

Golofelo

“we are hoping”

Architectural Model for a Church and Community
Facility in Mamelodi extension 22

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Architecture can be defined as the act of place making. The very human activity of demarcating a space and adding value, be it functional, spiritual or emotional. Meaning and the perception there-off is considered integral

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Project Brief

Vulnerable Children

Children in South Africa are faced with enormous challenges. The influence of Aids, poverty, crime and the degradation in family structures causes many a childhood to be far from carefree and happy. Considering that most of a person's mental, emotional and moral being is formed during childhood, the future is looking rather bleak.

Today there are more than 13 million children in Africa who have lost one or their both parents to **Aids**. There are 1.8 million Aids orphans in South Africa alone (Taylor 2002, p. 467). Most are in sub-Saharan Africa. This figure is estimated to jump to 25 million by 2010 (Children on the Brink 2002). The Actuarial Society of South Africa (ASSA) estimates that 6.5 million South Africans were infected with the Aids virus in 2002. ASSA further projects the number of material orphans under the age of 15 to peak in 2015 at 1.8 million (Dorington, Bradshaw & Budlender, 2002, p. 2). A study done in South Africa has found that the infection rate of children between two and fourteen years of age is 5.6% (Sidley 2002, p1380).

However the impact of Aids is far more than just the creation of 1.8 million orphans, which in itself is a dire situation. The impact of Aids on families is of great concern as well. A large number of children orphaned by Aids will be taken in by other family members and therefore they are not counted as material orphans. The sudden increase in the family size puts the family structure and their economical situation under considerable strain, especially if those families are living below the bread line. The impact of Aids is not just in the death of a loved one. People living with Aids need extra care and consideration. The emotional and social trauma needs to be considered as well. This means that the number of children affected by Aids is far greater than just the 1.8 million estimated orphans.

Poverty and **unemployment** are some of the biggest concerns in South Africa at the moment. The effect on children is rather well defined with poverty which leads to undernourishment, poor health care and other social problems.

Unfortunately children in South Africa are rather well acquainted with **crime**. Abuse, violence, homicide, gang activity and theft have impact on kids from the youngest of age. Whether kids are the victims, innocent bystanders, or even the perpetrator, crime leaves definite scars. One of the most alarming statistics refers to the extraordinary high number of sexual offences against children. The Crime Information Centre of the South African Police Force has recorded 221,072 sexual offences against persons under the age of 17 in 1999 alone. (Pitcher et al 2002).

Although it has been suggested that continued exposure to violence will produce a cycle of imitation and eventual acceptance of violence as acceptable behavior, there exist little evidence to support this theory. Instead it has been found that children exposed to violence suffer more from anxiety and depression than those brought up in safe environments (Govender, Killian 2001, p31).

Studies illustrate how the child's ability to cope with a situation is influenced by the environment in which the child lives (Govender, Killian 2001, p31). Society, the community and most importantly the parent act as buffers. Studies on vulnerable children indicated that even a single supportive parent greatly increases a child's ability to cope (Govender, Killian 2001, p31).

The reversal of family roles has become an alarming new **social** phenomenon. A number of households have become essentially child run. In the absence of adults the responsibility of looking after younger kids, caring for the sick and performing basic household tasks are falling to kids. Frequently these kids aren't orphans. The adults are mostly absent due to working arrangements,

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although other factors can't be excluded.

In a survey of vulnerable children done in Stanza Bopane by Moses Maponya in 2003, it was found that a significant number of children have a single caretaker, usually this is a grandmother, but single parents and other relatives are also included (Maponya 2003).

Another social consideration is the plight of the mentally and physically challenged. Just the high rate of Fetal Alcohol Syndrome (FAS) in children is enough to raise serious concern. SA has the highest rate of FAS in the World. In the poor communities of Jo'burg the rate is 1 in 55. Children are 20 times more likely to have FAS than any other birth defect. (Glasser 2002, p26).

Children affected by the above mentioned factors are commonly termed vulnerable children. These kids face greater challenges and risks. A large obstacle in the path of an effective cure to the situation, is the way in which the different professions view the problem. Definitions and methods of treatment of a child in trouble vary considerably between the different professional fields. This results in a fragmented perspectives, understanding and solutions offered.

Defining Vulnerable children

The understanding of Vulnerable Children as a population is rather rudimentary and fragmented in many instances. The different perspectives on vulnerable children are limited to each respective field. Few holistic studies have been done considering the situation of a child in need. Therefore it is rather difficult to find a comprehensive explanation of the term 'vulnerable children'.

According to the New Oxford Dictionary, vulnerable is defined as: "That may be wounded (lit. or fig.); susceptible of injury, exposed to damage by weapon, criticism, etc." (New Oxford Dictionary 1976, p. 1305). One of the better definitions found was in the Children's Act of 1989 of Scotland and Wales, which defines a child in Need as those whose health or development is impaired or is at risk of impairment (Little 1999, p. 304).

A better understanding of the different perspectives on vulnerable children is therefore needed.

Medical

Children in relation to adults, have a higher vulnerability in terms of illness and environmental factors. One of the reasons is that children consume more food, air and water than adults in relation to body mass. This increases the amount of toxins ingested. Combined with higher levels of toxins, the metabolic pathways of children are immature, therefore they are less able to deal with the increased levels of harmful elements. Further increasing a child's vulnerability is the fact that children undergo such rapid growth and development. This process is easily interrupted and can therefore cause much harm. (Unknown 2004, p. 175)

Vulnerability increases with illness and malnutrition. Diseases which weaken the immune system increases a child's vulnerability to infection and other diseases.

Architecture

The field of Architecture considers the vulnerable population to be only those individuals with physical disabilities. The problem is only explored as far as finding the relevant design parameters. But even then this is a rather small and specialized section of the profession. The built environment has been accused of being inaccessible to people with disabilities. According to the Building Code, a building should provide wheelchair access and ablution facilities for the disabled. This does not mean that all buildings are so accommodated, and even then the design considerations are only for those whose movement is restricted.

A paper presented by Amira Osman, an architectural lecturer at the University of Pretoria, and Amanda Gibberd, an occupational therapist defined the shortcomings regarding disability as being restricted to mental and physical capabilities. The authors argues that children below the age of 6 and the elderly are groups of the population which require special care, as well as people infected with HIV/AIDS and can therefore be consired as disabled. When the above mentioned categories are added to the population already classified as disabled, the figure is roughly 44% of South Africa’s population. This is a rather significant portion of the population. But this figure may even be higher if one considers those individuals who are normally classified as healthy and able-bodied, but are temporarily disabled due to psychological, physical, social or economic factors (Osman, Gibberd).

Disabled	4.9 million
HIV +	4 million
Children (under 6)	6 million
Elderly	4.9 million
Total	19.8 million

Legal

The South African Legal System clearly defines the rights of all persons, as well as children. A person’s right to freedom of association and a healthy environment are some of the rights, which are recognized and protected. Children become vulnerable if these rights are infringed.

The policy proposals of the Inter-Ministerial Committee on Young People at Risk (Department of Welfare and Population Development, 1996) included the following practice principles: securing basic welfare

rights, equity, democracy, improved quality of life, human rights, investment in human capital, sustainability, partnership, intersectional collaboration, decentralization of service delivery, accessibility, appropriateness, continuity of care, family preservation, normalization, and child, family and community-centered practice” (Sewpaul 2001).

