological and economical level. It is however often forgotten that a link to the history behind the site or building typology strengthens its claim to the area and its link to the people that use it. This link allows for innovation while maintaining relevance. Literal adaptation of a historical grounding is not always ideal, in the case of The Church on Water a tie to the seminal concept of a church is adhered to but the related design challenges that same semiotic identity. In designing for a people rooted in history, the idea of improvement does not always have to take away from the practice of a culture. It is good design sense to improve on what historical relevance is already available on site, making value of the depth of human interaction appeals to culture and general human nature.

Recommendation 2: An Integrative Architecture in Africa Treat Space with insight to cultural demands upon it.

When designing for the African populace it is important to take note of the cosmologic differences and similarities that engender the varied identities of a people. The spatial precepts intimated by culture, when integrated into conventional planning systems, bolster social attitudes around the idea of space and how it is to be understood. In the study we find that African buildings within a settlement were connected to space and the outside world.

The concept of boxes within boxes explains the African settlement best. To emulate this all spaces should be connected, carefully arrayed to translate clear stations of power, family ties and key resources where relevant. Social hierarchy may not be as overt as it was during pre-colonial times but all cultures possess hierarchal subtext. Spatial organization within a building and/or complex is easy to understand when they reflect that reality.

African culture is largely expressive. The use of bright colours, wild motions and loud thrumming music is a core part of African tradition. Such activities should be catered for where applicable, housed in large spaces that relate to nature and allocate flexible room for explosive and vibrant movement. This is not to say the absence of allocated space is detrimental. Rather it is the provision of such space where possible that speaks to the character of a people and helps them identify themselves with the architecture around them.

Recommendation 3: An Integrative Architecture in Africa should encourage community

In many cultures there is a keen belief in the import of the greater family. One parable intimates that it takes an entire village to raise a child. In African culture the idea of togetherness is strong. One must literally start being a part of the community at the step of your dwellings door. Every house opens up to a communal space or at the very least a pathway that leads directly to the heart of social activity. This close link between open social and closed residential space within African architecture is on display best when reviewing the trail in plains-land settlements like the Masai compound (Fig 14). A building aspiring to be Afro-centric should express this close link between outdoor space and communal activity.

Recommendation 4: Climate is a telling factor in all African architecture

The terrain of Africa ranges from harsh dry desert to torrential tropical jungle. As a result there is always a dialogue between the architecture of Africa and its environment. The climate in Africa is a challenge that all African cultures have adjusted to. The catering for climate in traditional building methods is as seminal to their identity as the cross is to a Christian church.

A building to be designed in Africa must show an understanding that conventional resources are limited. Creative use of the raw natural materials on hand serves the people better in the long run. Cultural practices when done correctly are highly sustainable relatively cheap and labour intensive, meaning they create jobs. A building design in a hot dry area can use the aid of stone, cob walling, rammed earth and other earth based tectonics to save on the need for less sustainable materials like reinforced concrete or steel.

In tropical areas, mud walls together with a clever use of well treated thatch, bamboo, natural wood and hemp roping can produce a building that is well ventilated and protected from the rain. Augmentation of these materials however is key to integrative success. How the cob-walls are reinforced with lime for instance, or how the bamboo can be fashioned to be held by steel braces determines an improvement of functionality.

Tech should not lead to discomfort. Where deemed necessary the use of thermal glazing, strong foundations, sealing and reinforced structure all can be added to assist traditional methods. In terms of colouring, decorations and textural treatment arbitrary additions to a design are unnecessary. A building should not copy the colour and format of African aesthetic without an underlying motivation and understanding of it. The study shows that the signage in African building is a clear link to African identity. The message it sends is very specific and should not be treated trivially. The better it's understood the better it can be implemented.

7.5. Concluding statement

In Final conclusion this study has shown that the establishment of a new African Architecture is not a simple task. It cannot be confined to a body of rules that dictate exactly how it must be done. African architecture is diverse, each tribe boasting a unique approach to their cultural practices, their natural environment and their climatic conditions. We live in a modern world choked by the global standard of improvement. To follow the popular culture blindly would surely lead to a loss of identity and the constant burden of poor resource management, non cohesive development plans and bad policies on uplifting the general society.

It's fair to say solutions lie in the rich and complex nature of African culture. Further studies into this topic are possible. For instance a focus on how Integrative theory can manifest at a macro scale would prove informative. How integration can be incorporated in the development of villages and help with problems raised by mass urbanization are questions yet to be answered. The field of development is quite open for critical review, and as a study in humanities should aid in the provision of eminent African architecture that responds better to the global, and local, problems the world currently faces.

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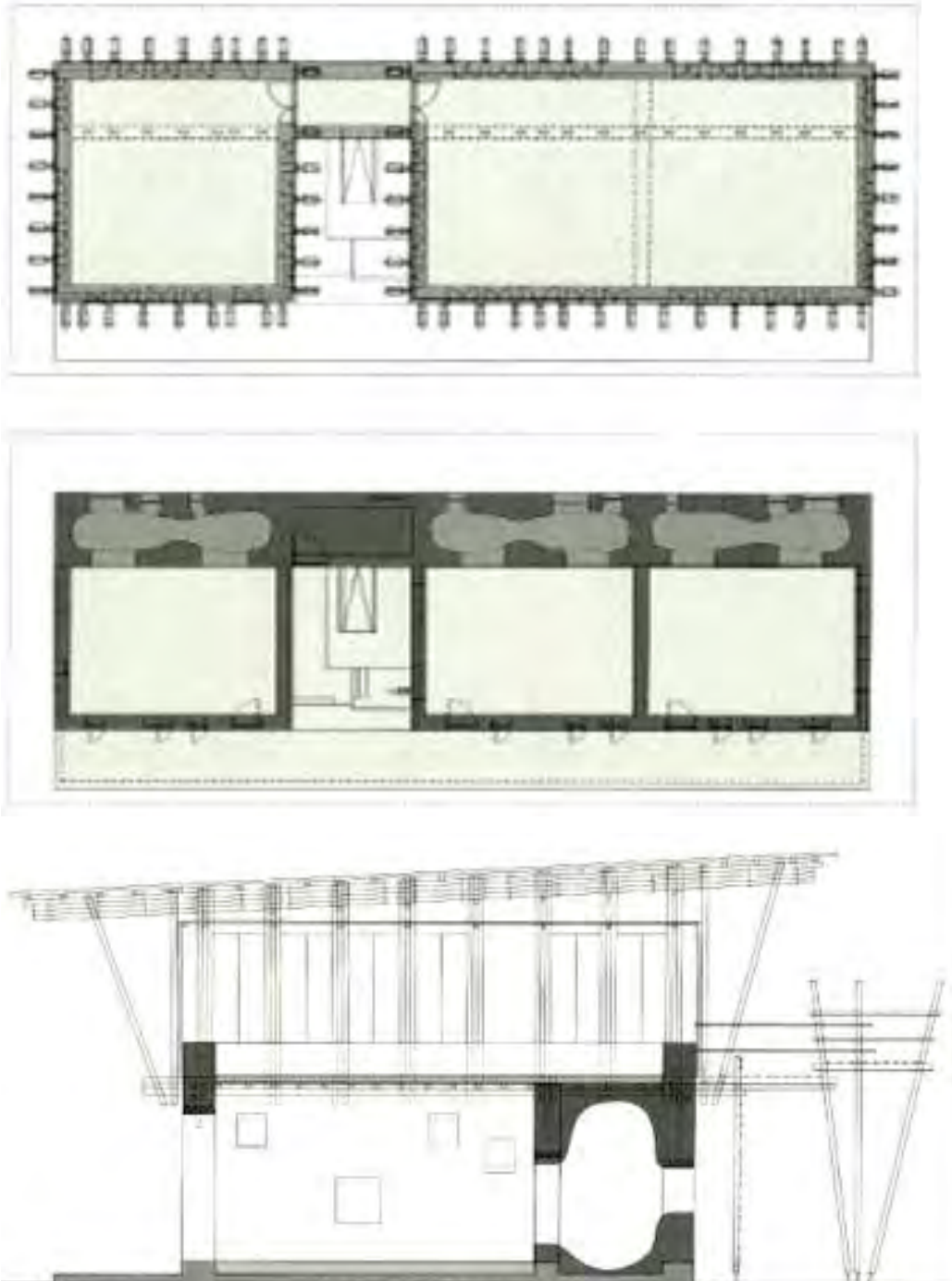
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9. APPENDICES

APPENDIX A: PLAN and SECTION of The Handmade school in Bangladesh

Sourced from Earth Architecture (2009, 200) cited in Chapter 3, page



10. APPENDIX B: interviews

list of the topics to be covered/ kinds of questions to be asked.

- Topics to be addressed in general interviews are:
- Traditional motivations
- Materials and uses
- People and culture
- Modern day architecture
- Africa's role and future in architectural design
- Social influences from old to new
- Social structures from old to new.

All interviewees shall be engaged more in depth on sub topic titles more intimately related to their expertise.

List of practitioners and educators Interviewed:

Mr Yashen Lucken

Prof. Derek Wang

Mr Derek Van Heerden

Mr Stanley Towani

Mr C Migochi

11. APPENDIX C: Questionnaire:

Note this is a questionnaire distributed to a valid, varied, reliable, and unbiased body of participants. list of the topics to be covered/ kinds of questions to be asked.

Attention: all details and data collected to be kept confidential unless participants provide consent

Age:

Cultural Background:

Occupation:

- Whereabouts do you live?

.....

- What type of house do you live in?

.....

- What do you think of “New” Buildings in Africa?

.....

- What new building in your area do you like most?

.....

- Why?

.....

- What do you think of Traditional Buildings in Africa?

.....

- What Traditional Building/Settlement in your region do you like most?

.....

- Why?

.....

- What building best expresses your culture?

.....

- Finally If you could change one thing about new or traditional buildings what would it be?

.....

- Please sketch either your favourite traditional or “New”? Building as you understand it.

(Please Draw on Blank Back if necessary)
Thank You for your participation.

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PART TWO
DESIGN REPORT

I

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PART TWO DESIGN REPORT

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APPENDIX 1

BIBLIOGRAPHY

1.1 INTRODUCTION

As mentioned in Part one of this research Kultermann (1969) is cited arguing his case for a new African architecture. He points out the need for African architects to participate actively in the pursuit of knowledge and the study of the African experience. Kultermann believes that this participation will reveal characteristics that can become common prototypes upon which the African people can rely on. It is the intention of this research to pursue what quantifies the characteristics of modern architecture in an education based African context. To this end a client and project must be identified.

1.2. PROJECT DESCRIPTION

1.3. THE NOTIONAL CLIENT

The client for this project is the Department of Higher Education & Training in unison with the Department of Works. These departments specialize in overseeing the drafting and construction of government based educational institutions. Government has earmarked the Sisonke District as a potential site for growth in several fields of resource development. As a result investing in educational institutions within Kokstad has become a priority.

It is the goal of the Department of Higher Education & Training to create an enabling facility geared towards the delivery of practical skills training. In the Municipalities' prospective development plan for Kokstad there is an allowance for an educational institute. This has been earmarked as a bridging element connecting the established Kokstad CBD to a new proposed suburban district. Government has also begun an initiative encouraging the use of passive energy saving systems.

The Client would like to get the public interested in Sustainable practice. The new development scheme could easily work as a vehicle to educate the local community in self-help green building. As mentioned before the public is sceptical about the need for Sustainable practice. The building project the client proposes should be geared towards developing knowledge about sustainable practice, making the transition to sustainable practice more likable to the general public.

1.3.1. The Client's Requirements

Government have begun an initiative with The Sisonke district municipality to try producing feasible ways to construct clean, efficient and sustainable learning environments. The Client has thus cited the proceeding focal principals by insisting that the building should:

- Establish facilities that deal with technical, economic and cultural development
- Augment the aesthetic of the gateway into Kokstad
- provide an agricultural component to further enhance the farming community skill base
- Deal with the traffic bottleneck close to the site pedestrian entry. Making it safer for pedestrians to navigate while allowing traffic to flow freely
- Provide a Stage for Community Cultural education and Entertainment
- Link a sporting component that caters for mainstream sports within the area
- Carefully consider Expansion and Phase development to better suit curative development budgets.
- In addition to this the Client aims to develop quality “African” architecture responding to the global and local problems of:
 - Water retention
 - Energy Conservation
 - And Social Development

1.3.2.Detailed Client Brief

The Client intimated that it wanted an Architectural intervention in the Kokstad area. The building was called to be a Skills Development Centre. This centre is set to cater to the entire town of Kokstad and the surrounding settlements. The Site must be open to green building principals, must be iconic and must possess a focus on community based institutions of learning.

The key buildings were identified via dialogue with the client. (See Appendix A)

It was identified that the building complex needed at least one multipurpose hall. This hall will be directly linked to a prime focal area and is set to be easily accessed by both instructors and students. The Client insists space be made for sale and trade with an emphasis on pedestrian traffic with full accessibility for disabled persons.

Space is to be given to a publicly open sports field facility. This was to address the efforts of Lets Play ® an initiative by government and the Supersport broadcasting committee. Provision for outdoor activity will also bring life and interest to the site. The building is best intended to interact with a watered edge, providing a facility for the general public that allows them to engage with the water and possibly take rides out on hand crafted boats.

The Skills development Campus itself is to have several semi- public building facilities that students can benefit from. These buildings will primarily constitute of a library and coupled IT block. A restaurant and various exhibition spaces, craft stores and open performance areas will address the more social Campus activities allowing the students and admissible public to interact and celebrate what knowledge is acquired on site. The Client mandates that those who enrol on campus will be offered courses in agriculture; culinary, performing and visual arts; business social sciences and economics as well as science, technology and metallurgy.

All these disciplines are to be housed in appropriately outfitted buildings. Overseeing all this will be the admin block. In it there must be provisional offices for the admin staff and educators. This block will house all the instructors not actively instructing, the only exception to this being the Culinary arts building where the instructors double up as chefs for the restaurant below.

1.4. CONCLUSION

The need for a clear approach to the skills development centre is best divined from the client and the intended context. Most skills development facilities are minor, often housing themselves in abandoned sites or rentable space. It is rare for a skills development centre to take over its own site. The scale of the proposed complex borders on that of a technikon or a university. The reason for the excessive size of the proposed complex is to cater for the unique nature of the buildings context. It serves both as a place to learn and as a platform to market particularly unique skills and abilities. In this respect the idea of development is heavily challenged. One cannot make an impact on the development of a people by attempting a series of minor interventions. To truly catalyze change one must amalgamate many good interventions and ideas together.

At the heart of the attempt to promote development one finds the siting of the project to be most important. The public must be made conscious of the nature of the facility from the outside in.

In a sense the clients' goals and requirements all rely on a site that impacts lives at every level. Any building seeking to impact a people should attempt to speak their cultural language while maintaining a respectful character towards its socio-economic and agricultural environment.

In the next Chapter the Siting process is overlooked. A location that best meets the requirements of the client is the first and most important part of the design process. This will be determined by a site survey of three likable locations. An analysis of each sites' possible opportunities will then be carried out with the results later weighed against the weaknesses and risks posed by the site and its context. Before this a look at the history defining the Kokstad area is required to better understand the demographic makeup and the resources available.

2. INTRODUCTION- HISTORY AND BACKGROUND

The setting for this project is in Kokstad, Kwa-Zulu Natal. It is a small town with a population of approximately 63052 according to the community survey 2007. (StatsSA.com). It is a melting pot of varied cultural and developmental processes.

The founder of Kokstad, Griqua chief, Adam de Kok the third who settled in Kokstad in 1863 set up a small area that developed into a mission and supply station for farmers and passersby. The surplus of the farms were stored and sold in the Kokstad area around which industry arose and trade professions became established.

Kokstad has a strong religious grounding is highly prevalent today with a strong Christian presence. This Christian presence was augmented by colonial tendencies to fashion settlements with churches featuring in prominent locations in this case being to either end of the central artery of the town, Hope Street (see fig 2).

Of late Kokstad has seen much contemporary growth. The municipal seat of power has settled into the town. Other new noteworthy additions to the urban fabric include the municipal buildings, the new correctional facilities, the industrial businesses on the outskirts of Kokstad and the inclusion of the Oprah Winfrey School and the equally important St Patricks' College.

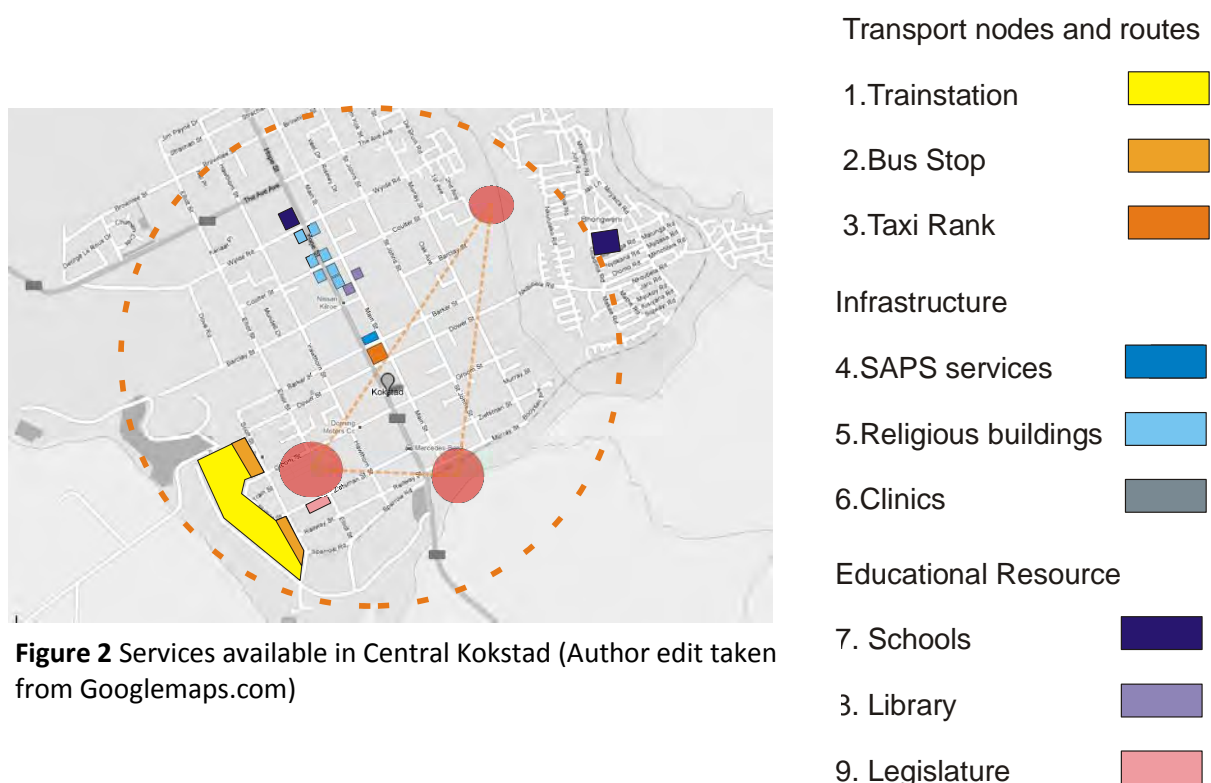


Figure 1 Images from left to right of Adam de Kok, Hope Street and the grazing plains just outside Kokstads perimeter

It is clear Kokstad is at a crucial stage of its development. It is important to ensure this growth is a unified affair Integrating Cultural past with Modern advancements and opportunities essential for the equal upliftment of Kokstad denizens.