Economic

Although it is a rather substantial generalization, it has been found that social status is inter generational transmittable. One of the main reasons for this phenomena is that the income and assets of the family during a person’s childhood has a great influence on the shaping of that persons’ life (Children in poverty 1991, p.23).

In America it has been found that single parent families, especially those run by a female, are seven to eight times more likely to be poor than those families headed by two parents (Children in Poverty 1991, p29)

Social Welfare

The Child Care Act 74 of 1983 uses the term ‘child in need of care’ to define children who are in danger. This definition as set out in section 14(4) also demarcates the situations within which a social worker will act. The following situations are listed in section 14(4):

- A child without a parent or guardian
- A child with a parent or guardian who cannot be traced
- A child who has been abandoned or who is without visible support
- A child who displays behavior which cannot be controlled by the parents or guardian
- A child living in circumstances which are conducive to the child’s seduction, abduction or sexual exploitation
- A child exposed to circumstances which may seriously harm the physical, mental or social well-being of the child
- A child who has been physically, emotionally or sexually abused by the parents or guardian

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The New Children's Bill of 2002 lists the following situations concerning children:

- Children affected by Aids
- Child-Headed Households
- Child in kinship care
- Mental Illness
- Neglect
- Orphan
- Sexual Abuse
- Street Child

The above definitions clearly illustrate the need for an integrated approach to the situation of children in South Africa. Furthermore, it is apparent that clear definitions of when a child should be considered as potentially vulnerable are almost impossible to be laid down. For this study all children will be considered as vulnerable. Some might only be vulnerable to some extent for short periods of time, while others might be in drastic need of intervention.

Separating those children who are most vulnerable from other children and the rest of society only places further emphasis on their disability and drastically limits their ability to relate and function in society. This process only institutionalises and stigmatises the problem. Integrating these children with those with limited or no vulnerability, prevents such institutionalisation.

Integrating vulnerable children with the rest of the community and other children of lesser vulnerability promotes awareness and responsibility in the community, as well as strengthening the ability to care for these kids.

Study Problem

Due to problems which exist on a macro level the household and especially the child comes under pressure. These macro-problems, including poverty and Aids, filter down to the community level. Community problems, which include problems such as a lack in economic activity and poor transport, can be sometimes be attributed to national-level problems even though they pose their own dynamics and specific character on the community level. The aim is to identify existing dynamics and structures which can help in addressing the situation facing children. In many developing communities there is a serious lack of necessary support structures for managing and solving child care problems. The General Assembly of the Dutch Reformed Church realised this and is very much concerned with what role the church can play in addressing this problem. The assembly has approached the Centre for Logical and Ecumenical Research (IMER) at the University of Pretoria with a request for a proposal on possible solutions.

The Church has always played a significant role in the community. Places like Botjabelo testify to the huge anchoring force of the church. Dewar and Uytenbogaart consider that institutions valued by society have traditionally affected the urban fabric most, becoming the anchoring nodes in the community for other structures such as homes. (Dewar *et al* 1995. p. 8). This role is being reversed in many new urban settlements. Most significantly those developed through the Redevelopment Program (RDP). In these settlements individual dwellings are laid out in grids, with no provision for open public spaces, economic centers or any other community, social or religious structure. The houses become the structuring element in the community, while the institutions that support the community are only filled in later. Often this process of filling-in the support structures in the urban fabric results in a haphazard and fragmented urban structure. Any community structure should be designed as an anchoring point in the community. This does not imply that the community structures should be established first.

According to Habraken, higher level configurations have failed in the past when put in place before the lower level configurations (Habraken 1998. p.43). Higher and lower level configurations refer to the hierarchy of systems which range from the simple and individual to formalized or institutionalized. It has been found to be risky to provide facilities to accommodate activities which are not found in that community. It is much more relevant to work with existing processes, for then one is more able to determine real needs and specific requirements. The appropriate method of establishing a community is thus to regard growth as a process with different components influencing and directing the different aspects of the processes.

A general 'academic' solution devoid of specific context and real human input is highly inappropriate when designing social spaces. While the design solution should incorporate reproduction, it must be context, site and human specific. Humans imbue a building with purpose and meaning (Habraken 1998, p.7).

Two examples of church run day care centres were investigated in Mamelodi. They are the following:

The Stanza Bopane (Mamelodi) day care service is run from the church building. The centre has about 60 children divided into 3 classes according to age. The building consists of the main church hall with a kitchen and a vestry. The three classes thus use all three rooms. A lack in sufficient storage space means that the Sunday services are held amid such day care equipment as pigeonholes, colorful plastic tables with chairs, and posters of Jane throwing a ball. Some parents are unable to fund their childrens' enrolment. They then help out in other ways. One unemployed mother works part time as a teachers' assistant at the centre, while others help in the vegetable garden.

Another example is found in the congregation of Ikegeng. The church buildings are better provided, with a separate hall and large kitchen. The Day Care centre is run from the hall. Storage space is a problem once again. The toilet facilities are insufficient and far away, which leads to problems concerning hygiene.



Fig 1 Stanza Bopape Day Care Centre

Fig 2 Stanza Bopape Day Care Centre

Fig 3 Ikegeng Day Care Centre

Problem Statement

The purpose of this study is to design a model which demonstrates how the church could provide appropriate facilities to support vulnerable children in Mamelodi. This model will then form part of the proposal presented to the South African Council of Churches by Research and Development for the Prevention of Poverty / Navorsing en Ontwikkeling vir die Voorkoming van Armoede (NOVA), and the Center for Logical and Ecumenial Research (IMER).

Objective

The design objective envisioned the creation of a facility which will act as an anchor within the community. A conglomerate of diverse facilities that coexist and function in symbiosis to generate the required dynamics for sustainable and appropriate response to the different situations facing both children and the broader community, will be considered. An appropriate design solution will contribute not only to the social health of the community, but to the genre of community architecture in providing spaces which banish the impersonal institutions of the past by sustaining a vibrant, supportive environment. As the facility is situated in an area that is virtually devoid of most of the necessary support structures, the facility becomes an important node stone in the community. The problems facing children are so diverse in nature, that it is impossible to provide a single service that will provide meaning-full impact. A rather large variety of uses therefore will be grouped together in mutual support. This promotes communication and cooperation between the different professions, as well as providing a holistic solution so seldom found in previous solutions.

Initial funding, maintenance and the responsible agencies need to be clearly identified and incorporated. This aspect of community building will have a significant influence on the functioning of the facility. It is in this area that different agendas and motives of the different parties involved can become a source of much conflict and contention and needs to be directed towards the common good of the system as a whole.

The church will be the responsible agent. Initial funding will be in the form of donations. The facility will remain the registered property of the congregation, while community ownership of activities and facilities are of utmost importance. Maintenance will be facilitated through the income generated by the facility (ex. rent of floor space by library and the fees paid for internet usage) and the training and employment of local community members. The Department of Welfare provides a subsidy for each child placed in a place of safety. Further funding will be needed for the running of the facility. These might be in the form a subsidy by the Department of Educations' Nutrition Scheme, to provide a nutritious meal to the children.

Interested and Affected Parties

The church of Stanza Bopane is currently running an outreach program in Lusaka. The purpose of the program is to determine needs and to support the people in Lusaka. This study will then be used to determine the form of the new church which Stanza is planning on for Lusaka. The study's time frame runs beyond that of this thesis, but the thesis will provide insight from working with and contacts within the local community. The result of this thesis will probably also be presented to the Stanza congregation.

NOVA and the CMSUP are the organizations for whom this model is being developed. NOVA has extensive ties to the community and has done considerable work in the area already.

Experience in community architecture has taught that no successful community project has ever been done in the absence of community involvement. The community has to be involved throughout the project for a sense of ownership to be created. Community involvement also ensures a greater understanding of the issues specific to the context.

The facility will provide office space which can be rented to the Department of Welfare and the Department of Health.

Schools from the surrounding area will be supported by the centre through the provision of additional services such as a library, a computer facility, after school care, a counselor and a social worker. A strong partnership with the schools is essential to the success of the centre.

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Funding agencies can be problematic when dealing with community projects. The agencies often have agendas and expectations that are inappropriate to the scheme. In the past it has happened that the funding agency places great priority on a speedy completion of the project, as it is more important to have a physical example of the company's social involvement, than to create an ideal community facility. It is therefore important to identify funding agencies and grants which will form a ready partnership, unified in purpose.

The Stanza Bopape Community Training Centre is a successful centre situated in Mamelodi East. The centre provides training in cooking, baking and catering, sewing, urban agriculture, welding and brick making. An important feature of the centre is the service it provides in terms of support to graduates from the training program. The centre received a tender from the Department of Education to sew school uniforms for needy children. These programs and graduates will be used in both the construction and running of the proposed facility. The partnership between the two centers will provide the Training Centre with practical experience and a source of income.

The community of Lusaka is fairly typical of numerous such communities in South Africa. In all of these communities, there are church buildings that are very basic, but that provide services such as housing creches during the week. A successful facility in Lusaka may serve as a model that can be repeated in many other communities.

Users

The center will provide facilities for the care and development of children from the community of Lusaka. Children will come from different socio-economic backgrounds ranging from middle class to the very poor. Separating children according to the income of their parents only further stratifies society, and thus integration is very important. The income generated by charging the more affluent parents will help in subsidizing those unable to pay. Parents unable to provide the financial fees for the day care center provide services in payment. This method is employed with great success at the Stanze facility. Parents can help with the vegetable garden, food preparation, cleaning and fund raising.

Children in the center will range over different age groups. The little ones below the age of 6 will be attend a day care and child development center. Children between the ages of 6 and 7 will attend a pre-school, were they will be taught skills in anticipation of school. The day care and pre-school will operate out of the same facility, but the different classes will be separated. All school-attending children will be able to attend an after-school center. Children from all the different facilities will receive one nutritious meal at the center each day.

The Live-in facility will be registered as an orphan home, and will accommodate kids from different circumstances. It will provide a home for orphans and children who have been removed from their parents or guardians. Orphans whose remaining family members are unable to provide for them will stay at the facility during school terms, and at the family during holidays. These children will come firstly from the immediate area, the remaining space will be filled by children from the rest of Mamelodi East.

The Church congregation is one of the key users. The facility is run as a church initiative and demonstrates the churches involvement with the need of vulnerable children. The meeting space is thus designed with the church in mind although it is important not to imprint the facility with religious icons , as it will be used by the broader community in addition to the church. If the meeting space is percieved as a holy place, it will become inappropriate for any other use, as well as alienating people from different religious beliefs or denominations

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It is conceivable that not only will the community of Lusaka be provided with social, pastoral and health support, but the larger community of Mamelodi East will benefit as well.

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“When I concentrate on a specific site or place for which I am going to design a building, if I try to plumb its depths, its form, its history and its sensuous qualities, images of other places start to invade this process of precise observation; images of places that I know and that once impressed me, images of ordinary or special places that I carry with me as inner vision of specific moods and qualities; images of architectural situations which emanate from the world of art, of films, theatre or literature”

Peter Zumthor 1998 p. 36

Context Study

Philosophical context

A significant amount of the less privileged's time is spent in the public realm as their individual dwellings are unable to facilitate all their daily rituals and activities (Dewar, Uytenbogaart 1995, p. 13) This places the responsibility on the designer to create spaces that not only meet these needs, but which go beyond, to create vibrant and meaningful places for them. However, exactly what transforms a 'space' into a 'place', and the role of the architect in this process, has been under debate for almost as long as the existence of the profession itself.

A place to which people can flock. A comfortable place for spending time in

Vitruvius described dreamers as those who do not tell the birds how to build their nests, but rather who help the birds to build their own nests according to their nature (Dewar, Uytenbogaart 1995, p. 13). Many since have held the opinion that the 'birds', the individual or end user, play an important role. This relationship between user and structure is not static and therefore buildings are not inflexible rigid structures, frozen forever to meet the needs of one specific moment in time. Lucien Kroll views his buildings as being in a timeline without a definite start or end. Incompletion is not a flaw but a condition of the evolution of life. He feels that it is always better to live with the decisions of previous tenants than with the decisions of an architect. Architecture is justified through the will of those for whom it's constructed (Lucien Kroll 1988, p. 9-11) The Built Environment resembles an organism rather than an artifact. It is people who imbue a space with life and a spirit of place, but only for as long as people find the space worth renewing, and if they are included in it's processes. A building endures through transformation of its parts (Habraken 1998, p. 6-7). One way in which buildings can be designed for change was developed by Richard Rogers. He divided the building into different zones, that of technology (short life span) and that of humans (long life spans), calling it open ended architecture. But this 'high tech' architecture became dominated by technology, which was all well according to believed August Comte. He believed that progress is linear and progressive and that eventually all problems will be accounted for and solved. Technology and progress were seen as the one great hope for humanity (Hale 2000, p. 1,17,47-48). Technology on the other hand has proved to be subjected to such rapid and drastic change that designing for a specific technology has proven disastrous. This brings us to yet another important point, the role which a designer's ethos plays in determining the product. This will be discussed later in

Building as a living organism. Continuous growth process. Incompletion, reevaluation and changees a sign of life. This process will only occur if the occupants find the building worthy.

Building should be an activity
(the act of space making)
and a memory, a way of
expressing identity and history,
which can't be separated

We express our world through
myths. A synergy of the known
to explain the unknown. We
define who we are by referring
to things outside of ourselves

Using the inherent meaning
of symbols and elements
in architecture to create
meaning. Understanding and
utilizing the qualities of myths
and memes in architecture.

The communication of purpose, intention and vision through architecture changes according to this interface and can be viewed and implemented in many different ways. It largely lies in how the building communicates its purpose and function, and how the user interprets this function. According to Geoffrey Broadbent architectural language is divided into two groups, the syntactic- which is a preoccupation with rules of combination and structure, and the semantic, which considers meaning in architecture as important. For a long time in architecture the semantic was largely ignored by the modernist. It was the post-modernist who returned to poetic language once again. Robert Venturi felt that the modernist failed in trying to signify function only through form for this caused stigmatation and limitations in the profession. Instead he found that humans understand the use of buildings through the use of signs (Learning from Las Vegas) (Hale 2000, p.146-149).

Micheal Graves divided the language of architecture in rather the same way as Broadbent (mentioned above). He grouped the pragmatic and technical under common Language, and the expression of myths and rituals in society under poetic language. Graves again linked poetic language to history. Building elements are named, and this memory gives a sense of place. The unchanging condition of man can be found throughout his past (Hale 2000, p.152-157). Hartzberger considers syntactic language to be so abstract as to create a feeling of alienation in the user (Hale 2000, p. 163).