The reasoning behind wanting to site a school of skills and development in Kokstad is tied strongly to the ambiguity of the Kokstad area itself. The greater Kokstad municipality was once a part of the Eastern Cape. It has since recently been adopted into the region of Kwa-Zulu Natal for logistic and service related reasons. The area of Kokstad is also a place that harbors Zulu, Sotho and Xhosa speaking people along with a mosaic of other cultures such as the founding Griqua and various Afrikaans and English speaking peoples. It is thus a location ripe for the celebration of cultures, tradition, languages and social practices through educative process.

The traditional authority of the community is still a very important constituency within the Greater Kokstad Municipal area. As such, it deserves focused attention as a special interest group. Kokstad itself lacks a telling signature. This leads one to believe the infusion of culture into the heart of Kokstad can express best its multi-faceted identity as it is in transition from old to new, farming to industry to new age tech and fractured society (under apartheid) to a diverse, Culturally expressive and unified citizenry.



2.1. SITE SELECTION AND DISCUSSIONS (OPTIONS)

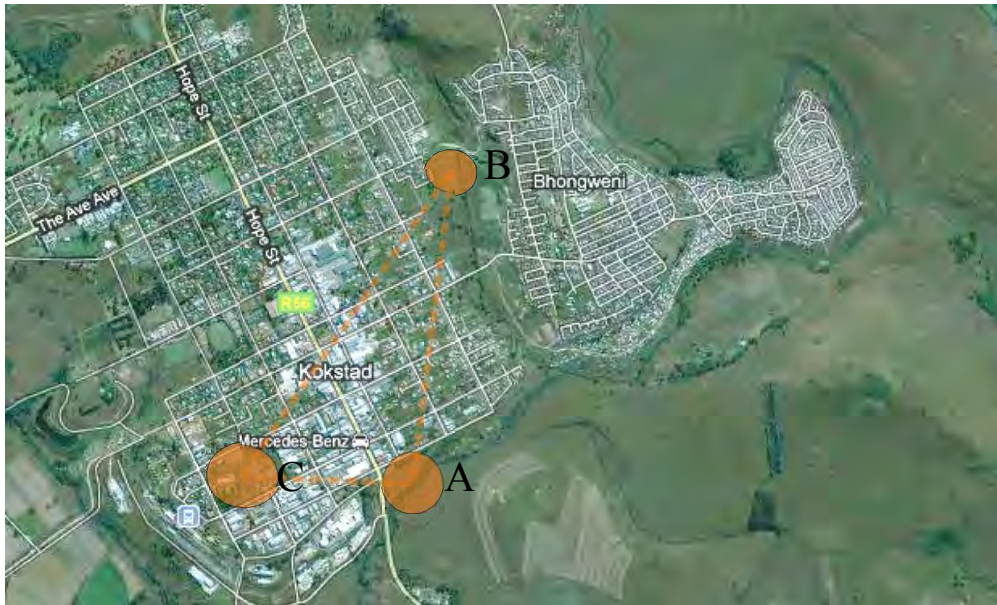


Figure 3 Site Selection choices (Google Earth)

In order to begin selecting a site a set of general criteria which had to be explored were set up and applied in an analysis of the urban environment. The site criteria were that

- The site must be in an area that is easy to access by those who benefit from it.
- The Site had to be placed at a bridging or within a central area
- The Site should preferably be a green site, as yet undeveloped and open to growth.
- The Site needed to provide some positive environmental options
- The Site should possibly have a link to a culturally representational aspect of the town

Other less vital criteria were generally considered such as the ease of access and a clear and easy establishment of connections between exits and transportation nodes. The upliftment of the previously disadvantage was key. Thus the site must be a bridge intervention that acts as an integrator of cultures, classes and educational ability.

Kokstad is an industry driven town that has tended to lean heavily on religion and functionality. The element of cultural expression is lacking thus the introduction of cultural celebration is important. The Sites chosen can be seen in Fig. 3. Sites A, B and C each represent the aforementioned criteria. Thus to establish which was most beneficial an overall site evaluation was conducted.

2.2. SITE EVALUATION

Site A- Where the N2 and Umzimvubu River meet.



Figure 4 Image of entrance to Kokstad and Site A

Site A is Located near the entrance into the town of Kokstad, as you'd arrive off the N2. The entry road crosses over the Umzimvubu River establishes the sites south eastern border. Its boundaries are defined by a disused railway track (North West), Main entry into Town and semi functional public Park (South West), The Umzimvubu River across which A Newly constructed Industrial development (South East) and Farm shop (due South) were observed, A soft protection of green trees and (North, North East and South East). Site A is ideally placed for free growth. It is not very historically significant but the aesthetic factors of its current surroundings are noteworthy. The most obvious problems arise from the relatively high level of noise and traffic congestion on the western edge of the site. (See fig.5)



Figure 5 Diagram of Prevalent pedestrian and Taxi routes around Site A

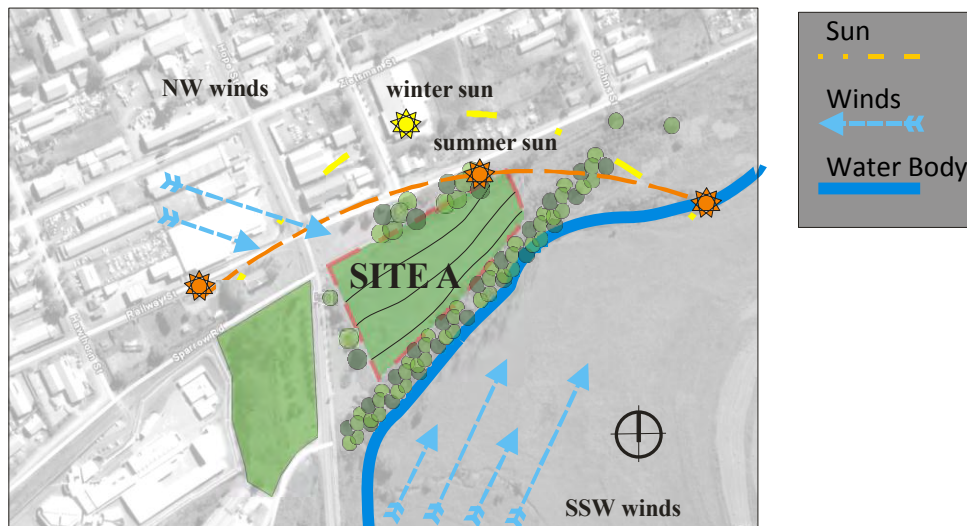


Figure 6 Environmental Diagram of Site A

Environmental advantages around Site A are abundant. The trees Shield against harsh cold south southwest winds and the presence of a river opens the site to several water based possibilities like passive cooling and water management. The slope of the site is gradual and uneven. It could prove an advantage if used correctly.

Strengths		Weaknesses	
<ul style="list-style-type: none"> Gateway to Kokstad Lush Green Site, least enclosure Easy access to Umzimbuvu river with trees to North, East and South Good for iconic placement (announces the town) Easy to find Good link to industry and Main avenue of arrival Good road 		<ul style="list-style-type: none"> Noise Level is quite high towards the SW boundary The road is congested Relatively far from Bongweni and township. Set on a relatively steep gradient 	
Opportunities		Threats	
<ul style="list-style-type: none"> Possibilities to make use of and augment the River Traffic interventions may be necessary and thus celebrated. Relationship to industry Site suggests positive North East South West Orientation 		<ul style="list-style-type: none"> Near an area prone to flooding Heavy industry Building being constructed Nearby may interfere with Site Integrity Possibly situated on a flood line 	

Summation:

Site A has many good points going for it but is quite far from the industrial district and the townships. A way would have to be developed to get people closer to the site, perhaps establish a new node for taxis, at the same time remedying the congestion at the entrance of Kokstad central.

Site B- Link across to Bongweni Township



Figure 7 Diagram of Prevalent pedestrian and Taxi routes around Site B

Site B is to be placed carefully between Kokstad CBD and the slowly growing Bongweni and Shayamoya Townships. Its boundaries are free; clear of all industry it has a green expanse to the East and South with marginal contact with the residential surroundings. The Site is set on a potential torrent flood line that in the case of a disaster it said to swell up, thus it is left for the most part alone. The stigma of the gap that seems to define town from township has slowly eroded over time.

New residential homes encroach upon the green open space as if slowly both Bongweni and Shayamoya townships are trying to merge with Kokstad town. A building Sited here could have the effect of a remedy to the disjointed zones and ultimately bridge the gap between social regions.

The figure ground shown above gives clear indication how sparse the built environment is to the east and west of Site B. New



Figure 8 Environmental Diagram of Site B

Site B is a fairly green site however the threat of flooding and the gradient is discouraging

Strengths		Weaknesses	
<ul style="list-style-type: none"> Bridging site between Kokstad and Bongweni district Green Site, Minimal enclosure Easy sightlines towards and away from Mt Currie Relatively quiet, good for contemplative study. Local labor is near and can be involved in building process. 		<ul style="list-style-type: none"> Isolated Set on an awkward Gradient Poor soil conditions (Clay) Windy Poor roads 	
Opportunities		Threats	
<ul style="list-style-type: none"> The site is large and thus gives room to grow. Strong winds can be harvested Clay can be good for adobe brick developments An accommodation component may be possible in the urban framework. 		<ul style="list-style-type: none"> Potential flood path according to local information Security may be an issue if building is to stand alone. 	

Summation:

Site B is far from the heart of Kokstad but is sited at the gateway to the townships, this proves both advantageous and problematic. The advantage being the potential to feed of existing taxi routes in and out of Bongweni and Shayamoya. The disadvantage to the location of Site B is that an isolative position makes it difficult to “belong” to either the Kokstad or township districts.

Site C- Inner Town Site

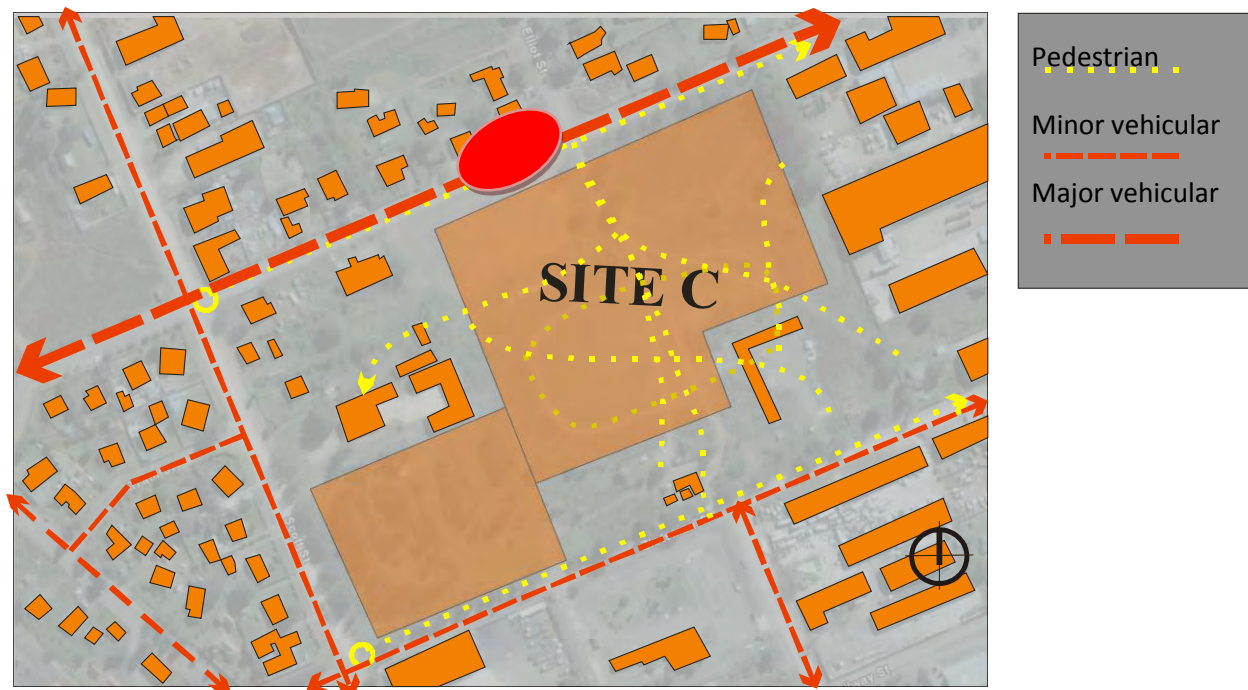


Figure 9 Diagram of Prevalent pedestrian and Taxi routes around Site B

Site C is a central site just off of Hope Street. It is situated in an open area that is traversed by several impromptu footpads and dirt roads. The site is relatively flat and devoid of any serious contours with a minimum amount of vegetation and water on site. The site is well placed infrastructure wise with easy access to the site from 3 roads.

In regards to the boundaries there is a clear point of entry along Groom St that all who utilize the area seem to recognize (See fig. 9). The Industry about the area is however rather reckless and constantly damages the site, throwing garbage and encouraging workers to take time off in this area.

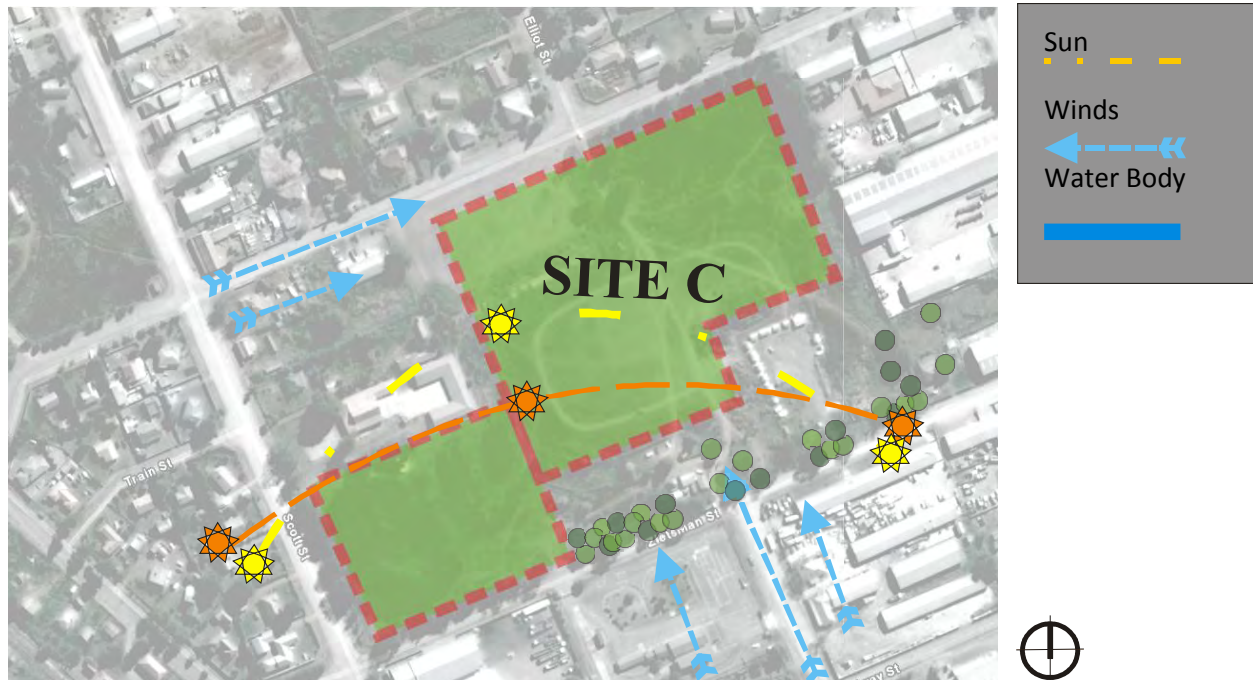


Figure 10 Environmental Diagram of Site C

Strengths		Weaknesses	
<ul style="list-style-type: none"> Central Site Plenty of Space Relatively flat site Lots of hints as to pedestrian traffic and utilization Close to Train station and bus stop Easily reached from city centre Multiple avenues of ingress and egress. 		<ul style="list-style-type: none"> Boundaries are hard edges with lots of noise and industrial activity. Natural environment is superficial. No water and very few trees North East border is defined by a variety of workshops who dump near and on the site Poor road conditions 	
Opportunities		Threats	
<ul style="list-style-type: none"> Site can be integrated fully into urban fabric. Hard boundaries can be softened, traffic better controlled 		<ul style="list-style-type: none"> Area is empty during the night Currently loitering and criminal activity has been high in the area 	

Summation:

It is a possibility to use the industrial precinct as a backdrop for developmental learning however one fears the site itself leans towards a far more corporate development than is desired. Some developmental issues will have to be assessed carefully in order to weigh the sites location based advantage to its situational disadvantage.