The Structuralists are concerned with the "how" of building and meaning. In order to study this they use a philosophy cornering language developed by Heidegger, who studied the history of Language, to find the deeper meanings and relationships that shape language. Structuralists apply this method in the field of architecture to determine the laws, symbols and meanings which underlay an object (Hale 2000, p.132-133). By studying an element and its history, it is possible to find the meaning which connects the element to our world today, thus establishing a link between the architecture and the user.

According to the Structuralists we understand the world in terms of the myths we use to describe it (Hale 2000, p. 133). Ferdinand de Saussure studied this phenomenon in language. He found that communication is due to mutual

agreement that a word's meaning is not necessarily linked to the object. De Saussure dreamed of a science of meaning, which he called semiology. Levi-Straus used the term 'mythemes' to refer to the meaning within a story. He perceived a myth to be an interpretive and mediating device (Hale 2000, p. 138-158).

Gaston Bachelard in his book, *The Psychoanalysis of fire*, describes science as a tool, which can provide precise definitions of things, but that the human beings experience life rather differently. In his opinion, we understand life in terms of images and "stories" (Hale 2000, p. 109).

Philosophy has always been a guiding factor in architecture. Plato first divided our world between the imperfect everyday, and the intangible truth. This relationship finds its way into some of the most influential thoughts of recent times. Hegel formed the concept of Geist, a spiritual, singular consciousness common to all beings. The recognition of an absolute consciousness that is not bound by the peculiarities of individuals, but rather by the properties common to all, is furthermore important. Paulo Ghoelo, in his book *"The Alchemist"*, describes geist as the spirit of the universe, a guiding and nourishing force which binds all beings. Phenomenology is the demonstration of this absolute knowledge. Husserl studied the way in which a mind perceives an object in order to find the true nature of that object. The mind produces its own version of the truth, according to Kant, and therefore by studying this process, it is possible to glimpse the true nature of the object (Solomon 1987, p.3-6). Nietzsche rejected the idea of absolute truth outright, "God is Dead" he claimed, instead he formed the notion of a superhuman. A man who redefines his own world through private contemplation (Abalos 2001, p24-26). The pragmatist considers the mind and the body to be inseparable. The truth is justified and formed through events. Theory and practice influence and adapt to each other and cannot therefore be divided. The everyday is a creative and poetic force (Abalos 2001, p173) Maurice Merleau-Ponty viewed the body as the interface between the physical world and the mind (Hale 2000, p. 106). He believed that we receive all knowledge and information on the world through our bodies. The social constructivists disagree. According to them the knowledge and cognitive processes that produce, form and evaluate knowledge is formed through a person's social experiences (Brophy 2002, p. 43).

Expression of a universal truth, God.
An underlying force that binds all

In addition to expressing the universal truth, it is important to illustrate the connectedness of all things. That all elements function within systems, that one influences the other, and nothing happens in isolation

Throughout it is evident that all these different philosophies are connected by common themes although the focus may differ. Consider the role of the individual. Nietzsche considers it the individual's responsibility to determine his/her own truth. Dewar and Uytendogaart pleaded for the individual's right to influence and determine his own environment. The phenomenologists consider the way in which an individual's mind perceives an object, the structuralists, like Harzberger, strive to create a sense of identity between an individual and space by leaving it up to the individual to determine its use. These links only prove that the world consists of a complex network of interconnected concepts surrounding the individual. Each separate school of thought only considers a problem from a specific vantage point and within specific constraints.

Throughout this exploration I consciously left out systemic thinking since it is the one train of thought which influenced my world view the most. This is partly due to the training I received. I therefore tried to ignore it in order to consider other philosophies with attempted objectivity. In the end, however, it is impossible to ignore systems thinking, for it proved the validity of its theory even through my study of architectural thought. Thoughts such as the importance of the whole over that of the elements and diversity are used in bringing together apparently opposing views, to create a vibrant entity, capable of adapting to different situations. A systemic approach to architecture would be to consider all the different elements and processes connected with the specific problem and site. Understanding lies in considering the connections, rather than the separate elements.



Historical Context of Mamelodi

The past is an ever present memory, preserved in every aspect of human existence. Imbedded fragments become integrated into the modern fabric to such an extent that the historical meaning often recedes into obscurity. Mamelodi is a case in point of this phenomenon.

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form and dynamics are historically based.

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maker and sold glass bottles, produced from sand found in the Pienaars River, to the newly formed SA Breweries (Walker *et al* 1991, p2-3)

The Anglo Boer war also touched the area. Remains of trenches used in skirmishes between the fighting factions can still be seen in the area. A military graveyard was located in the Mazakhele area of the Site and Service until 1970, when the remains of the soldiers were exhumed and reburied in the military graveyard at Donkerhoek. The Masingita Primary School was established on the site.

The

the farm Vlakfontein 329 JR from the African and European Investment Company Ltd for the establishment of an “Black Location” under the Native (Urban Areas) Consolidation Act, No 25 of 1945 (Walker *et al* 1991, p. 3).



Struggle History

While not as famous as other townships for the part it played in opposing apartheid, Mamelodi played host to a number of important movements and acts of resistance. One such was a strike in 1956 by a group of women against appalling facilities and the regulations against home-brewing of beer. Important riots took place in 1976 and between 1985-1986. The government's decision to institute Afrikaans as the mandatory language of instruction in 1976 sparked much anger among young people and resulted in a number of riots. The most infamous of these riots took place in Soweto and resulted in the death of Hector Pieterse (Walker *et al* 1991, p. 30). In 1985-1986 rent increases resulted in the death of thirteen people in what is known as the “Mamelodi Massacre”. 80 000 people had collected outside the MCC offices, but were dispersed with gas grenades dropped from a helicopter and shots fired by the police (Walker *et al* 1991, p. 24). Rent further caused the residents to organize a rally in the HM Pitje Stadium on 9 July 1990. Of the 16 000 people present about 230 were injured when the crowd was dispersed by means of rubber bullets and tear gas.



Fig. 5 Soweto youth during riots in 1976

fig. 6 Arrest of a protestor in soweto, 1976

Governance of Mamelodi has been the providence of many different bodies over the years. First there was the Urban Bantu Council established in 1961 and abolished in 1970 when the Administration Board of the Central Transvaal took over. In 1977 community Councils were established. Authority was finally transferred to the Mamelodi Community Council in 1980. These governing bodies were never accepted by the greater populace. In 1981 the Vulamehlo-Vukani People's Party was established to counter the Mamelodi Community Council, who was seen to be too much in agreement with the Transvaal Administration Board. In 1985 three counselors including the mayor resigned in protest (Walker *et al* 1991, p. 23).

Churches

The value of churches in Mamelodi goes beyond that of a simple place of worship. They provided warmth and comfort to the ill, the low-paid and the unemployed. Churches were a place of meeting, where residents could share experiences and views. Apart from the social value, churches contributed to the culture of the township in a great way. Singing and choirs were very popular, with a number of competitions being held regularly. These include both national and international competitions (Walker *et al* 1991, p. 27)

Churches provided valuable infrastructure to the community, and lent vitality to the surrounding areas (Walker *et al* 1991, p. 27).

Characteristic of many of the Mamelodi churches is the separate belfry, as pictured below in fig. 7.

A large number of denominations are represented in Mamelodi, The largest being the Zion Christian Church (ZCC). One of the first churches was the African Methodist Episcopal Church built in Riverside before 1947 before the relocation of the community to Vlakfontein (Walker *et al* 1991, p. 2).

Historically the church was a place of gathering, a refuge and a social node, It was an anchoring force in the community. Design needs to recognise this dynamic and strengthen it.

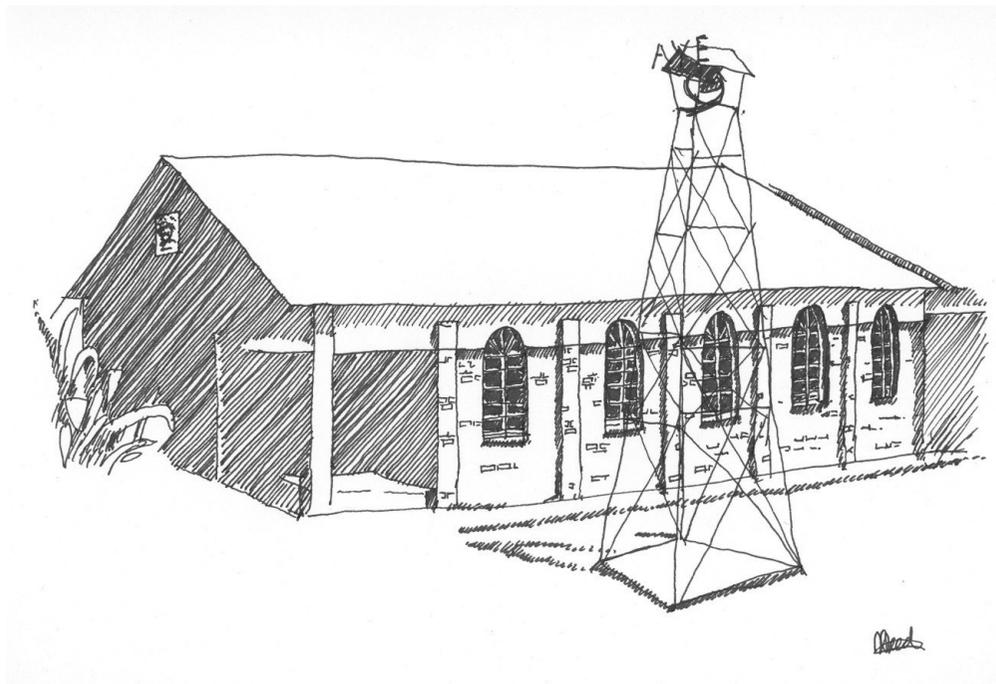


Fig. 7 American Methodist Church, Mamelodi, 1957 (Walker *et al* 1991, p. 20)

Due to historical processes, there exist an significant backlog in the provision of quality facilities.

Regulations set out by the Department of Native Affairs during the 1950's required that any clinic in a black township had to be located outside the township, while being closed enough to serve the people conveniently (Walker et al 1991, p.15). In 1967 a feeding scheme was introduced as an extension of the African Children's Feeding Scheme's drive to combat malnutrition in children. A similar scheme was established in 1976 (Walker *et al* 1991, p. 18).

Despite frequent requests by the community for facilities to shelter needy children, the first orphanage in Mamelodi was only established in 1983. Even then it was externally funded by a Swiss-founded movement for children, and was the first children's home for black children to be built in a urban area for twenty three years. (Walker *et al* 1991, p.17).

The first crèche in Mamelodi was built in 1957. It was named Mxolisi, which when translated means "we are sorry". The reason for this rather odd naming is the result of much fighting over which ethnic group would be allowed to use the facility. By 1991 there were 8 public and 24 private crèches in the area.

People's Parks

Parks and gardens an element of community expression and remembrance. The public open space has to be designed as such a element

Mamelodi was particularly rich in these parks, with the Mamelodi Youth Organization a driving force behind these projects. The parks were constructed with the aid of the community from materials commonly found in the streets. The aim was to clean-up the area and to uplift the spirit of the community. These parks became targets for the security forces as they were commonly named after banned hero's such as Walter Sisulu. Many of these parks are now just overgrown vacant lots. Self-initiated street gardens however are still very popular in Mamelodi (Walker *et al* 1991, p25).



Living conditions

Housing schemes in the area went through a number of different phases. The first scheme implemented was the “Vlakfontein Native Housing Scheme” in 1947, which was a dismal failure. The scheme consisted of thatched “rondavels” situated in a “tribal” yard to create a traditional tribal “Bantu” v

for a generation, the scheme was extremely unpopular.

In 19

Building Research Institute. These houses were soon nicknamed the “matchbox” or “four-room house”. According to some sources these houses had no floors and no ceilings. (Walker et al 1991, p. 10). According to the Pretoria News(27 April 1956) 6000 of these houses had been constructed in the Vlakfontein area by 1956 (Walker et al 1991, p. 11).

Andrew Borraine reported that in 1987 Mamelodi consisted of about 13 478 houses, while a shortage in houses was officially reported as 4 606 houses (Walker et al 1991, p.13).

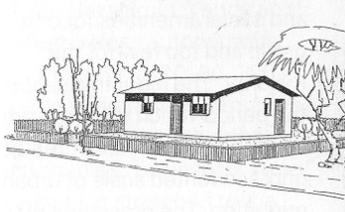


Fig. 8 View of township consisting of house type 51/6

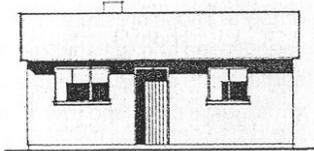
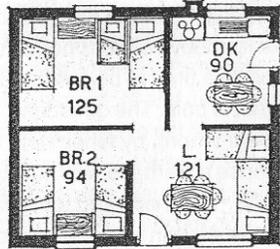


Fig. 9 house type 51/6



By 1991 a number of hostels still operated in the far West of Mamelodi. Between the four hostels 10, 948 men were accommodated. The men paid R22 per month. Most returned to homes outside Pretoria on a regular basis (Walker *et al* 1991, p13). The serious lack in housing can be partially attributed to a government decision taken in 1958 to seize all subsidies and loans for housing for blacks (Walker *et al* 1991, p.9).

Norbert Schingerlin, a graduate of the University of Pretoria, did his BArch thesis project in Mamelodi during 1987. He found that the township had very acted as a dormitory for the workforce needed in Pretoria. The house designs were all according to the municipal house type 51/6 or 51/9, and the erven laid out in a rigged grid. The result was a place reminiscent of the Roman Tent Camps, the monotony removing all sense of place and community. Mamelodi was serviced by the City Council through the provision of electricity and water, but refuse collection was rudimentary at best. Thus an informal collection system was instituted, consisting of pensioners, mostly women, collecting and burning refuse. (Schingerlin 1987, p5-13).

Name Giving

The Moretele River is named after chief Maridile of the Ndebele. (Walker *et all*, 1991, p4)

The origin of the name Mamelodi varies. Apparently it is a praise name for Pretoria, or as some accounts have it, President Kruger. (Walker *et all* p.4).