TABLE 1: Analytical conclusion and choice

	CRITERIA	SITE A	SITE B	SITE C
1	Size of site	*	***	**
2	Availability of Infrastructure	**	*	***
3	Market related Factors	*	**	***
4	Orientation	**	**	*
5	Gradient	*	*	***
6	Frontage	*	*	***
7	Aesthetic value	***	**	*
8	Access-pedestrian & vehicular	**	**	***
9	Urban Context	**	*	***
10	Noise	**	***	*
11	History	*	*	***
12	Social Value	**	***	**
13	Positive environmental make-up	****	***	**
14	Accessibility	**	*	***
17	Cultural Opportunity	***	**	*
18	Industrial Opportunity	*	*	**
19	aesthetics	***	**	*
20	Security	***	**	*
21	Availability to Passive systems	****	**	*
TOTAL		43	33	41

This table was drawn up to compare how the sites meet the criteria deemed important to the project.

2.3. CONCLUSION - SELECTION

As you can see in table 1 all the Sites mentioned above are well located with their own unique strengths and weaknesses. When tabulated however it is clear which Site matches the most criteria sought after by this study. Site A has a majority mark reflecting its appropriateness for a school of technology and skills development. Understanding the role of integrator that the building will have to serve it is easiest to assume Site A has the best potential to house a multifaceted school that gives something unique and interesting to the Society.

As a result it has been picked to serve as the Site of this project and shall be fully analyzed and documented so as to research the advantages its surrounding have, the advantages its history proposes and the advantages and or disadvantages future developments in the area might incur on the site and its planned nature.

CHAPTER 3 DESIGN DEVELOPMENT AND RESOLUTION

3. CONCEPTUAL AND THEORETICAL ISSUES

3.1. Introduction: The Problem of an unreadable African City

The Issue of Legibility in the built environment has been discussed at length by theorists such as Lynch and Alexander. These great minds of contemporary architecture have isolated some of the principles of legibility, namely a careful harmony of edges, path-making systems, nodes and hierarchical cues. It's been well established by the literature review and case studies within this dissertation that Markers of cultural origin are consistently evolving. As a result of this constant evolution we find that meanings and cultural connections become muddled.

In Southern Africa these meaningful symbols become blurred by the colourful past that makes South Africa what it is. The cultural identity of the people of Africa has evolved but the built environment has yet to catch up. At the moment a lot of the legibility within the city is characterized by a clash of ideas stemming from the apartheid and colonial era. These ideas are then further confused by the presence of modernist, post-modernist and international style architecture.

In such a complex environment the architectural language of the general built form is heavily influenced by the aforementioned theoretical methodologies. How then does one establish a contemporary African architecture in an environment so heavily influenced by other non-indigenous ideas? How can one ensure this architecture proves legible and clear while maintaining an identity unique to the African Continent? It is here that the research proposes the principals of Semiotics, Cultural sense and iconography should be married with tectonics, Physical determinism and social spatial anthropometrics. Finding a link between Eurocentric modernity and indigenous architecture in along the lines of these principals will undoubtedly help in the development of a built environment as seen through the contextual perspective of Africa.

3.2. Concept Development

3.2.1. Spatial Anthropometry and tectonic relationships

One finds that traditional cultures had a very simple approach to their settlements. Often traditional settlements set aside a defensible place near the centre for treasures and/or resources. This space was then linked, either symbolically or physically to the place where the ancestors or protective spirits of the tribe lie. Leadership, in most cases the head of the household, was connected directly to the central space. The heads place when addressing others was always at the most important part of the centre space. From here the leader of the settlement oversaw rituals and made judgments. (See figure 11)

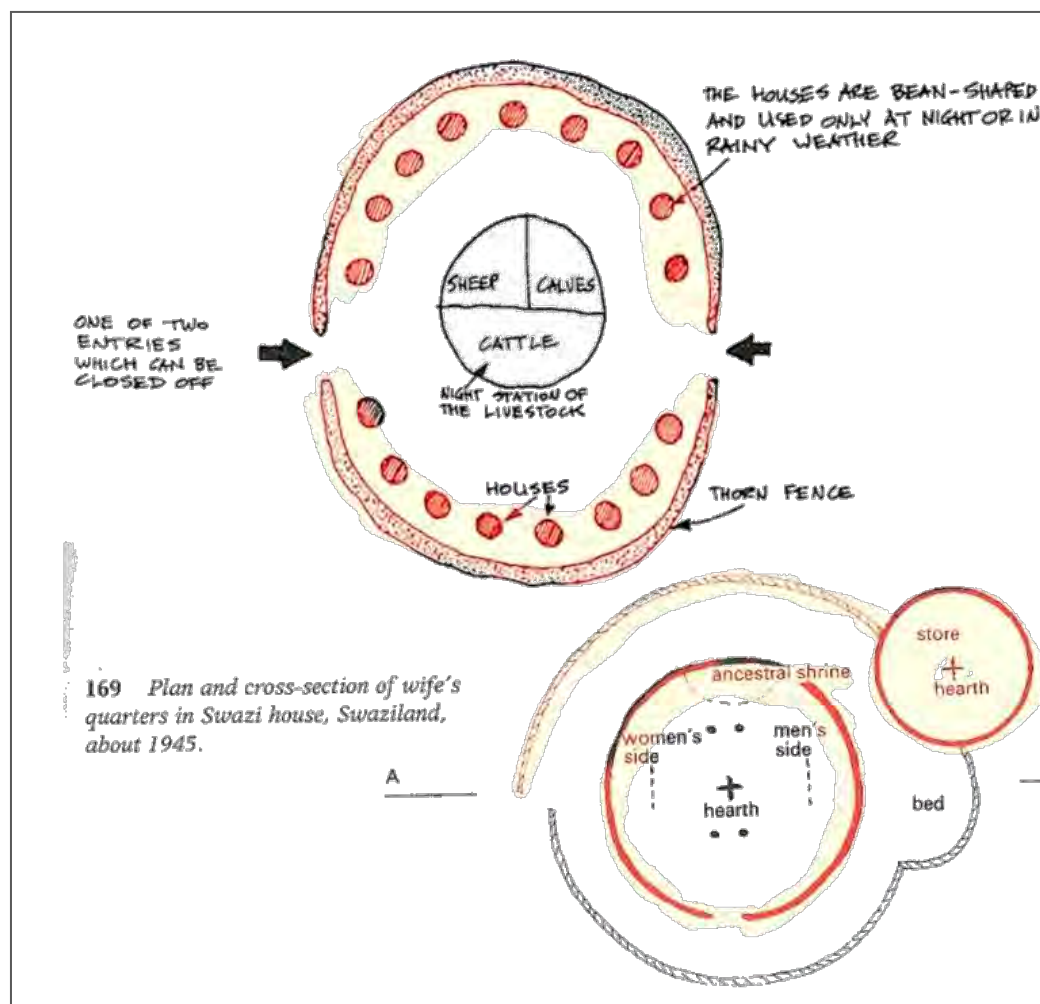


Figure 11 common diagrams of Traditional Settlements and homes

As the homestead develops, or in the event of a second family leader who defers to the head of the family, another central space may be established off axis from the centre. From here the second can conduct the duties required of them. These spaces are always linked. The approach of visitors new to the settlement is always from the formal approach and into the main space. This approach bypasses a point of control, in this case the house of the family Head. In other cases the houses of the young able bodied sons.

This is the customary way of showing respect to the family and culture without even having to say a word. It is a traditional practice that has transcended the rigors of time. Upon reflection the axial direct of the skills development Centre was arranged and rearranged to reflect this (see Figure 12). Spatial hierarchy is thus arranged In the Skills development Centre as a settlement with the formal main approach set on axis from the plaza into the building complex. The LAN and Admin buildings act as corridors and the course of arrival spills out into a great space (1) the space is also accessed from 2 other points of axis, this makes it the most vital and active space redirecting them down the site towards the bridge.



Figure 12 diagram of Links to spatial systems

The joining of old and new technologies are explored on the campus grounds. Tectonic systems are married and functions are brought together. Elements that share base traits are thus brought together lending elemental properties to different precincts. The ovens and the forge for example are two fire based elements. They are thus housed together just off from the centre of the site. Fire is a simple for energy and life, it is here that food is grown and sold out via the sub level restaurant. (See page) The IT and the library buildings assume a similar connection (See Page 34 and 39). The bridge linking these two built forms is the clearest marker of this union. It brings an impression of a clear and precise relationship open to light and suspended in the air.

Expressions of sinuous energy are linked to the “snake wall” which wraps along the south east wall. The multipurpose hall, practice rooms, class rooms and seminars are each equally shaded by this huge wall. The wall in itself becomes a unifying factor; it generates the identity of the precinct from the main road and speaks of the nature of the flow of people bridging from the Kokstad CBD to the prospective new development.



Figure 13 "Snake Wall" to the left and the science and arts block, centre and right

The arts and sciences, who at a glance share little in common, share a green house agricultural garden and a minor square for exhibitions and artistic display. The energy of cool science and passionate art is conflicting but in the same breath it holds an equal amount of mystery and creativity. The energy of this connection activates the minds of those that filter down the complex, bridging over to the new development after emerging between these two precincts. All connections speak of a tectonic union of spaces that are drawn off from the markers of the site. This is an important distinction to make from all other attempts at African architecture because in this case it is the family of links that make the building legible augmented by the architectural language and meaningful spatial divisions.

3.2.2. Semiotics and creating meaning

Semiotics involves meaning and interpretation. The Skills Development Centre proposed is intended to represent the pure ideas of an architectural district contrived completely of meaningful representation. The architectural material, though robustly sustainable, is in its own way a message to the people inhabiting the site. Stone walls built from their quarry, rammed earth excavated from their soil and timber slats extruded from their trees. The buildings are all an achievable and memorable example of the beautiful resources of the African continent.

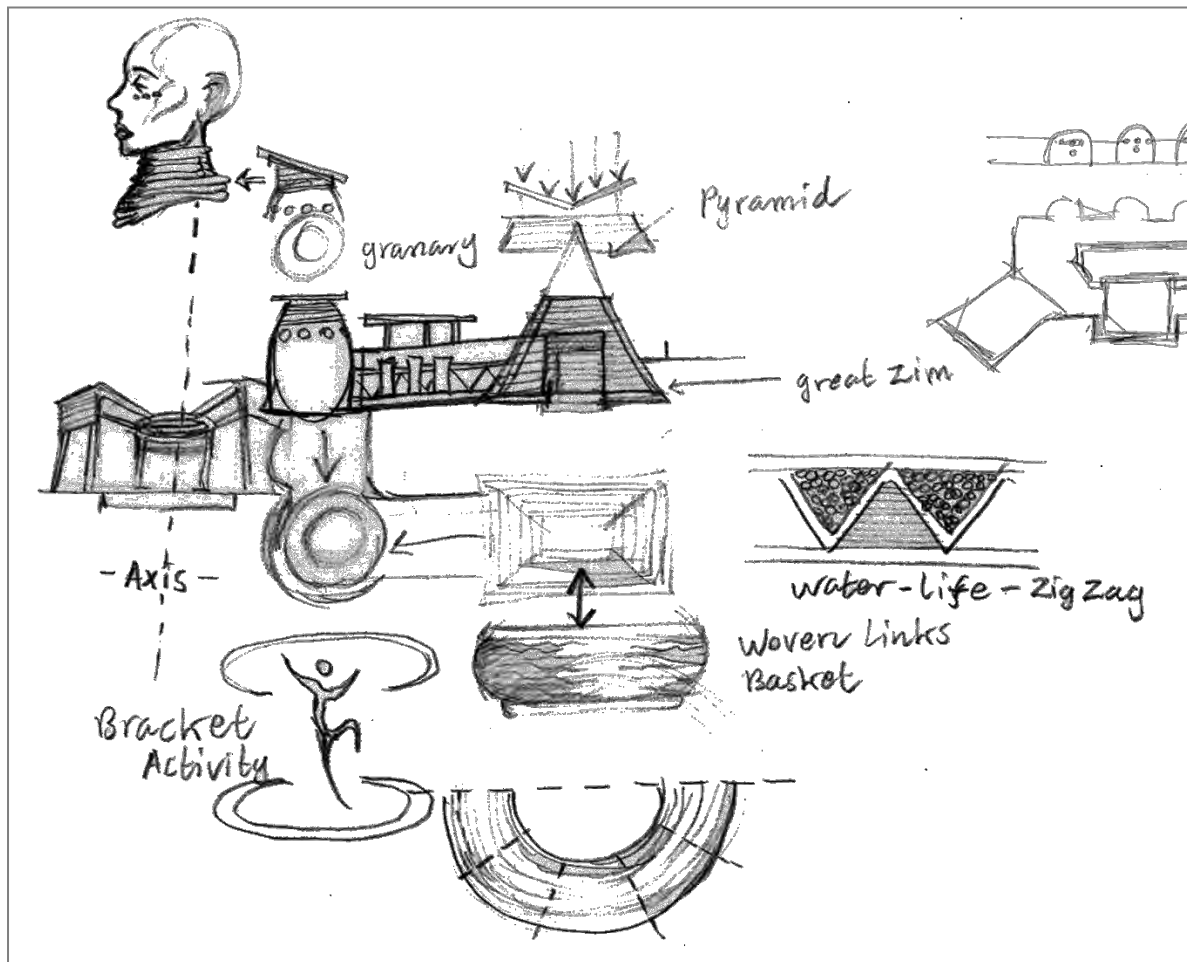


Figure 14 Diagrammatic Sketches of the Semiology and symbolic systems employed

The entire site is split into two, a heavy earth bound lower floor and a light flooded, open and unrestrained, upper floor. The buildings sit proudly in their surroundings and adopt forms that have a dialogue with the people of Kokstad. Among the Xhosa the zigzag is a sign of life, many cultures associate it with life giving water, activity and/or health. For this reason there is intention to decorate the wall facades liberally with this decal. Another meaningful marker is the simple dotted line. It is a highlight, often worn on a beautiful woman's face during certain important events.

The granary thus becomes an abstract representation of African pride and beauty counter balancing this smooth granary is the heavy pyramid like form with a shunted top, much like a ziggurat or chamfered plinth. The apex was a symbol of transcendence, what then of a pyramid capped with a butterfly roofs wings? The merging of two commonly understood abstracts creates a new abstract symbol. It enforces legibility and has a grounding effect to it that ties the site together.



Figure 15 Tentative sketch of a semiotically interpretive precinct.

Wherever the aforementioned elements are prominent, joint or announcing entry symbolic elements are introduced to tie them together decoratively. a person arriving at the site is immediately made aware of the import of the forms. At the centre of it all there is but the simplest and thus the most powerful symbol of all, a circle. The circle is an all inclusive element. In this project the circle becomes more than just a circle. It is a focus lens that zones in attention on the people occupying it. The space draws interest to how people wish to celebrate their talents, gifts and skills.

Of course other shapes occur along the site, the diamond and orb, for example, are both pure and pristine geometric elements. The repetition of the number three in window allotments and form placement is also culturally strong linking both Christian faiths, prevalent in Kokstad, to traditional faith who associate the significant number with balance and equality.

3.2.3. Sustainable Methods of Servicing, Educating and Informing

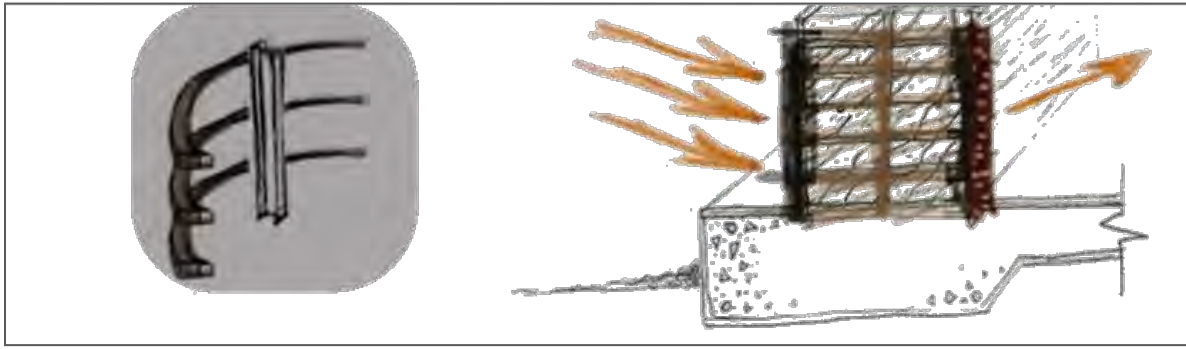


Figure 16 Sketch of ideas for Passive thermal control

The built form of the skills development centre was designed to interact well with climate, employing minimal mechanized help. To this end stairwells rise to baghirs that allow hot air to escape during the day and then vent shut on a sensor during the night. The building is made of heavy mass that acts as a heat sink, particularly on the lower floors. The rammed earth is kept on a plinth to prevent damp rising and the timber slats are reinforced so as to withstand harsh wind holds. All buildings surround an internal courtyard allowing for easy and quick cross ventilation. The passive systems however are not the most sustainable part of the building.

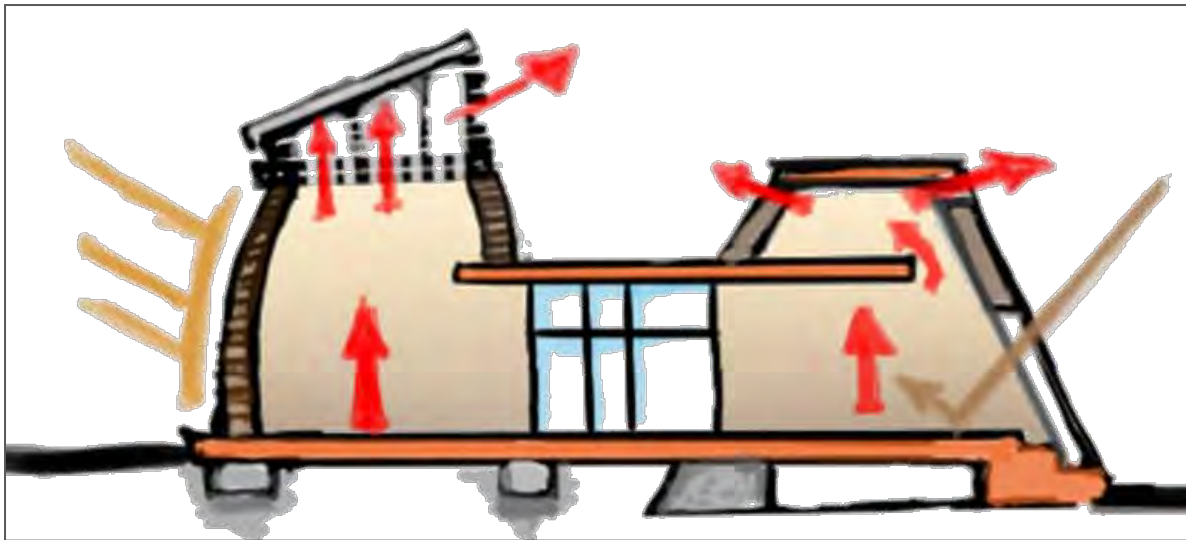


Figure 17 Sketch of Ideas for Passive Ventilative system

The education process at this particular skills development centre are strongly tied to the action of DIY sustainable practice. The agricultural department uses shadouf like constructs, fabricated and serviced by metallurgy, to water their planted fruit. Whatever is grown there or on the roof garden is either sold at the flea market and agora or used by the harvesters themselves for food. The smithy uses lump coal fire and clay. This is both to prevent excessive electrical drains and to impart a practical and more economically viable skill to apprentices. The building is earth based and thus sourced from nearby quarries and soil deposits. The entire building thus is a lesson to the students in working sustainably. By learning they take the knowledge forward making a big impact within the Kokstad community.

3.3. FINAL DESIGN PROPOSAL

3.3.1. Conceptual Developments-Planning

In developing a concept for the design of the Skills development Centre a few steps were played through. First was an assessment of the immediate resources available. As detailed in Chapter 2 the selected site provided was to be at the entrance of Kokstad. With a set idea of the accommodation schedule and requirements diagrams were drawn to better assess spatial relationships.

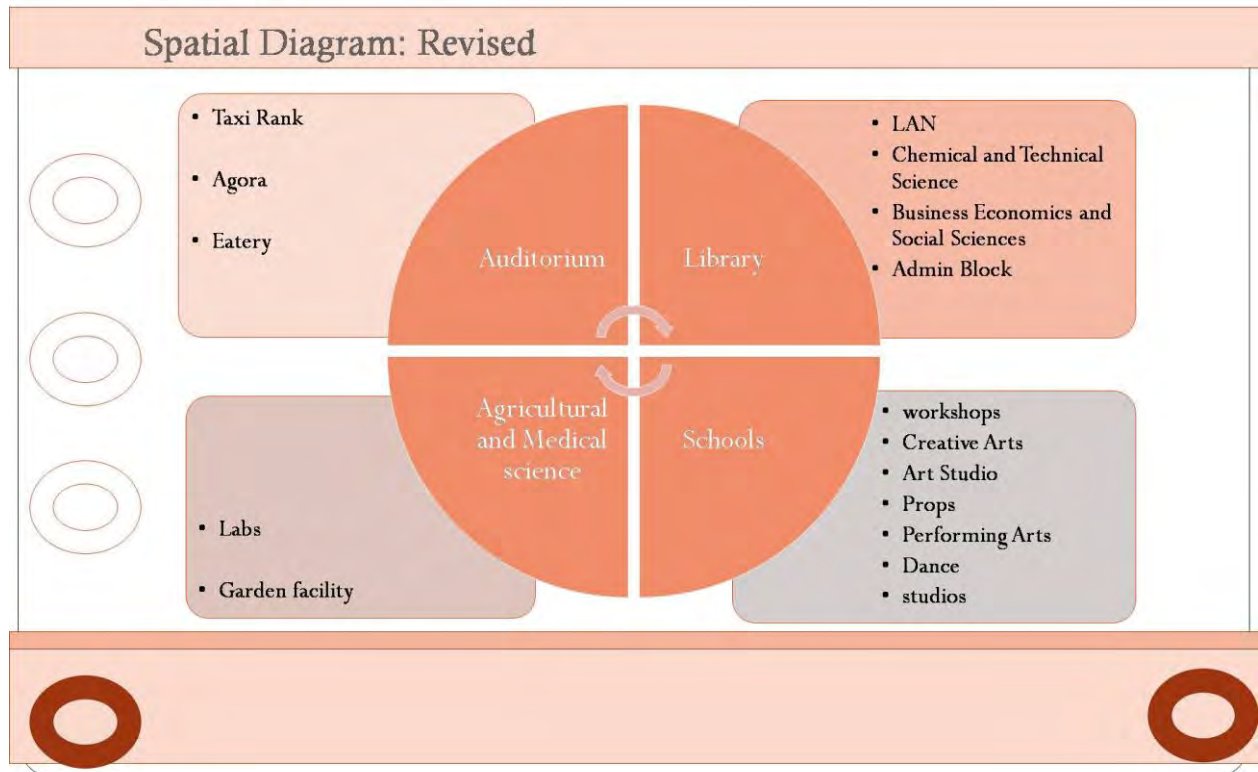
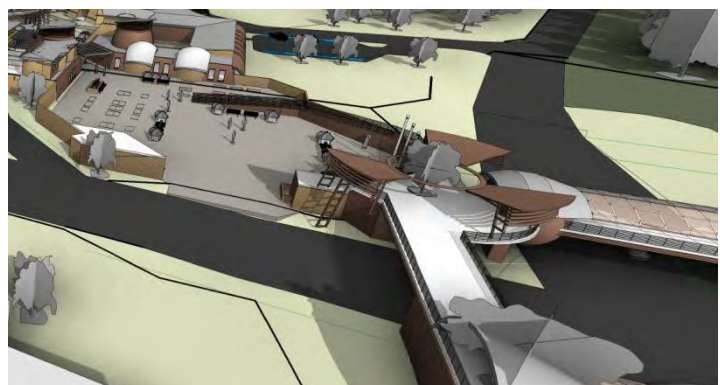


Figure 18 Spatial Diagram

In the initial design the major functions were identified as the library, the auditorium, the agricultural science facility and the schools building. Sub elements were linked to these main functions and grouped in a manner that reflected sympathetic functionality. The idea of an open public space connected to the auditorium was a major design generator. The urban framework was encompassed with the general design.

A bridge was introduced that allowed for market activity and safe passage over the congested road intersection. People who came down from this raised bridge enter an open square hosting as many public and student run activities as possible.



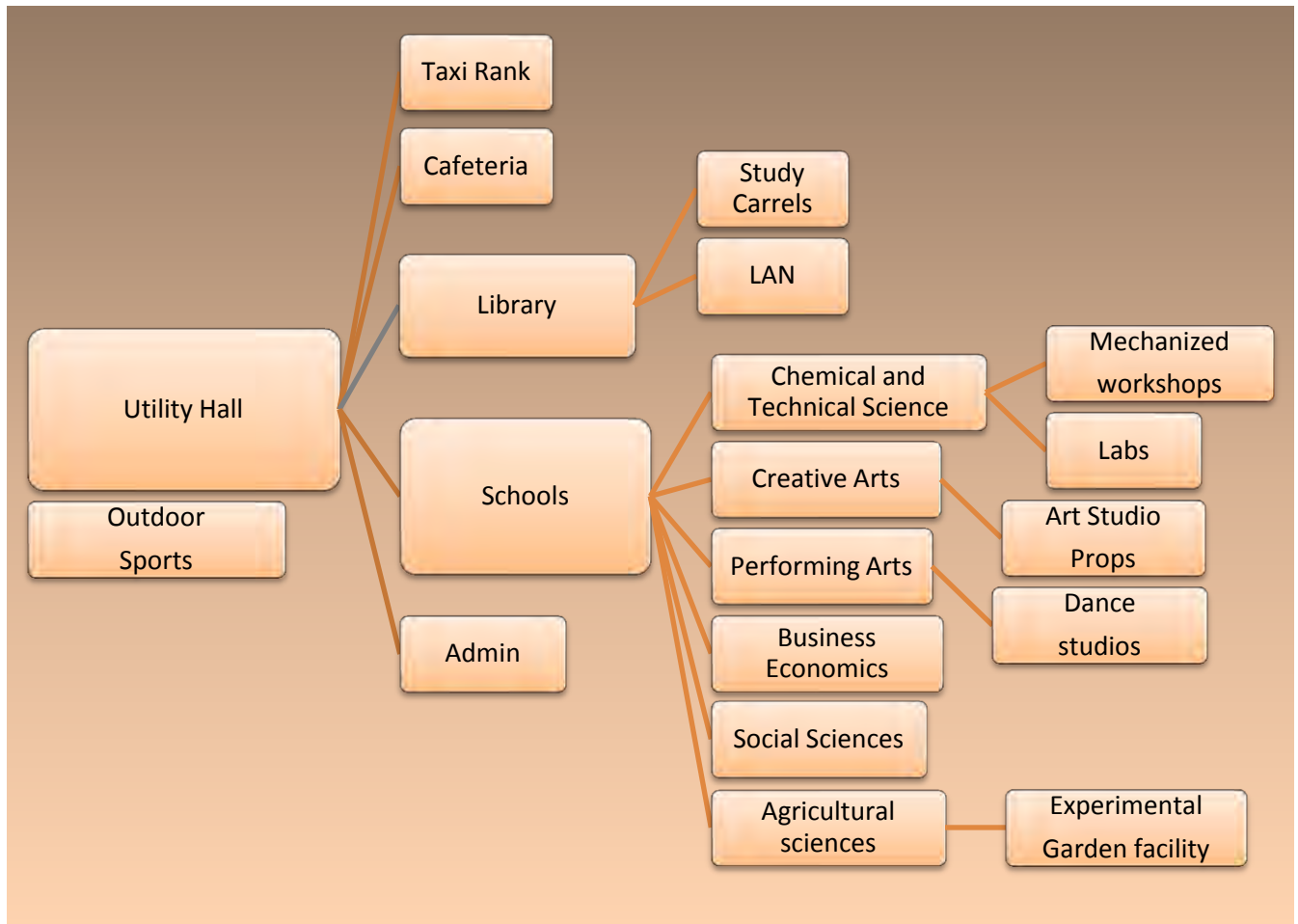


Figure 19 Graph of spatial relationships.

The spaces link together with an intention to develop realms of public, semi public and semi private space. Figure 19 above shows an example chart that reflects the nature of the organizational system. The Restaurants and Utility Hall are instantly experienced shortly after is the LAN and Library, Admin block and Schools building. From these buildings the different school can be accessed. The more concentrative departments such as business economics, Social Sciences, agricultural sciences etc. are held along one diagonal.

The freer less rigid functions occur in more dynamic places, linked to the centre of the site and closer to the auxiliary pathways. This systematic approach is inclusive of vertical ascension points. From entryways one is always in clear sight of a vertical point of ascension into a controlled, more private area of use.

3.3.2. Architectural Resolution

IT Building - Page 36

The IT or LAN building is a semi public space. It is one half of a building set that announces the main axial entrance into the site along with a bridged link to the secondary north entrance. The IT building provides Computer based support and deals with problems involving computer literacy. People currently inexperienced with PC technology can learn how to use various computing programs here. The form of the building is simple with a courtyard system in place to allow for external repose during breaks. This building is meant to function more like an auxiliary element, intended to support the library systems and functions

The Arts Building - Page 37

A place to create

The arts and craft building is a building that caters for most forms of artistic expression. A pottery room is provided for artists and laymen learning to throw, a rustic kiln is aligned with a venting chute aligning the building form with its purpose. Craft studios and art classes all open out to a courtyard allowing for cross discipline dialogues and fellowships.

The African craftsman seldom works alone, it is important to realize that the creative act is as often a social activity as it is a private one. For visitors to the building a simple well lit gallery is provided along with a formalized craft shop where visitors can make purchases and arrange meetings with instructors and/or creative artists

Sculpture Park

The sculpture park is a park dedicated to one of the most inherently African art forms: wood crafting. It is a place where farmers and farm hands are encouraged to donate wood to a pile. This wood pile is then examined by the artists who are welcome to use it however they like. Use of tools and equipment in the neighboring metallurgy workshop is to be encouraged. As suppliers of art into the sculpture garden the resident artists donate back to community with public submissions for all to enjoy.

Performing Arts Building – Page 38

The Performing arts building is a facilitator of movement and musical activity, it is outfitted with a gymnasium and infirmary to promote physical wellness and care. The dance and drama are to follow simple themes. Space for learning is nucleated around space for performing and interacting. People arrive coming to learn and as such provisional space for the general public is provided. Here the community and visitors to the town can come together and learn about South African forms of dance. These dances do not simply stop at practices from people of Bantu speaking cultures; it extends to all the demographics of Kokstad encompassing the Griqua, Afrikaner and Indian traditional dances as well. Performance are housed African stories are shared and performed. The performing arts building is linked closely to an open exhibition square to give performers a platform to express ideas.

Library Building - Page 39

Split into two levels the library building is the public face of the complex and works in tandem with the It building. The building is outfitted with shelves and reading areas with the storage happening towards the core of the built form and space for reading, ambulation and study all happen on the outskirts of the interior spaces. Much like the all the other buildings in the complex the forms instruct the visitor on how to negotiate the building. One arrives in a large foyer like area with information and human interaction instantly at your disposal at the control desk. From here on is then in easy sight of the only stairway leading up to the top.

The library is also split along its entry axis with a fictional library to the left and a reference library to the right. Despite the library being a facility primarily intended for students on site, the public can and should be allowed to use the building as well. To this end the more public activities are focused on the ground floor. Up a level one enters a space where study space is provided and more intensive research material is available. The views from the library are clean and mostly uninterrupted. The northern portion of the lower floors is slanted and densely walled up to reduce noise from the wall. All have easy access to the interior courtyard for a more natural reading experience and the built form itself is surrounded by water to enhance visual comfort

Library - Reading Room

The library reading rooms are a source of comfort, semi cave like and constructed of earth and plaster. Indirect light becomes floods in to the reading nooks allowing for comfortable well lit reading with minimal use of electrical lighting. Books are kept far from windows to preserve them. the heavy thermal mass of the masonry composite wall keep the space cool on hot days while cream screed plaster flooring provides a smooth clean reflection of warm lighting.

Culinary building – Page 40

The Culinary art building is a place for dinning. Whether it is a well experienced professional chef curious for new ideas or a young family looking for something interesting to eat the culinary building aims to suit all tastes. The trainees have a kitchen dedicated to baking minor pastry, cooking soups and preparing roasts. The head chefs feature at varying times of the day. Dishes both indigenous to Kokstad and prevalent in other parts of southern Africa are experimented with. The meals are prepared from vegetables grown on the roof garden. Whatever is successfully grown will be broken into a recipe that is made available to those interested in learning both how the food is prepared and how the ingredients are grown.

Dorms

The live in chefs are afforded a place to stay on site above their kitchens; visiting chefs can also gain a room upon request. The dorm is modeled around the settlement spatial dynamic with a central gathering space that connects to all other living spaces directly. This is done in order for there to be a social impetus on the residents. Kitchens are open to a particular chef per day allowing for everyone to get a chance to taste something new and perhaps stimulate a faster innovative process for original recipes.

Education and agriculture

It has long been established that farming communities are only successful if they are careful not to abuse the soil and natural environment. Careful monitoring of soil conditions water toxicity levels and crop yield allow them to make predictions of the coming year. This has long been a skill accessed directly through a good education.

The R&D agricultural building attempts to bring the information vital to commercial and subsistence farming back to the average person. Research on the river and soil properties of the Kokstad area is done here while an allowance is kept for projects attempting to nurse better seedlings, produce safer pesticides and generate purified water from rain and the river.

The form and function

The R&D building is u shaped directing itself to the west the most prominent space is the entry foyer off the herb garden path. The meandering path is reminiscent of the traditional arrival to a homestead in most Nguni settlements. The path leads first to water then through brush and vegetation out towards the entry ziggurat.

The u shaped building is shaped as such to embrace and emphasize the focus on natural medicines and water purification. A hierarchical play of shapes gives one a clear indication of focus points within the building. Water pumped up from the river is stored in vats for study and easy reticulation.

Architectural Design Drawings

(As presented to a panel of Peer Review)




 INTEGRATION CONNECT MERC



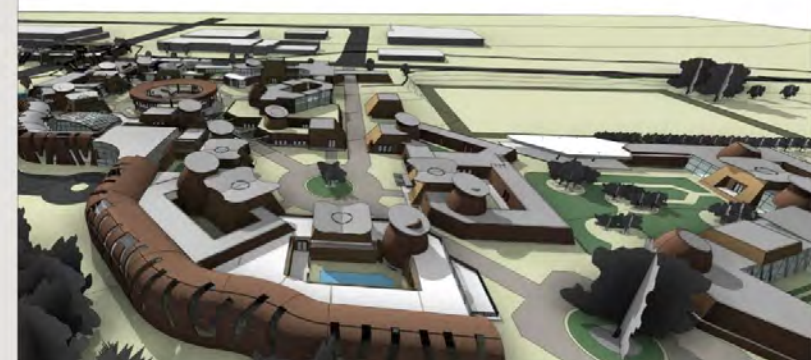
FULL NORTH ELEVATION 1:100



SITE OVERVIEW



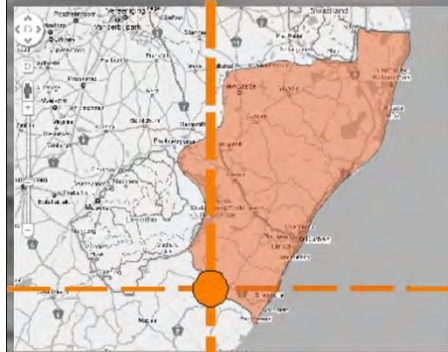
SITE PLAN 1:1000



SECTIONAL ELEVATION 1:100

RGE COELESCE COMBINE LINK UNIFY

CHISOMO K PHIRI



KOKSTAD



Theoretical Outlook

It is permissible to assume that education is relevant on the cultural make up of the society. The aim then of this project is to look at the issue of traditional values in the modern teaching environment focusing on how to manifest this dialogue through architectural means. To achieve this a series of Critical theories shall be employed. These theories are namely:

* Critical Regionalism (the Genre De Vie)

This is a physical determinant outlook that looks at the culture, ethos, world view and notional character of a people. A critical regionalist aims to define the above facets, using them to understand what localized markers indicate is right for the environment.