Stanza Bopape is named after the General Secretary of the Mamelodi Civic Association, who disappeared after he was picked up by the Police in June 1988 along with Peter Maluleka (Walker *et all* 1991, p. 33).

The HM Pitje Stadium was named after Hezekiah Mothibe Pitje, born in 1914, who was the first Mayor of Mamelodi (1967-1969). Pitje was a keen businessman who was actively involved in the community. He supported a few people with bursaries and loans for further education, and was involved in sport development in the area (Walker *et all* 1991, p. 36).

Conclusion and Application to Design

Ignoring the historical context of a place creates a spirit of transience, much akin to that of the Mamelodi created by the Apartheid Government. History creates an understanding for current trends since much of the present is rooted in the past. By honoring and remembering history one adds a layer of meaning and depth to a project and creates points of contact between the user and the facility.

Mamelodi's origins lacks meaning and a sense of ownership. Created as a camp to house the black labour force for Pretoria, for which it is named, a sense of impermanence can still be perceived in many parts. Despite the bleak impersonal surroundings created by rows and rows of house 51/9 and the oppression of a hostile government, people found ways of expressing themselves and of improving their surroundings. The people's parks, created with rubble, to beautify the surroundings and boost the morale, is a very good example. The church played an important role in supporting the community. The church building was a place of refuge and warmth. A place where the needy could find comfort and the community could gather for support and upliftment.

The historic context of Mamelodi informs the design of the importance of the church facility within the community. It is evident that an anchor is definitely needed within the social and urban fabric of Mamelodi. Refraining from relying on geometric rectangles and the grid system will break the pattern set down by the apartheid government. Instead, historic activities such as people's parks, will be continued as a way of honoring the past and allowing self expression.

20 Philosophical Context ■

24 Historical context ■

32 Present Day Mamelodi ■

38 Mamelodi Extension 22 ■

42 Site ■

Context Study

University of Pretoria etd – Rheeder, A (2005)

Present day Mamelodi has grown far beyond what was envisaged by the Apartheid government. It has become a place with its own memories and structures. Prominent features include Moretele Park, one of the most popular music venues in Pretoria, and the house of Dr. Nico Smith, a minister of the Dutch Reformed Church and former Chairman of the Pretoria Council of Churches, who had lived in Mamelodi during the 1980's in protest against the apartheid laws of separate development (Hlaha 2003, p. 4).

Geographically Mamelodi is situated on the eastern side of Pretoria. It is separated from Eersterus, a coloured community by a large cemetery.

Services

The apartheid government planned Mamelodi as a storehouse for the black labor force needed for the economy of Pretoria. Thus Mamelodi has very little industry of its own and many commuters still travel far distances to work, for this 'storehouse' was planned to be beyond the city borders, behind a buffer zone, consisting of industrial zones, and the 'coloured' area of Eersterus, Despite 10 years of democracy this situation still causes much disruption. The bus services are overcrowded and irregular, the busses un-roadworthy and prone to breakdowns. This leads to many workers arriving at work late, which have lead to a few receiving termination of service notices from their employers. Bus stops have no shelters and the rates are considered high, especially for commuters traveling to Midrand and Ga-Rankuwa, for the government does not subsidize travel towards those areas (Jacobes 2004, p.2).

Before democracy, access to black townships were severely restricted. White people needed passes to enter. A spatial memory of these remain in the layout of Mamelodi today. Mamelodi still has only two entrances and exits; one from the south, which enters over a narrow and curved bridge over the railway line at Denneboom, the other from the west, passing Eersterus (Walker et al 1991. p. 8)

A railway line runs along the southern border of Mamelodi and it is crossed by a north-south line, to the eastern part of Mamelodi, but the line, unlike the main line, has no train stations.

A large part of the need for public transport is serviced by the taxi or minibus industry. Notorious for violence and un-roadworthy vehicles, these services are widely used. Taxi fare from eastern Mamelodi to central Pretoria costs around twenty-five rand for a one way trip. Which makes it rather expensive considering the need of the daily commuters.

Due to historical decisions Mamelodi is very isolated urbanly. This can be combatted in design by reinforcing visual links to the rest of Mamelodi, but also with Pretoria and the surrounding natural landscape. It is important to establish a sense of place, else the current atmosphere of transience will prevail

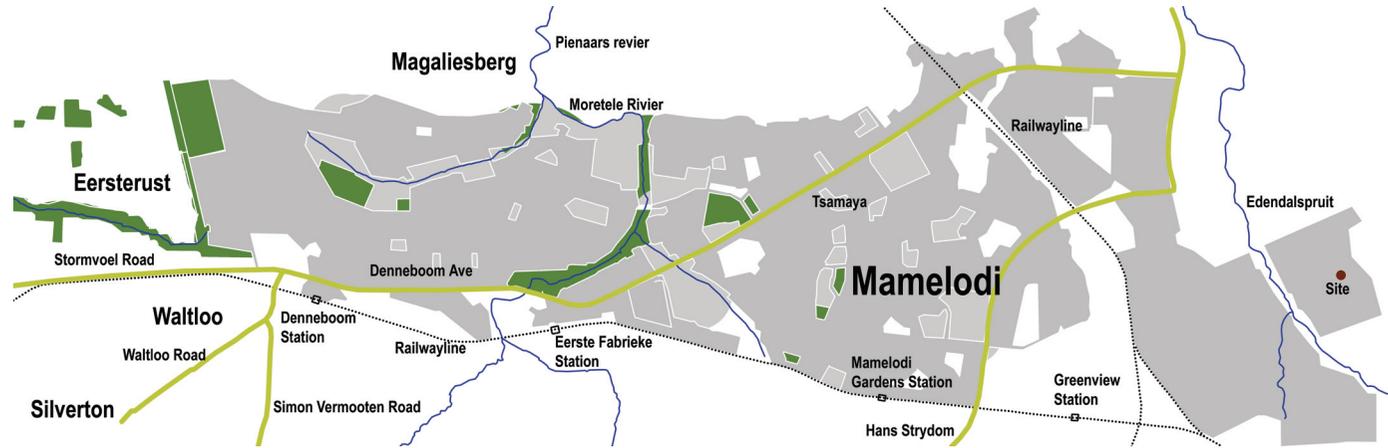


Fig. 10 Transportation dynamics in Mamelodi, road and rail

Crime

Mamelodi's crime situation is perceived as alarming. Late last year the police station of Mamelodi was put on the priority list due to the crime spiraling out of control in the area. The police station Commissioner Director Mokehele Seboloki, described criminal activities in the area as "reign of terror" (Hosken 2003, p. 2)

According to the Police, alcohol is one of the mayor contributors to crimes such as assault, murder and rape. Illegal alcohol and trading practices is a mayor concern in the township. In a recent raid the police seized 2 248 liters of beer at one Shebeen alone (Hosken 2003, p. 2).

Corruption is a prevalent evil that further spokes the wheels of justice. In February this year a detective and two other police officers of the Mamelodi police station was arrested on charges of bribery and corruption (Molema 2004, p. 1).

Fig 11 indicates the distribution of police stations throughout Mamelodi. Although the nearest station is a considerable distance from the project site, a strong police presence has been noted with each site visit.