The reverse is also true. Such Markers make very apparent what is lacking, and what should not be introduced.

* Social Spatial Anthropometry

Like Critical regionalism Social Spatial Anthropometry focuses on people, culture and the spatial quality they compose for themselves. The general idea is that a people relate spaces to social systems. Subtle nuances within the spatial hierarchy have wide ranging effects on culture and lifestyle. To re-integrate people into the building process we must analyze the spaces they create and deem important to their way of life. Doing so yields highly effective planning systems that enhance comfort and functionality.

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The Site is Located near the entrance into the town of Kokstad, as you'd arrive off the N2. The entry road crosses over the Umzimvubu river which establishes the sites south eastern border.

Its boundaries are defined by a disused railway track (NorthWest), Main entry into Town and semi functional public Park (SouthWest). The Umzimvubu River across which A Newly constructed Industrial development (South East) and Farm shop (due South).

A soft protection of green trees lie to the North, North East and South East

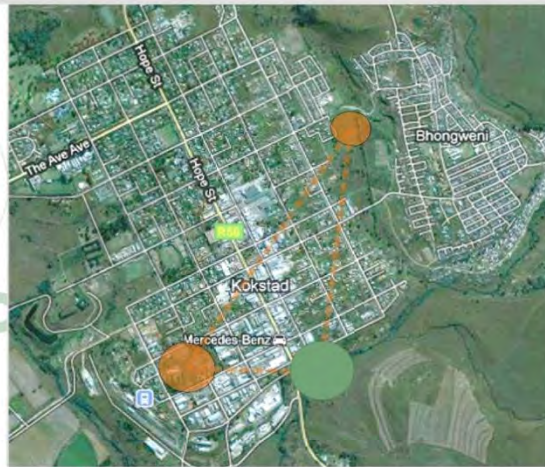
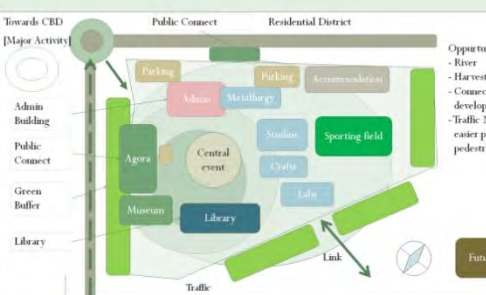
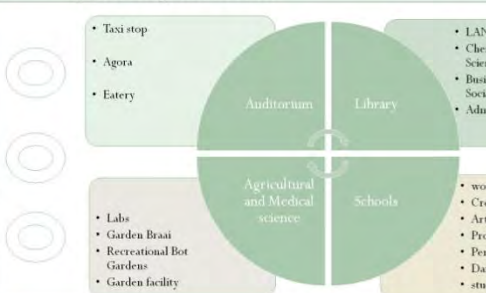
Site A is ideally placed for free growth. It is not very historically significant but the aesthetic factors of its current surroundings are noteworthy. The most obvious problems arise from the relatively high level of noise and traffic congestion on the western edge of the site.

The Site: Environmental



Climate: Kokstad receives about 620mm of rain a year. Mostly in mid Summers. Rainfall average ranges from 1mm in June to 100mm in January. It is common for more to fall in winter.	Temperature: Average temperature in Kokstad ranges from 17°C in June to 25°C in January. The lowest temperatures can drop to 1°C.
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Spatial Diagram: Revised



The Site: Urban Intentions



The Site: Existential Markers



Noise: Central Hub of Kokstad is a stone throw away. This means the bustle and bustle of the town is hard to miss.	Traffic: Intersection located by heavy traffic. This congestion is caused by also meeting traffic and the difficulty of negotiating rail lines are longer to use.	Social: Current interaction with the site is limited. The small park nearby is used 4 days by some of the labourers in the area.
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THE NOTIONAL CLIENT

THE CLIENT FOR THIS PROJECT IS THE DEPARTMENT OF HIGHER EDUCATION & TRAINING IN UNISON WITH THE DEPARTMENT OF WORKS. THESE DEPARTMENTS SPECIALIZE IN OVERSEEING THE DRAFTING AND CONSTRUCTION OF GOVERNMENT BASED EDUCATIONAL INSTITUTIONS. GOVERNMENT HAS EARMARKED THE SISONKE DISTRICT AS A POTENTIAL SITE FOR GROWTH IN SEVERAL FIELDS OF RESOURCE DEVELOPMENT AS A RESULT INVESTING IN EDUCATIONAL INSTITUTIONS WITHIN KOKSTAD HAS BECOME A PRIORITY.

IT IS THE GOAL OF THE DEPARTMENT OF HIGHER EDUCATION & TRAINING TO CREATE AN ENABLING FACILITY GEARED TOWARDS THE DELIVERY OF PRACTICAL SKILLS TRAINING.

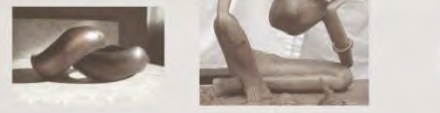
ON THE MUNICIPALITIES' PROSPECTIVE DEVELOPMENT PLAN FOR KOKSTAD THERE IS AN ALLOWANCE FOR AN EDUCATIONAL INSTITUTE. THIS HAS BEEN EARMARKED AS A BRIDGING ELEMENT CONNECTING THE ESTABLISHED KOKSTAD CBD TO A NEW PROPOSED SUBURBAN DISTRICT. GOVERNMENT HAS ALSO BEGUN AN INITIATIVE ENCOURAGING THE USE OF PASSIVE ENERGY SAVING SYSTEMS.

THE CLIENT WOULD LIKE TO GET THE PUBLIC INTERESTED IN SUSTAINABLE PRACTICE. THE NEW DEVELOPMENT SCHEME COULD EASILY WORK AS A VEHICLE TO EDUCATE THE LOCAL COMMUNITY IN SELF-HELP GREEN BUILDING. AS MENTIONED BEFORE THE PUBLIC ARE SKEPTICAL ABOUT THE NEED FOR SUSTAINABLE PRACTICE. THE BUILDING CAN HELP DEVELOP KNOWLEDGE ABOUT SUSTAINABILITY MAKING.

1.3.1 THE CLIENT'S REQUIREMENTS

GOVERNMENT HAVE BEGUN AN INITIATIVE WITH THE SISONKE DISTRICT MUNICIPALITY TO TRY PRODUCE FEASIBLE WAYS TO CONSTRUCT CLEAN, EFFICIENT AND SUSTAINABLE LEARNING ENVIRONMENTS. THE BUILDING MUST:

- ESTABLISH FACILITIES THAT DEAL WITH TECHNICAL, ECONOMIC AND CULTURAL DEVELOPMENT
- AUGMENT THE AESTHETIC OF THE GATEWAY INTO KOKSTAD
- PROVIDE AN AGRICULTURAL COMPONENT TO FURTHER ENHANCE FARMING COMMUNITY SKILLS
- DEAL WITH TRAFFIC BOTTLENECK CLOSE TO THE SITE. MAKE SAFER FOR PEDESTRIAN ENTRY
- PROVIDE A STAGE FOR COMMUNITY CULTURAL EDUCATION AND ENTERTAINMENT
- LINK A SPORTING COMPONENT THAT CATER FOR MAINSTREAM SPORTS WITHIN THE AREA
- CAREFULLY CONSIDER EXPANSION AND PHASE DEVELOPMENT TO BETTER SUIT CURATIVE DEVELOPMENT BUDGETS.
- IN ADDITION TO THIS THE CLIENT AIMS TO DEVELOP QUALITY "AFRICAN" ARCHITECTURE RESPONDING TO THE GLOBAL AND LOCAL PROBLEMS OF:
 - WATER RETENTION
 - ENERGY CONSERVATION
 - AND SOCIAL DEVELOPMENT



PRECEDENT

Key Precedents - Tectonic

The Savil Garden Pavilion, Musheim Multi Hall and Weald Downland open air Museum all have the Gridshell constructional system as a common trait in their buildings.

Originally attempted by Frei Otto the Grid shell design has evolved further and further allowing for a pliable organic shape via a meticulously placed out timber truss.

The technology of the Savil Gardens by Glen Howell Architects merges vault architecture with mesh grids.

The result is a highly advanced architecture that boasts rustic and natural join in structure with contemporary fittings and finishes in glass, steel

The juxtaposition of varying Materials is a beautiful feat of engineering



Key Precedent - Green School, Bali

Tectonic:
Architects: John and Cynthia Hardy, PT Rambu
Client: Green School and Merrangi Foundation

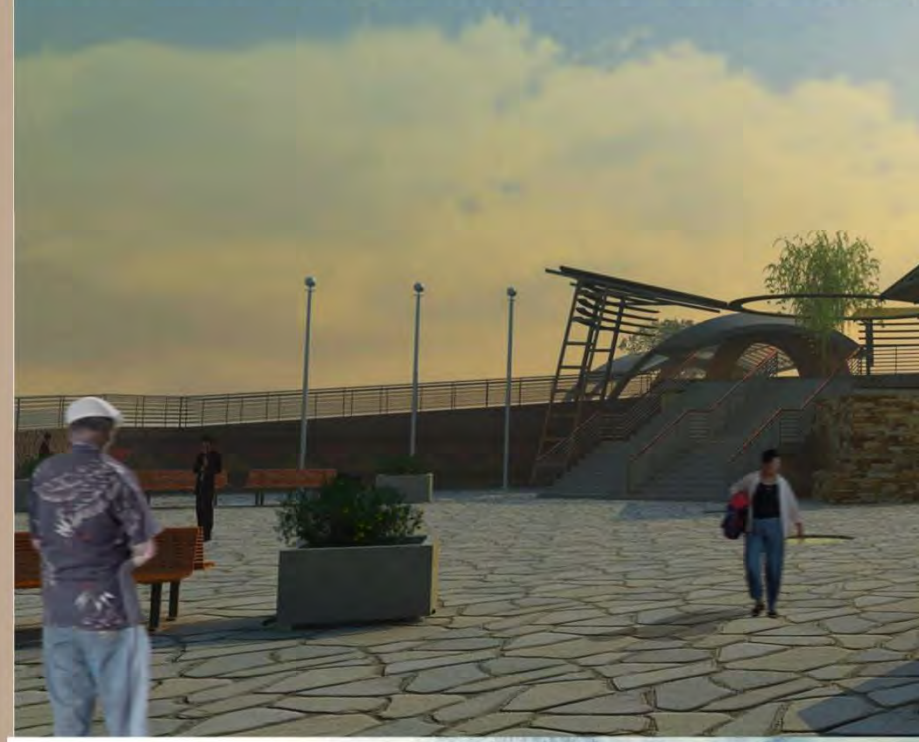
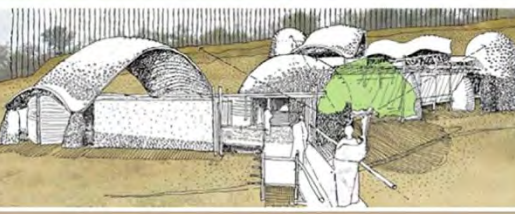
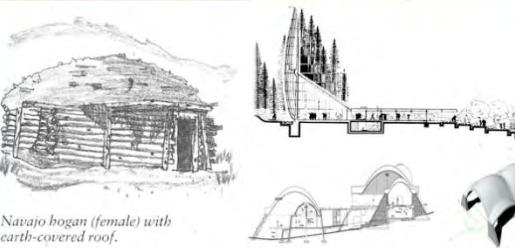
- The Green School in Bali is what architects currently describe as Green architecture.
- The school is focused around concretizing the youth about nature and the importance of the environment
- To this end the Architecture has attempted to carefully utilize natural bamboo, thatch and rammed earth.
- The design responds well to the harsh tropical climate of Bali
- Bali experiences heavy rainfall and high humidity with little difference in season as far as temperature is concerned (averaging between 26-30 degrees Celsius).
- The building is light weight with roofs that over extend to maximize shadows.
- Wind passes through the building easily carrying away heat and humidity.
- The roof spirals in such a way that hot air escapes upwards on cool days, light permeates easily into the interior and rain is kept out.



Key Precedents - Ahmed Baba Institute

The history of education in Africa is complex...

- The Early Egyptians housed great libraries and academies.
- Egypt was influenced by the empires of Kush, Great Zimbabwe, the Mali and the Ghanaian Empires.
- All these shows of advanced civilizations that relied upon education and the transfer of skills and knowledge.
- In Modern Times We still find great halls of learning in Alexandria, Egypt, and Timbuktu, Mali
- The development of education in Africa is important.
- To avoid becoming a Carbon copy of world progress and development African education must find new ways to say the same thing.
- The right way forward would look something like the Ahmed Baba Institute of Higher Islamic Studies.
- Such a building provides cutting edge facilities while maintaining strong cultural ties to Islam and the lifestyles the people of Mali employ.
- There is a need to provide healthy, environmentally appropriate environments where in education of the world and education of ones place in it become synonymous with your cultural heritage.



THE INTEGRATION OF MODERN AND TRADITIONAL ARCHITECTURE



CONCEPTUAL DEVELOPMENT

THE ISSUE

THE ISSUE OF LEGIBILITY IN THE BUILT ENVIRONMENT HAS BEEN DISCUSSED AT LENGTH BY THEORISTS SUCH AS LYNCH AND ALEXANDER. THESE GREAT MINDS OF CONTEMPORARY ARCHITECTURE HAVE ISOLATED SOME OF THE PRINCIPLES OF LEGIBILITY, NAMELY A CAREFUL HARMONY OF EDGES, PATH-MAKING SYSTEMS, NODES AND HIERARCHICAL CUES. IT'S BEEN WELL ESTABLISHED BY THE LITERATURE AND CASE REVIEWS WITHIN THIS DISSERTATION THAT MARKERS OF CULTURAL ORIGIN ARE CONSISTENTLY EVOLVING. AS A RESULT OF THIS CONTANT EVOLUTION WE FIND THE MEANINGS AND CULTURAL CONNECTIONS BECOME MUDDLED.

IN SOUTHERN AFRICA THESE MEANINGFUL SYMBOLS BECOME BLURRED BY THE COLOURFUL PAST THAT MAKES SOUTH AFRICA WHAT IT IS. THE CULTURAL IDENTITY OF THE PEOPLE OF AFRICA HAS EVOLVED BUT THE BUILT ENVIRONMENT HAS YET TO CATCH UP. AT THE MOMENT A LOT OF THE LEGIBILITY WITHIN THE CITY IS A CLASH OF IDEAS STEMMING FROM THE APARTHEID AND COLONIAL ERA.

HOW THEN DOES ONE ESTABLISH A CONTEMPORARY AFRICAN ARCHITECTURE? HOW CAN ONE ENSURE THIS ARCHITECTURE PROVES LEGIBLE AND CLEAR WHILE MAINTAINING AN IDENTITY UNIQUE TO THE AFRICAN CONTINENT? IT IS HERE THAT THE ISSUES OF SEMIOTICS, CULTURAL MEANING AND ICONOGRAPHY MUST MARRY WITH TECTONICS, PHYSICAL DETERMINISM AND SOCIAL SPATIAL ANTHROPOMETRICS.



SPATIAL ANTHROPOMETRY AND TECTONIC RELATIONSHIPS

WE FIND THAT THE TRADITIONAL CULTURES HAD A VERY SIMPLE APPROACH TO THEIR SETTLEMENTS. A CENTRAL PLACE FOR TREASURES AND/OR RESOURCES. THIS SPACE IS LINKED, EITHER SYMBOLICALLY OR PHYSICALLY TO THE PLACE WHERE THE ANCESTORS OR PROTECTIVE SPIRITS OF THE TRIBE LIE. IF THEIR IS HEAD, THE HEAD OF THE HOUSEHOLD IS CONNECTED DIRECTLY TO THE CENTRAL SPACE. HIS PLACE WHEN ADDRESSING OTHERS IS AT THIS SPACES CENTRE.

AS THE HOMESTEAD DEVELOPS, OR IN THE EVENT OF A SECOND FAMILY LEADER WHO DEFERS TO THE HEAD OF THE FAMILY, ANOTHER CENTRAL SPACE MAY BE ESTABLISHED. FROM HERE THE SECOND CAN CONDUCT DUTIES. THESE SPACES ARE ALWAYS LINKED. THE APPROACH OF VISITORS NEW TO THE SETTLEMENT IS ALWAYS FROM THE FORMAL APPROACH. THIS APPROACH BY PASSES THE POINT OF CONTROL, THE HEADS HOUSE.

THIS IS THE PROPER WAY TO ANNOUNCE YOURSELF WITHOUT HAVING TO SAY A WORD. IT IS A TRADITIONAL PRACTICE THAT HAS TRANSCENDED TIME. UPON REFLECTION THE AXIAL DIRECT OF THE SKILLS DEVELOPMENT WAS ARRANGED AND REARRANGED TO REFLECT THIS.

SPATIAL HIERARCHY IS THIS ARRANGED AS A SETTLEMENT WITH THE FORMAL MAIN APPROACH SET ON AXIS FROM THE PLAZA INTO THE BUILDING COMPLEX. THE LAND ADMIN BUILDINGS ACT AS CORRIDORS AND THE ARRIVAL IS COMPLETED BY BEING SPILLED OUT INTO THE GREAT SPACE (1) THE SPACE IS ALSO ACCESSED FROM 2 OTHER POINTS OF AXIS. THIS MAKES IT THE MOST VITAL AND ACTIVE SPACE.

IN ACCORDANCE WITH PEDESTRIAN FLOW PROVISION OF SERVICES AND EXHIBITION SPACE TAKE PRECEDENCE OVER CASUAL FUNCTIONALITY. THE ARCHITECTURE ITSELF EXPRESSES AND ENCOURAGES THE VIBRANT ACTIVITY IT NOW FRAMES.

THE JOIN OF OLD AND NEW TECHNOLOGIES ARE EXPLORED ON THE CAMPUS GROUNDS AS WELL AS THE MARRIAGE OF USAGE THINGS ARE BROUGHT TOGETHER THAT OTHERWISE WOULD NOT BE COUPLED ALL BECAUSE THEY SHARE AN ELEMENT OR BASE TRAIT. THE OVENS AND THE FORGE FOR EXAMPLE ARE TWO FIRE BASED ELEMENTS. THUS THEY ARE HOUSED TOGETHER. IT AND THE LIBRARY ASSUME A SIMILAR CONNECTION. THE BRIDGE LINKING THESE TO BUILT FORMS IS THE CLOSEST MARKER OF THIS UNION, THE GLASS USE IS UNIQUE AND DEFINITIVE OF TH AREA THESE BUILDINGS DOMINATE.

EXPRESSIONS OF SINUS ENERGY ARE LINKED TO THE "SHAKE WALL" WHICH WRAPS ALONG THE SOUTH EAST WALL. ALONG THIS WALL THE MULTIPURPOSE HALL, PRACTICE ROOMS, CLASS ROOMS AND SEMINARIES ARE EACH EQUALLY SHADED BY THIS HUGE WALL. THE WALL IS A MEANING. IT GENERATES THE IDENTITY OF THE PRECINCT FROM THE ROAD AND SPEAKS OF THE NATURE OF THE FLOW OF PEOPLE BRIDGING THE NEW DEVELOPMENT TO THE NEW.

LASTLY THE ARTS AND SCIENCES, WHO AT A GLANCE SHARE LITTLE IN COMMON EACH SHARE A GREEN HOUSE AGRICULTURAL GARDEN AND A MINOR SQUARE FOR EXHIBITIONS AND ARTISTIC DISPLAY. THE ENERGY OF COOL SCIENCE AND PASSIONATE ART IS CONFLICTING BUT IN THE SAME BREATH IT HOLDS AN EQUAL AMOUNT OF MYSTERY AND CREATIVITY. THE ENERGY OF THIS CONNECTION ACTIVATES THE MIND OF THOSE THAT FILTER ABOUT THE BRIDGE CROSSING OVER TO THE NEW DEVELOPMENT.

ALL CONNECTIONS SPEAK OF A TECTONIC UNION OF SPACES THAT ARE DRAWN OFF FROM THE MARKERS OF THE SITE. THIS IS AN IMPORTANT DISTINCTION TO MAKE FROM ALL OTHER ATTEMPTS AT AFRICAN ARCHITECTURE BECAUSE IN THIS CASE IT IS THE FAMILY OF LINKS THAT MAKE THE BUILDING LEDGIBLE AS MUCH AS THE ARCHITECTURAL SIGNATURE AND SPATIAL DIVISIONS.

SEMOTICS AND CREATING MEANING

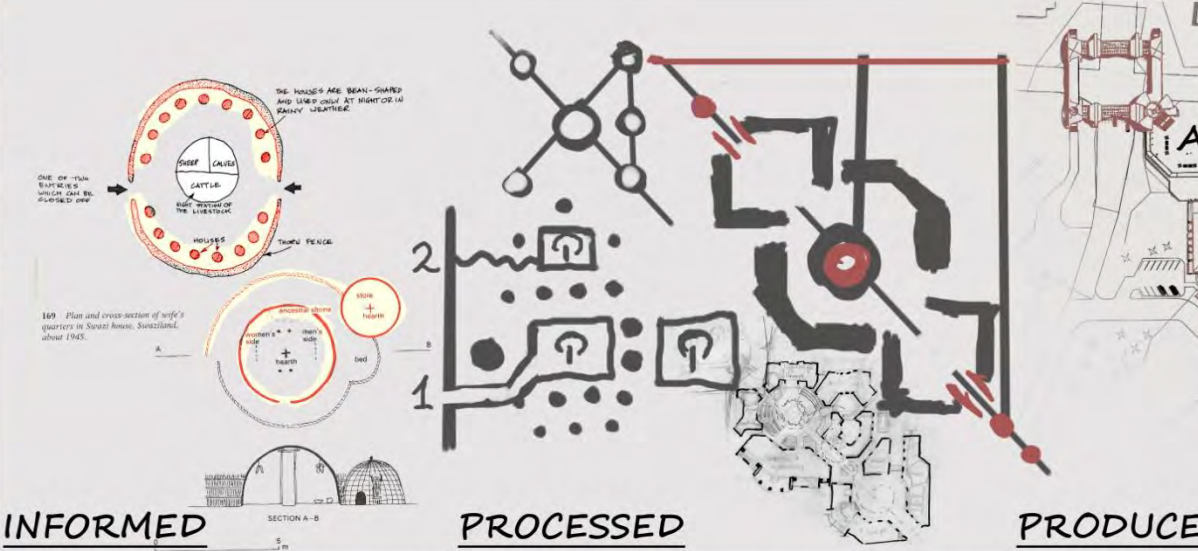
SEMOTICS IS A CLASH OF MEANING AND INTERPRETATION. THE SKILLS DEVELOPMENT CENTRE PROPOSED IS CONCEIVED OF THE PURE IDES OF AN ARCHITECTURAL DISTRICT CONTRIVED COMPLETELY OF SUBLIMINAL MEANINGS. THE ARCHITECTURAL MATERIAL, THOUGH ROBUSTLY SUSTAINABLE, IS IN ITS OWN WAY A MESSEGE TO THE PEOPLE INHABITING THE SITE. STONE WALLS BUILT FROM THEIR QUARRY, RAMMED EARTH EXCAVATED FROM THEIR SOIL AND TIMBER SLATS EXTRUDED FROM THEIR TREES. THE BUILDINGS ARE ALL AN ACHIEVABLE AND MEMORABLE EXAMPLE OF THE BEAUTIFUL RESOURCES OF THE AFRICAN CONTINENT.

THE ENTIRE SITE IS SPLIT INTO TWO, A HEAVY EARTH BOUND LOWER FLOOR AND A LIGHTFLOODED OPEN AND UNRESTRAINED UPPER FLOOR. THE BUILDINGS SIT PROUDLY IN THEIR SURROUNDINGS AND ADOPT FORMS THAT HAVE A DIALOGUE WITH THE PEOPLE OF KOKSTAD.

AMONG THE KHOSA THE ZIGZAG IS A SIGN OF LIFE, MANY CULTURES ASSOCIATE IT WITH LIFE GIVING WATER, ACTIVITY AND/OR HEALTH. FOR THIS REASON THERE IS INTENTION TO DECORATE THE WALL FACADES LIBERALLY WITH THIS DECAL. ANOTHER MEANINGFUL MARKER IS THE SIMPLE DOTTED LINE. IT IS A HIGHLIGHT, OFTEN WORN ON A BEAUTIFUL WOMANS FACE DURING CERTAIN IMPORTANT EVENTS. THE GRANARY THUS BECOMES AN ABSTRACT REPRESENTATION OF AFRICAN PRIDE AND BEAUTYWHILE ON THE OTHER HAND THERE IS THE HEAVY PYRAMID LIKE FORM WITHOUT AN ABEX. THE APEX WAS A SYMBOL OF TRANSCENDENCY, WHAT THEN OF A PYRAMID CAPPED WITH A BUTTERFLY ROOF WINGS? THE MERGE OF TWO COMMONLY UNDERSTOOD ABSTRACTS CREATES A NEW ABSTRACT SYMBOL. IT ENFORCES LEGIBILITY AND HAS A GROUNDING EFFECT TO IT THAT ALMOST COUNTERACTS THE GRANARY LIKE BAGHIR.

WHERE EVER THESE ELEMENTS ARE A PROMINENT JOIN OR ENTRY OCCURS. A PERSON ARRIVING AT THE SITE IS IMMEDIATELY MADE AWARE OF THE IMPORT OF THE FORMS. AND AT THE CENTRE OF IT ALL THERE IS BUT THE SIMPLEST AND THUS THE MOST POWERFUL SYMBOL OF ALL. THE CIRCLE IS AN ALL INCLUSIVE ACKNOWLEDGEMENT. IN THIS PROJECT THE CIRCLE BECOMES MORE THAN JUST A CIRCLE. IT IS A FOCUS LENS ON THE PEOPLE AND HOW THEY WISH TO CELEBRATE THEIR TALENTS AND GIFTS.

OF COURSE OTHER SHAPES OCCUR ALONG THE SITE. THE DIAMOND AND ORB FOR EXAMPLE BOTH ARE PURE AND PRESTINE. THE REPETITION OF THE NUMBER THREE IN WINDOW ALLOTMENT AND FORM PLACEMENT IS ALSO CULTURALLY STRONG LINKING BOTH CHRISTIAN FAITH, PREVALENT IN KOKSTAD, TO TRADITIONAL RESPECT FOR SUCH A SIGNIFICANT NUMBER.

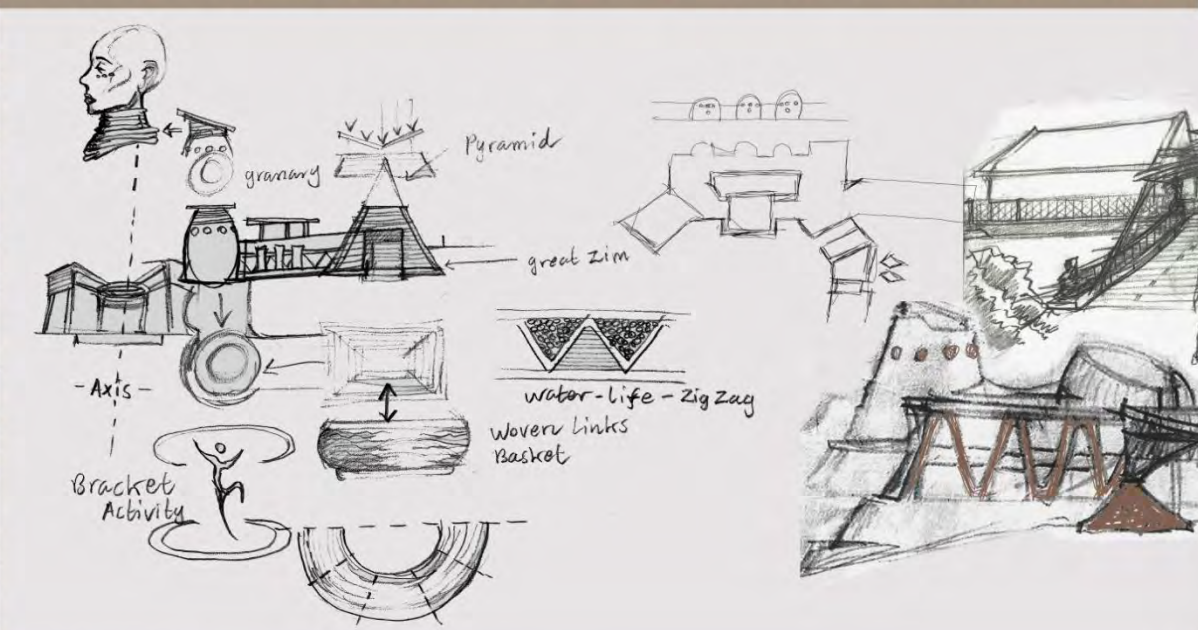


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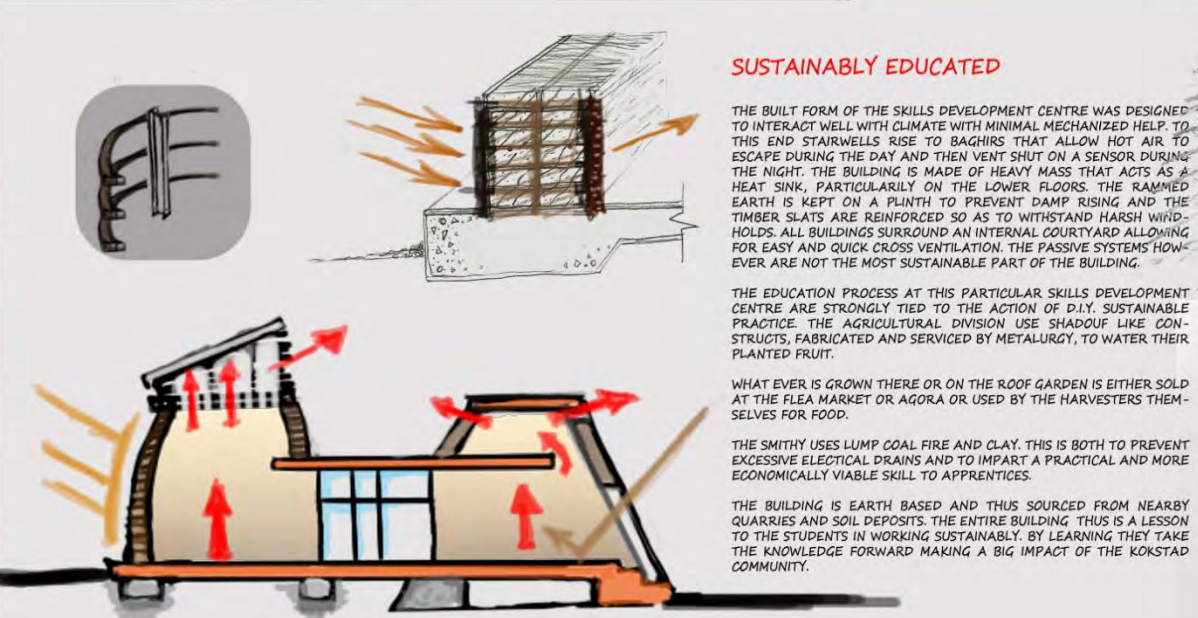
PROCESSED

PRODUCED

SPATIAL ANTHROPOMETRY AND TECTONIC RELATIONSHIPS



SEMOTICS



SUSTAINABLE MODIFIERS

SUSTAINABLY EDUCATED

THE BUILT FORM OF THE SKILLS DEVELOPMENT CENTRE WAS DESIGNED TO INTERACT WELL WITH CLIMATE WITH MINIMAL MECHANIZED HELP. TO THIS END STAIRWELLS RISE TO BAGHIRS THAT ALLOW HOT AIR TO ESCAPE DURING THE DAY AND THEN VENT SHUT ON A SENSOR DURING THE NIGHT. THE BUILDING IS MADE OF HEAVY MASS THAT ACTS AS A HEAT SINK, PARTICULARLY ON THE LOWER FLOORS. THE RAMMED EARTH IS KEPT ON A PLINTH TO PREVENT DAMP RISING AND THE TIMBER SLATS ARE REINFORCED SO AS TO WITHSTAND HARSH WINDHOLDS. ALL BUILDINGS SURROUND AN INTERNAL COURTYARD ALLOWING FOR EASY AND QUICK CROSS VENTILATION. THE PASSIVE SYSTEMS HOWEVER ARE NOT THE MOST SUSTAINABLE PART OF THE BUILDING.

THE EDUCATION PROCESS AT THIS PARTICULAR SKILLS DEVELOPMENT CENTRE ARE STRONGLY TIED TO THE ACTION OF D.I.Y. SUSTAINABLE PRACTICE. THE AGRICULTURAL DIVISION USE SHADOUF LIKE CONSTRUCTS, FABRICATED AND SERVICED BY METALURGY, TO WATER THEIR PLANTED FRUIT.

WHAT EVER IS GROWN THERE OR ON THE ROOF GARDEN IS EITHER SOLD AT THE FLEA MARKET OR AGORA OR USED BY THE HARVESTERS THEMSELVES FOR FOOD.

THE SMITHY USES LUMP COAL FIRE AND CLAY. THIS IS BOTH TO PREVENT EXCESSIVE ELECTRICAL DRAINS AND TO IMPART A PRACTICAL AND MORE ECONOMICALLY VIABLE SKILL TO APPRENTICES.

THE BUILDING IS EARTH BASED AND THUS SOURCED FROM NEARBY QUARRIES AND SOIL DEPOSITS. THE ENTIRE BUILDING, THUS IS A LESSON TO THE STUDENTS IN WORKING SUSTAINABLY. BY LEARNING THEY TAKE THE KNOWLEDGE FORWARD MAKING A BIG IMPACT OF THE KOKSTAD COMMUNITY.



INTERIOR PERSPECTIVE



LIBRARY - READING ROOM

THE LIBRARY READING ROOMS ARE A SOURCE OF COMFORT, SEMI CAVE LIKE AND CONSTRUCTED OF EARTH AND PLASTER. INDIRECT LIGHT BECOMES FLOODS IN TO THE READING NOOKS ALLOWING FOR COMFORTABLE WELL LIT READING WITH MINIMAL USE OF ELECTRICAL LIGHTING. BOOKS ARE KEPT FAR FROM WINDOWS TO PRESERVE THEM. THE HEAVY THERMAL MASS OF THE MASONRY COMPOSITE WALL KEEP THE SPACE COOL ON HOT DAYS WHILE CREAM SCREED PLASTER FLOORING PROVIDES A SMOOTH CLEAN REFLECTION OF WARM LIGHTING.



SITE KEY



THE **INTEGRATION** OF MODERN AND TRADITIONAL ARCHITECTURE. ::
TOWARDS A SKILLS DEVELOPMENT CENTRE IN KOKSTAD

CHISOMO K PHIRI
206505387



NORTH ELEVATION 1:200



SOUTH ELEVATION 1:200



EAST ELEVATION 1:200



3D PERSPECTIVE

INFORMATION TECH

A SEMI PUBLIC BUILDING THE IT BUILDING IS ON HALF OF A BUILDING SET THAT ANNOUNCES THE MAIN AXIAL ENTRANCE AND THE SITE ALONG WITH A BRIDGED LINK TO THE SECONDARY NORTH ENTRANCE.