Safety is extremely important in terms of desing

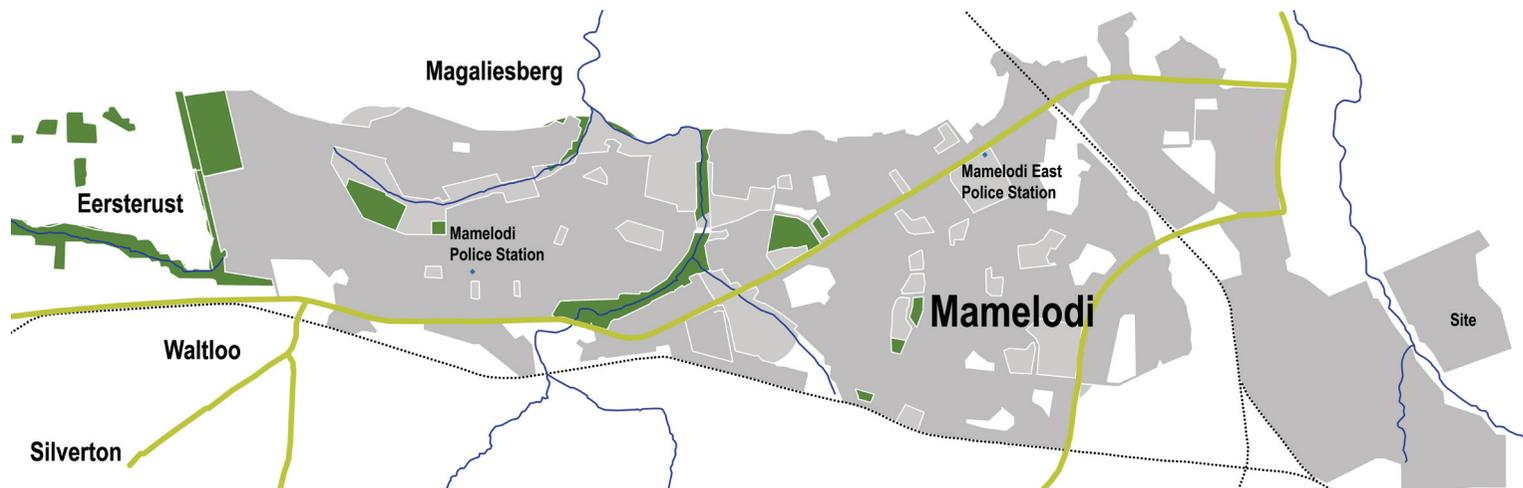


Fig. 11 Police stations in Mamelodi

Mentally ill

The

illness awareness day. This laudable initiative was marred by poor attendance. Only the mentally ill and their families, a few nurses and the SAPD attended. Families say that the mentally ill are treated as outcasts in the community. Nurses from the clinic confirmed that mentally ill patients are often ridiculed and abused by other patients (Mxhalisa 2001, p. 5)

Aids

patients has put an enormous burden on the hospice. Many terminally ill patients do not have the financial ability to pay for medical care, and are thus dependant on non profit organizations and family members.

More t

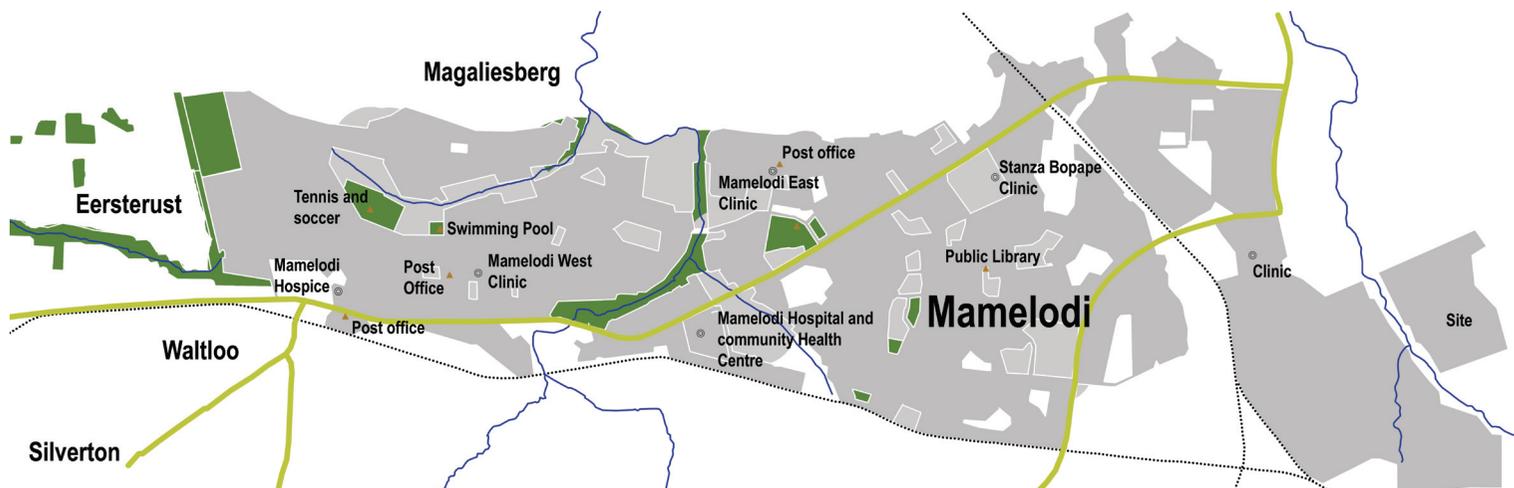
are cared for by family members, normally a grandmother, but some are left to fend for themselves. Under age children sometimes become the heads of families and have to provide and care for younger siblings (Govender 2001, p. 1).

Health Care and Community Facilities.

The lack

evident when consulting fig 12. Public parks and sport facilities are absent and it seems as if Mamelodi is served by only one public library, which indicates that access to information is extremely limited.

Fig. 12 Health care and community facilities in Mamelodi

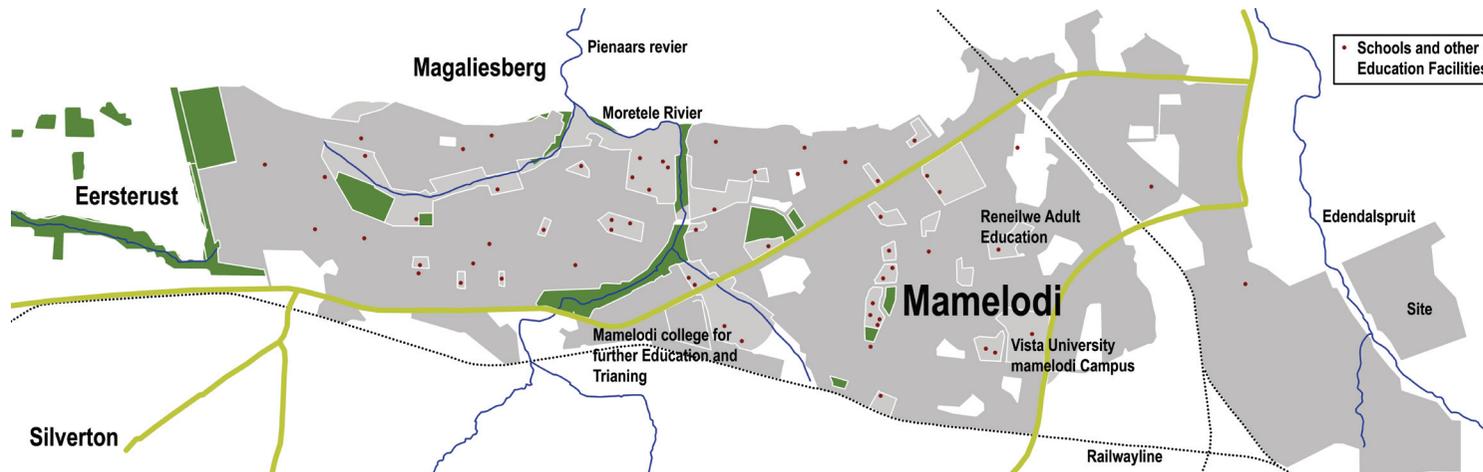


Education

There exist a stark contrast between the schools of Mamelodi West and East. Whilst the schools in the West are generally half-full, the schools in the East are unable to accommodate all the students. Both areas have about 20 primary schools each but, due to the department of education's policy, students aren't allowed to travel more than eight kilometers to school. The area of Nellmapius has only one primary school. There are about 1800 pupils enrolled and the school is therefore forced to use the platoon system (Kotlolo 2003, p. 9).