THE IT BUILDING DEALS WITH COMPUTER LITERACY PROGRAMS, TEACHING CITIZENS CURRENTLY INEXPERIENCED WITH THE AVERAGE PC. THE FORM OF THE BUILDING IS SIMPLE WITH A COURTYARD SYSTEM IN PLACE TO ALLOW FOR EXTERNAL REPOSE DURING BREAKS.



GROUND FLOOR PLAN 1:250



FIRST FLOOR PLAN 1:250



INTERIOR PERSPECTIVE



NORTH STRIP ELEVATION 1:200

THE **INTEGRATION** OF MODERN AND TRADITIONAL ARCHITECTURE. ::
TOWARDS A SKILLS DEVELOPMENT CENTRE IN KOKSTAD

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ARTS AND CRAFTS



WEST ELEVATION 1:200



3D PERSPECTIVE



GROUND FLOOR 1:250



EAST ELEVATION 1:200

A PLACE TO CREATE

THE ARTS AND CRAFTS BUILDING IS A BUILDING THAT CATERES FOR MOST FORMS OF ARTISTIC EXPRESSION. A POTTERY ROOM IS PROVIDED FOR ARTISTS AND LAYMEN LEARNING TO THROW, A RUSTIC KILN IS ALIGNED WITH A VENTING CHUTE ALIGNING THE BUILDING FORM WITH ITS PURPOSE. CRAFT STUDIOS AND ART CLASSES ALL OPEN OUT TO A COURTYARD ALLOWING FOR CROSS DISCIPLINE DIALOGUES AND FELLOWSHIPS.

THE AFRICAN CRAFTSMAN SELDOM WORKS ALONE, IT IS IMPORTANT TO REALIZE THAT THE CREATIVE ACT IS AS OFTEN A SOCIAL ACTIVITY AS IT IS A PRIVATE ONE. FOR VISITORS TO THE BUILDING A SIMPLE WELL LIT GALLERY IS PROVIDED ALONG WITH A FORMALIZED CRAFT SHOP WHERE VISITORS CAN MAKE PURCHASES AND ARRANGE MEETINGS WITH INSTRUCTORS AND/OR CREATIVE ARTISTS



SCULPTURE PARK

THE SCULPTURE PARK IS A PARK DEDICATED TO ONE OF THE MOST INHERENTLY AFRICAN ARTFORMS: WOOD CRAFTING. IT IS A PLACE WHERE FARMERS AND FARM HANDS ARE ENCOURAGED TO DONATE WOOD TO A PILE. THIS WOOD PILE IS THEN EXAMINED BY THE ARTISTS WHO ARE WELCOME TO USE IT HOWEVER THEY LIKE.

USE OF THE TOOLS IN THE NEIGHBOURING METALLURGY WORKSHOPS IS ENCOURAGED. AS A SCULPTURE GARDEN THE RESIDENT ARTISTS DONATE BACK TO COMMUNITY WITH PUBLIC SUBMISSIONS FOR ALL TO ENJOY.



THE **INTEGRATION** OF MODERN AND TRADITIONAL ARCHITECTURE. ::
TOWARDS A SKILLS DEVELOPMENT CENTRE IN KOKSTAD

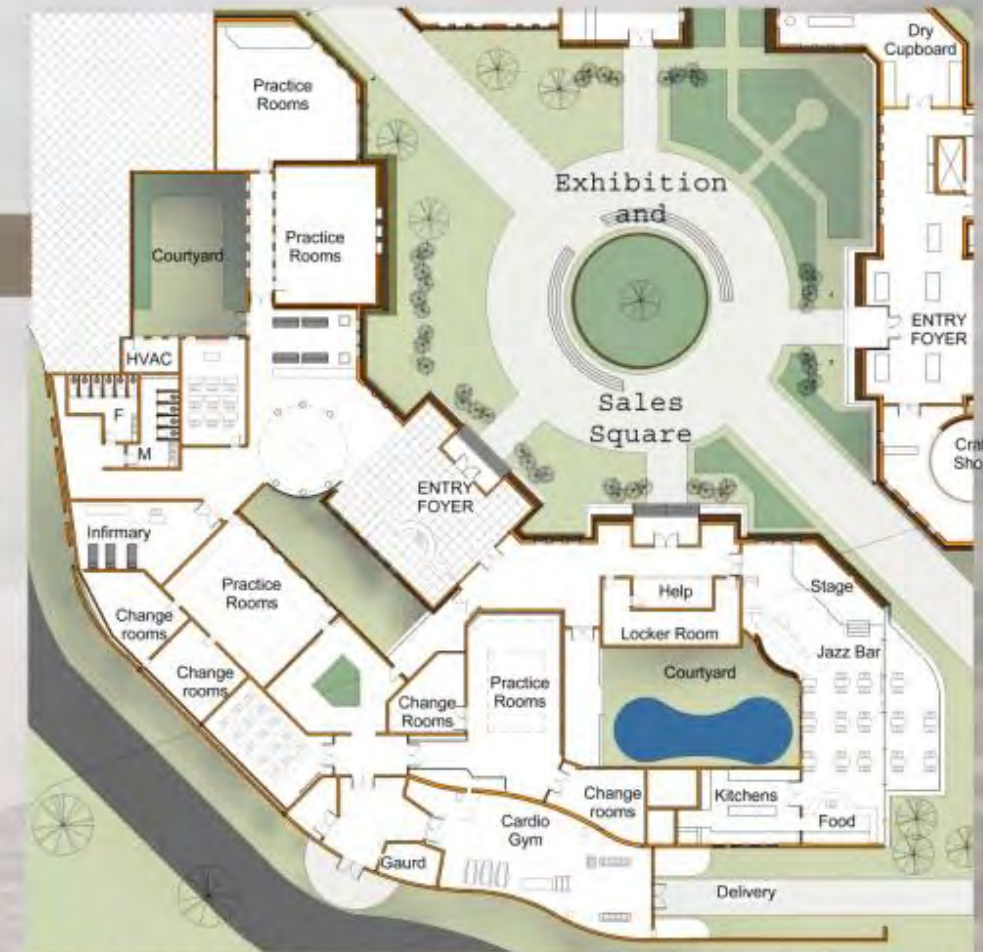
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206505387



NORTH EAST ELEVATION 1:200



3D PERSPECTIVE



GROUND FLOOR PLAN 1:250



SOUTH WEST ELEVATION "SNAKEWALL" 1:200

PERFORMING ARTS

PERFORMING ARTS BUILDING TO FACILITATE MOVEMENT TO MUSIC, IT IS KITTED OUT WITH A GYMNASIUM AND AN INFIRMARY TO PROMOTE PHYSICAL WELLNESS AND CARE. THE DANCES AND DRAMATIZATIONS ARE TO FOLLOW SIMPLE SEEMS. PEOPLE ARRIVE COMING TO LEARN AFRICAN DANCES

THEY ALSO COME TO LEARN AFRICAN STORIES. THE PERFORMING ARTS BUILDING IS LINKED CLOSELY TO AN OPEN EXHIBITION SQUARE TO GIVE PERFORMERS A PLATFORM TO EXPRESS IDEAS.



THE **INTEGRATION** OF MODERN AND TRADITIONAL ARCHITECTURE. ::
TOWARDS A SKILLS DEVELOPMENT CENTRE IN KOKSTAD

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NORTH WEST ELEVATION



SOUTH PERSPECTIVE - CG RENDERING



GROUND FLOOR



FIRST FLOOR

LIBRARY - BUILDING

SPLIT INTO TWO LEVELS THE LIBRARY BUILDING IS THE PUBLIC FACE OF THE COMPLEX AND WORKS IN TANDEM WITH THE IT BUILDING. THE BUILDING IS OUTFITTED WITH SHELVES AND READING AREAS WITH THE STORAGE HAPPENING TOWARDS THE CORE OF THE BUILT FORM AND SPACE FOR READING, AMBULATION AND STUDY ALL HAPPEN ON THE OUTSKIRTS OF THE INTERIOR SPACES. MUCH LIKE THE ALL THE OTHER BUILDINGS IN THE COMPLEX THE FORMS INSTRUCT THE VISITOR ON HOW TO NEGOTIATE THE BUILDING. ONE ARRIVES IN A LARGE FOYER LIKE AREA WITH INFORMATION AND HUMAN INTERACTION INSTANTLY AT YOUR DISPOSAL AT THE CONTROL DESK. FROM HERE ON IS THEN IN EASY SIGHT OF THE ONLY STAIRWAY LEADING UP TO THE TOP.

THE LIBRARY IS SPLIT ALONG ITS ENTRY AXIS WITH A FICTIONAL LIBRARY TO THE LEFT AND A REFERENCE LIBRARY TO THE RIGHT. DESPITE THE LIBRARY BEING A FACILITY PRIMARILY INTENDED FOR STUDENTS ON SITE, THE PUBLIC CAN AND SHOULD BE ALLOWED TO USE THE BUILDING AS WELL. TO THIS END THE MORE PUBLIC ACTIVITIES ARE FOCUSED ON THE GROUND FLOOR. UP A LEVEL ONE ENTERS A SPACE WHERE STUDY SPACE IS PROVIDED AND MORE INTENSIVE RESEARCH MATERIAL IS AVAILABLE. THE VIEWS FROM THE LIBRARY ARE CLEAN AND MOSTLY UNINTERRUPTED. THE NORTHERN PORTION OF THE LOWER FLOORS IS SLANTED AND DENSELY WALLED UP TO REDUCE NOISE FROM THE WALL. ALL HAVE EASY ACCESS TO THE INTERIOR COURTYARD FOR A MORE NATURAL READING EXPERIENCE AND THE BUILT FORM ITSELF IS SURROUNDED BY WATER TO ENHANCE VISUAL COMFORT



SITE KEY



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SOUTH EAST PERSPECTIVE

CULINARY BUILDING

THE CULINARY ARTS BUILDING IS A PLACE FOR DINNING, WHETHER IT IS AN OLD CHEF CURIOUS FOR NEW IDEAS OR A YOUNG FAMILY LOOKING FOR SOMETHING INTERESTING TO EAT THE CULINARY BUILDING AIMS TO SUIT ALL TASTES. THE TRAINEES HAVE A KITCHEN DEDICATED TO BAKING MINOR PASTRY, COOKING SOUPS AND PREPARING ROASTS. THE HEAD CHEFS FEATURE AT VARYING TIMES OF THE DAY. FOOD BOTH INDEGENOUS TO KOKSTAD AND PREVALENT IN OTHER PARTS OF SOUTHERN AFRICA ARE EXPERIMENTED WITH. THE MEALS ARE PREPARED FROM VEGETABLES GROWN ON THE ROOF GARDEN. WHATEVER IS SUCCESSFULLY GROWN WILL BE BROKEN INTO A RECIPE THAT IS MADE AVAILABLE TO THOSE INTERESTED IN LEARNING BOTH HOW THE FOOD IS PREPARED AND HOW THE INGREDIENTS ARE GROWN.

DORMS

THE LIVE IN CHEFS ARE AFFORDED A PLACE TO STAY ON SITE ABOVE THEIR KITCHENS, VISITING CHEFS CAN ALSO GAIN A ROOM UPON REQUEST.

THE DORM IS MODELLED AROUND THE SETTLEMENT SPATIAL DYNAMIC WITH A CENTRAL GATHERING SPACE THAT CONNECTS TO ALL OTHER LIVING SPACES DIRECTLY. THIS IS DONE IN ORDER FOR THERE TO BE A SOCIAL EMPETUS ON THE RESIDENTS.

KITCHENS ARE OPEN TO A PARTICULAR CHEF PER DAY ALLOWING FOR EVERYONE TO GET A CHANCE TO TASTE SOMETHING NEW AND PERHAPS STIMULATE A FASTER INNAVATIVE PROCESS FOR ORIGINAL RECIPES.



FIRST FLOOR 1:250



GROUND FLOOR 1:250



BASEMENT FLOOR 1:250

SITE KEY



SOUTH EAST PERSPECTIVE



WEST ELEVATION 1:200



EAST ELEVATION 1:200

THE **INTEGRATION** OF MODERN AND TRADITIONAL ARCHITECTURE. ::
TOWARDS A SKILLS DEVELOPMENT CENTRE IN KOKSTAD

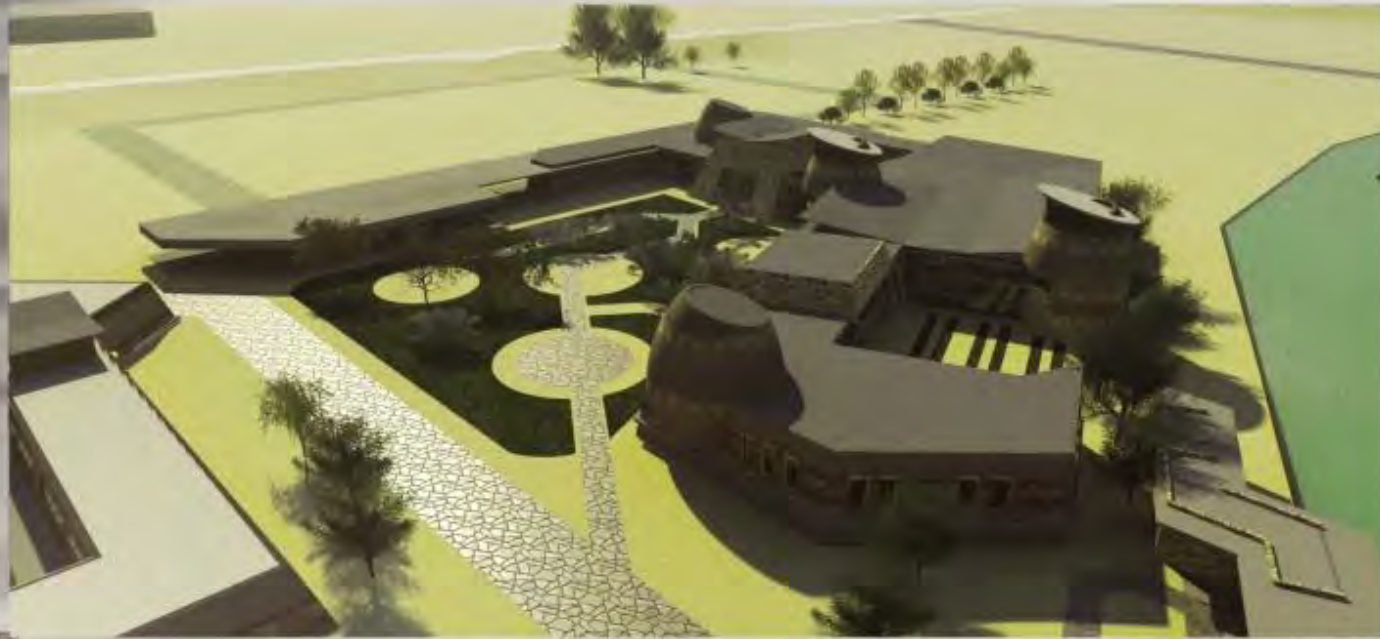
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R & D AGRICULTURAL



WEST ELEVATION 1:200



3D PERSPECTIVE



SOUTH ELEVATION 1:200



GROUND FLOOR

1:250

EDUCATION AND AGRICULTURE

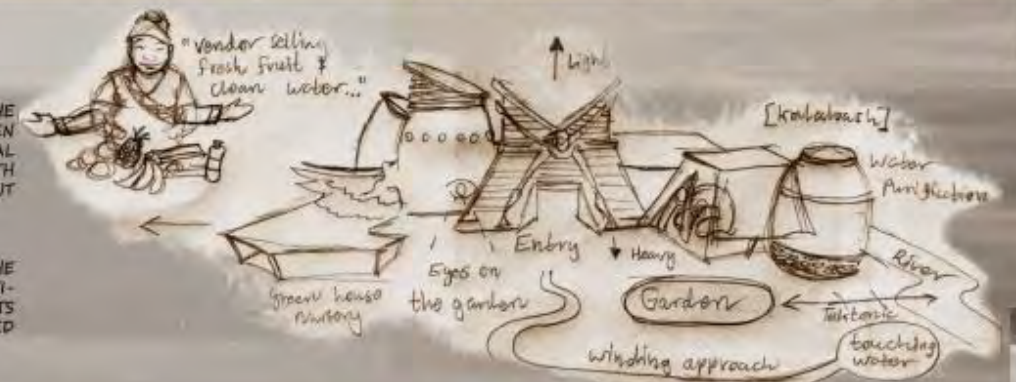
IT HAS LONG BEEN ESTABLISHED THAT FARMING COMMUNITIES ARE ONLY SUCCESSFUL IF THEY ARE CAREFUL NOT TO ABUSE THE SOIL AND NATURAL ENVIRONMENT. CAREFUL MONITORING OF SOIL CONDITIONS WATER TOXICITY LEVELS AND CROP YIELD ALLOW THEM TO MAKE PREDICTIONS OF THE COMING YEAR. THIS HAS LONG BEEN A SKILL ACCESSED DIRECTLY THROUGH A GOOD EDUCATION.

THE R&D AGRICULTURAL BUILDING ATTEMPTS TO BRING THE INFORMATION VITAL TO COMMERCIAL AND SUBSISTANCE FARMING BACK TO THE AVERAGE PERSON. RESEARCH ON THE RIVER AND SOIL PROPERTIES OF THE KOKSTAD AREA IS DONE HERE WHILE AN ALLOWANCE IS KEPT FOR PROJECTS ATTEMPTING TO NURSE BETTER SEEDLINGS, PRODUCE SAFER PESTICIDES AND GENERATE PURIFIED WATER FROM RAIN AND THE RIVER.

THE FORM AND FUNCTION

THE R&D BUILDING IS U SHAPED DIRECTING ITSELF TO THE WEST THE MOST PROMINENT SPACE IS THE ENTRY FOYER OFF THE HERB GARDEN PATH. THE MEANDERING PATH IS REMINESCENT OF THE TRADITIONAL ARRIVAL TO A HOMESTEAD IN MOST NGUNI SETTLEMENTS. THE PATH LEADS FIRST TO WATER THEN THROUGH BRUSH AND VEGETATION OUT TOWARDS THE ENTRY ZIGGURAT.

THE U SHAPED BUILDING IS SHAPED TO EMBRACE AND EMPHASIZE THE FOCUS ON NATURAL MEDICINES AND WATER PURIFICATION. A HIERARCHICAL PLAY OF SHAPES GIVE ONE A CLEAR INDICATION OF FOCUS POINTS WITHIN THE BUILDING. WATER PUMPED UP FROM THE RIVER IS STORED IN VATS FOR STUDY AND EASY RETICULATION.



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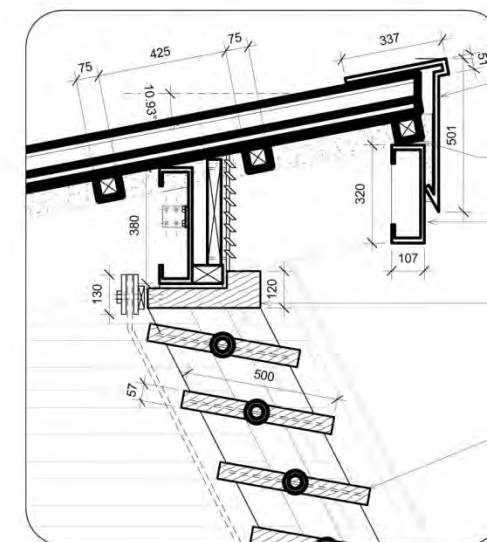
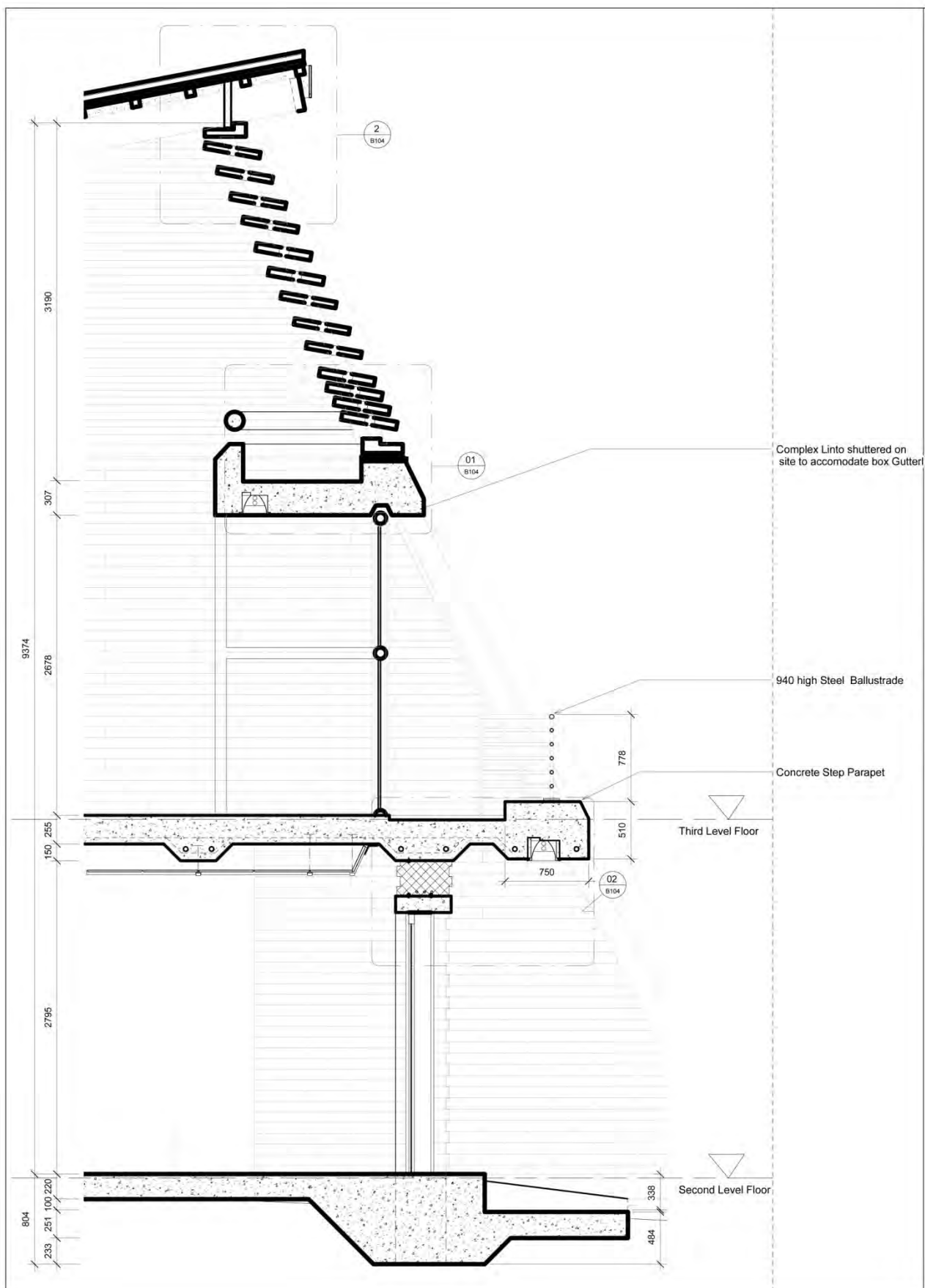
THE **INTEGRATION** OF MODERN AND TRADITIONAL ARCHITECTURE. ::
TOWARDS A SKILLS DEVELOPMENT CENTRE IN KOKSTAD





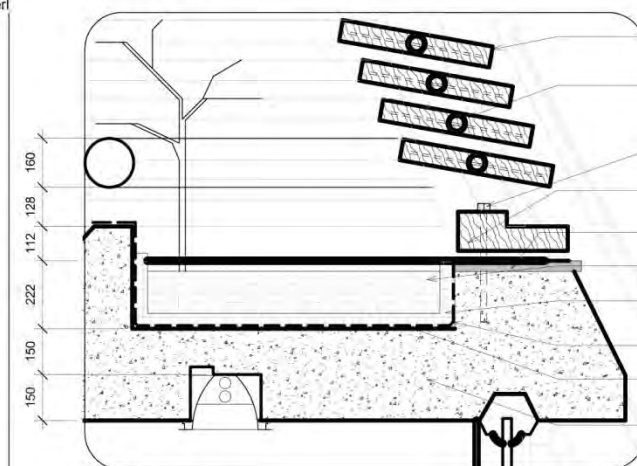
3.2.4 Physical Model





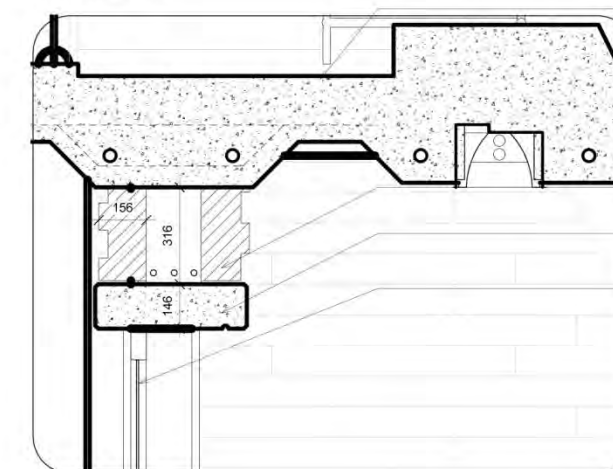
- 337x501 Steel Flashing Clip Revited to Flashing and painted with anodized black PVC coating
- 75x75 Timber purlins glued and nailed together with custom gusset brackets
- 320x100 C-Lip Steel Channel Timber Joists glued and nailed together with custom gusset brackets
- 370x120 Custom meranti Timber Framing beam gusset braced and glued and ends to specialist specifications and treated with environmentally friendly pest repellent
- 500x57 Custom meranti Timber Slaths slotted in grooves, braced with steel rodding and nailed at ends to specialist specifications and treated with environmentally friendly pest repellent

DETAIL A



- 500x57 Custom meranti Timber Slaths
- Steel Pivot Hinges
- Rawl Bolt
- Steel Pivot Hinges
- Steel Pivot Hinges
- loam earth
- gravel
- 0.25 polyolefin membrane
- 50 bitumen impregnated softboard
- 300mm thick Reinforced concrete planter @ 1:250 fall toward weephole, to eng. details

DETAIL B



- 215 reinforced concrete slab to eng. details. To have niche to accommodate light fixing, to be fixed in strict accordance with manufacturers specification, and electrical engineers' details
- 156x316 River stone wall on concrete lintol
- 146mm thick reinforced concrete lintol on edge
- 2434 high glass window pane with hardwood timber frame

DETAIL C

NOTES

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORK.

STRUCTURE:

S1. REINFORCED CONCRETE FLOOR SLABS, ALL FOUNDATIONS AND RETAINING WALLS (INCLUDE OF WEEP HOLES, AGRICULTURAL DRAINS AND BACKFILL) ALL TO STRUCTURAL ENGINEERS DETAIL AND SPECIFICATIONS.

S2. SUPPORT OVER ALL OPENINGS AND ALL STEELWORK SUPPORTS TO BE TO STRUCTURAL ENGINEERS DETAILS.

FLOORS:

F1. ALL REINFORCED CONCRETE GROUND SLABS TO STRUCTURAL ENGINEERS DETAILS AND SPECIFICATIONS ON 250 MICRON DPM ON WELL CONSOLIDATED LAYER WORKS AS PER STRUCTURAL ENGINEERS DETAILS AND SPECIFICATIONS. EARTH UNDER TO BE TREATED WITH APPROVED ANTI TERMITE POISON.

F2. ALL FLOOR FINISHES GENERALLY TO BE AS PER ARCHITECT'S FINISHING SCHEDULE, OR REFER TO GROUND FLOOR PLAN.

ROOF:

R1. PRE-PAINTED (MIN 0.6mm THICK) DEEP PROFILE CONCEALED FIX ROOF SHEETS (BROWN/BLACK) WITH CAPILLARY BREAKS IN SINGLE UNBROKEN LENGTHS, FIXED TO ROOF STRUCTURE, TO STRUCTURAL ENGINEERS DETAILS. SHEETS TO BE FIXED IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND TO HAVE ALL THE NECESSARY FLASHINGS AND COUNTER FLASHINGS. FOR ROOF PITCH, SEE ROOF PLAN.

R2. 25mm THICK ISOBORD OVER PURLIN GENERALLY THROUGH OUT THE BUILDING AREA (EXCLUDING PATIOS) INCLUSIVE OF SLIP SHEETS, FIXINGS AND EDGE SPUNES.

WALLS:

W1. 280mm (115-50-115mm) CAVITY WALLS CONSTRUCTED FROM 220x100x20mm CONCRETE BRICKWORK WITH 10mm HORIZONTAL AND VERTICAL MORTAR JOINTS. BRICK MESH TO BE USED EVERY FOURTH BRICK COURSE. WALLS TO BE PLASTERED AND PAINTED.

W2. WALLS TO BE CLAD WITH 'CAPSTONE' NATURAL STONE WHERE INDICATED ON ELEVATION.

CEILING:

C1. DOWN DROP DOWN SUSPENDED CEILING OR SIMILAR APPROVED.

MISCELLANEOUS:

M1. ALL SHOPFRONTS AND WINDOWS TO BE ALUMINIUM.

M2. ALL GLAZING TO COMPLY WITH SABS0173, SABS 1263 AND CURRENT AAMBA STANDARDS.

M3. ALL ARTIFICIAL LIGHTING ETC TO BE TO ELECTRICAL ENGINEERS DETAILS.

M4. ALL 'ON SITE' ROADS (PAVING), CONCRETE CURBS, PAVED AREAS, MAINLINE SEWER AND STORMWATER RECTIFICATION ETC. TO BE IN ACCORDANCE WITH CIVIL ENGINEERS DETAILS AND SPECIFICATIONS.

M5. ALL STORMWATER RUNOFF TO BE DRAINED INTO STORM WATER SUMP.

TITLE Skills Development Centre

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SCALE AS SHOWN

DATE 08/12/11

Appendix A: Schedule of Accommodation**LIBRARY**

Type	Description	Quantity	Gross Area (m ²)
	Ablutions (pan floor layout)	-	80
	Reference Library	1	400
	Foyer, Control, registration	1	500
	Council room	1	120
	Lending Library	1	900
	LAN	2	506
	Periodicals and Newspapers	1	116
	Music and media Library	1	232
	Archiving	1	154
	Stack Rooms	1	337
	Study Carrels	1	54
	AV room	2	60
TOTAL			3150

ADMIN BUILDING

Type	Description	Quantity	Gross Area (m ²)
Main Office	Offices for chancellor and Administrative staff along with secretaries and subsidiary staff (incl. circulation)	1	500
Boardrooms	Meeting spaces with projector, display screen and	2	14
Restrooms	WCs, wash hand basins, urinals etc.	4	28
Lobby and tea room	Communal space for relax discussion and tea breaks	2	75
Storage		1	8
TOTAL			623

SCHOOL OF CREATIVE ARTS

Type	Description	Quantity	Gross Area (m ²)
Art studios	Artist studios for 1 st to 3 rd year Art student incl. (Kiln, potters wheels, Lino Presses , Damp Room etc)	4	400
Seminar Rooms	Space for small lectures, discussions and written assignments	2	160
Study Library	Specialized mini library for private school book storage	1	200
Lecture Halls	300-400 seat lecture Hall for large lectures	2	320
Exhibition spaces	Space for class exhibitions	2	80
Main Offices	Offices for Head of school, Lecturing staff as well as secretaries and sub-staff (incl. circulation and lobby)	1	350
Boardroom		1	8
Restrooms	WCs, wash hand basins, urinals etc.	4	52
TOTAL			1570

SCHOOL OF PERFORMING ARTS

Type	Description	Quantity	Gross Area (m ²)
Dance studios	Artist studios for 1st to 3rd year Art student incl. (Kiln, potters wheels, Lino Presses , Damp Room etc)	4	400
Change Rooms	Space for students to change into various attire	2	40
Seminar Rooms	Space for small lectures, discussions and written assignments	2	160
Study rooms	Space for private study groups	6	200
Rehearsal rooms	Sound proofed rooms for band practice	2	320
Soft Storage	Secure storage space for musical and technical equipment	2	60
Recording Room	Sound Proofed recording studio for sound engineering		20
Main Offices	Offices for Head of school, Lecturing staff as well as secretaries and sub-staff (incl. circulation and lobby)	1	350
Boardroom		1	8
Restrooms	WCs, wash hand basins, urinals etc.	4	52
TOTAL			1610

SCHOOL OF TECHNICAL SCIENCES

Type	Description	Quantity	Gross Area (m ²)
Seminar Rooms	Space for small lectures, discussions and written assignments	4	320
Study Library	Specialized mini library for private school book storage	1	200
Lecture Halls	300-400 seat lecture Hall for large lectures	2	320
Workshops	Space for practical Machine work	2	380
Main Offices	Offices for Head of school, Lecturing staff as well as secretaries and sub-staff (incl. circulation and lobby)	1	350
Boardrooms		1	8

Restrooms	WCs, wash hand basins, urinals etc.	6	73
TOTAL			1631

SCHOOL OF ECONOMIC SCIENCES

Type	Description	Quantity	Gross Area (m ²)
Seminar Rooms	Space for small lectures, discussions and written assignments	6	480
Study Library	Specialized mini library for private school book storage	1	200
Lecture Halls	300-400 seat lecture Hall for large lectures	4	630
Main Offices	Offices for Head of school, Lecturing staff as well as secretaries and sub-staff (incl. circulation and lobby)	1	350
Boardrooms		1	8
Restrooms	WCs, wash hand basins, urinals etc.	6	73

TOTAL	1741
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SCHOOL OF CHEMICAL SCIENCES

Type	Description	Quantity	Gross Area (m ²)
Seminar Rooms	Space for small lectures, discussions and written assignments	6	480
Study Library	Specialized mini library for private school book storage	1	300
Lecture Halls	300-400 seat lecture Hall for large lectures	2	320
Labs	Space for practical Machine work	4	384
Main Offices	Offices for Head of school, Lecturing staff as well as secretaries and sub-staff (incl. circulation and lobby)	1	350

Boardrooms		1	8
Restrooms	WCs, wash hand basins, urinals etc.	6	73
TOTAL			1811
UTILITY HALL			
Type	Description	Quantity	Gross Area (m ²)
800 seat Main Hall	Interior Hall for both public and private gatherings. To have a flexibility that allows official and cultural performance and exhibitions	1	500
250 Seat Minor Hall	Minor Halls for smaller more intimate events and performances	2	185
AV Rooms		2	60
Eatery	Coffee shop/ lobby	1	150
Practice Rooms	Mirrored rooms open to the community for community based activities	2	140
Green Rooms and Change Rooms	Place for performing artists to lounge before, after and during show, coupled with change rooms and dressing tables	2	120
Back of House	Where props and such are kept off stage	1	300
Restrooms	WCs, wash hand basins, urinals etc.	4	52
Huge External Auditorium	Open space for Outdoor theatrics, assembly impromptu activities, and recreational celebrations.		400
TOTAL			1907

AGRICULTURAL SCHOOL

Type	Description	Quantity	Gross Area (m ²)
Seminar Rooms	Space for small lectures, discussions and written assignments	4	320
Study Library	Specialized mini library for private school book storage	1	200
Lecture Halls	300-400 seat lecture Hall for large lectures	2	320
Main Offices	Offices for Head of school, Lecturing staff as well as secretaries and sub-staff (incl. circulation and lobby)	1	350
Restrooms	WCs, wash hand basins, urinals etc.	6	73
Green Houses		1	200
Garden Store			50
TOTAL			1513

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