Distribution of schools throughout Mamelodi is unequal at best (Fig 13). Access to tertiary education is limited due to funding, despite the proximity of the Vista Campus. A number of skills training facilities are currently in operation. The Stanza Bopape Community Training Facility is one of the most successful facilities. This facility holds great relevance to this project and is discussed in greater detail under the Community Architecture Section.

Fig. 13 Location of schools and other educational facilities within Mamelodi



Churches

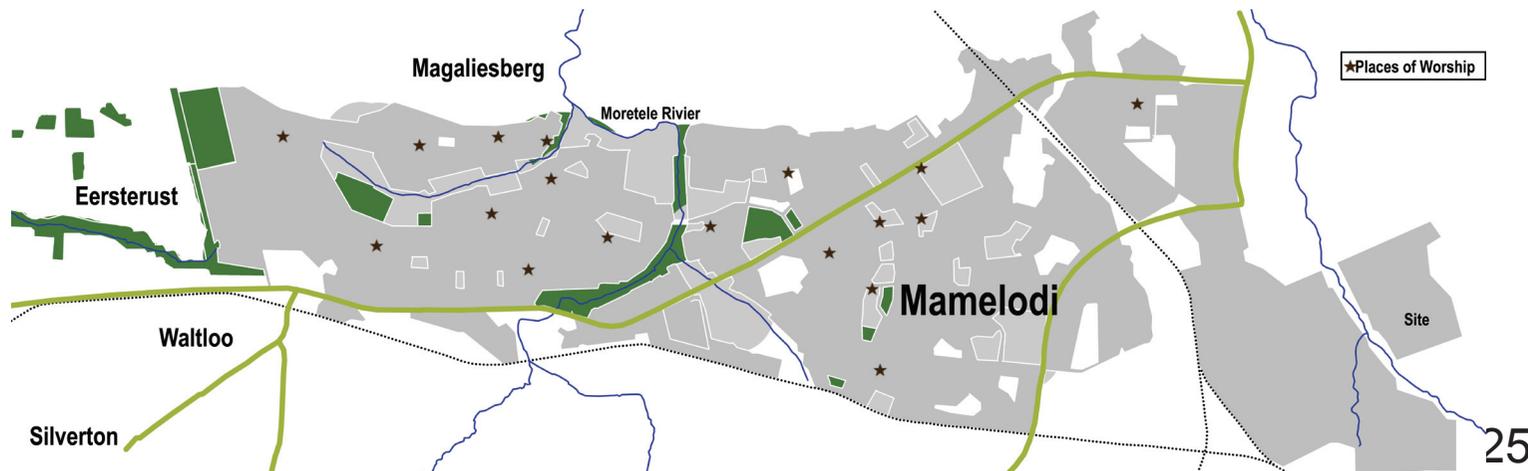
A look at the history of Mamelodi indicates the importance of the church in the community. The church played a role both as a place of gathering, a refuge and as a social node. Looking at the disbursement of churches in Mamelodi, it is evident that there is a significant difference between the concentration of churches in the West and the East.

Housing

Mamelodi contains a number of informal settlements. One of these is situated in Phomolong Ext. 6. A group of about 10 000 squatters have moved onto land owned by the Metro Council and Spoornet. Many of these people have been left out by the RDP process, and now find themselves destitute and without options (Nrhite 2004, p. 3).

Informal settlements do evolve into permanent settlements over time in some instances. One example is Stanza Bopane. These processes can become extremely lengthy and people may live in informal housing for periods exceeding ten years before finally receiving permanent houses from the government's housing program.

Fig. 14 Location of churches in Mamelodi



20	Philosophical Context	■
24	Historical context	■
32	Present Day Mamelodi	■
38	Mamelodi Extension 22	■
42	Site	■

Context Study



Fig. 15 Townplan layout of Lusaka (Pretoria City Council PCC)

Lusaka

Lusaka, established around 1999, is the locally given name for Extension 22, Mamelodi. It hugs the slopes of the Magaliesberg Mountains on the eastern Border of Mamelodi. On its western border the Moretele river forms a wetland boundary. The only vehicular access is a bridge across the river.

The urban fabric grain is extremely small scale and dispersed. There are no nodes and no anchors.

Lusaka is well provided with running water, paved streets, electricity and sewage as this is a new township in the process of proclamation. A town plan for the area indicates areas set aside for businesses and community facilities. In reality these sites are now mostly occupied by squatters who were left over after the new area was established.

The government provided flush toilets on each stand. The residents each own their plot, and it is possible to see this ownership reflected in the homes and gardens.

Facility has to be designed as a node in the urban fabric

Fig 16 Aerial Photograph of Lusaka (PCC).

Many plots boast lovingly tended gardens and homes, even if the owner apparently has very little money.

Access to Lusaka is via a bridge across the river. Another access point is proposed to the south, to link with future development on the area currently occupied by informal settlements. The site is not on any bus routes, but a lot of taxi activity is evident.

Lusaka is perceived as a very pleasant place to live. The mountain form a scenic backdrop to the East, while a view of Mamelodi lies spread out to the West

Despite this rather pleasant picture, Lusaka is still a poor community with very little resources. It is situated very far from any economic activity, although a few self-employed businesses have cropped up. These small businesses, which



Figures from top right

Fig. 17 Ext. 9 Clinic

Fig. 18 House with garden

Fig. 19 Spaza shop

Fig. 20 Water closets

Fig. 21 Ext. 9 school

Fig. 22 Vegetable shop

Fig. 23 Wetland

Fig. 24 Day care

include a daycare center, a vegetable shop, a tuck shop and a home mechanic, are all run from private stands. Apart from these home-run businesses there are no other economic, social or community services such as churches, shops, schools and doctors available in Lusaka itself. Children attend school in Extension 9, and all medical problems are taken to the Clinic in Extension 9. The only recreational area is a large open field with an informal soccer pitch.

Just across from Lusaka, beyond the stream is an informal settlement called RDP. The name refers to the fact that these people are still waiting for redevelopment and the proclamation of a township. They were relocated to this area in 1996 to make room for other developments. The settlement is in a wetland area. There are no services and no roads. When it rains the children stay away from school as the footpaths become impossible to walk and people have to queue for water at the few water taps. Plans for development in this area have already been considered, but it is unknown when they will be implemented.



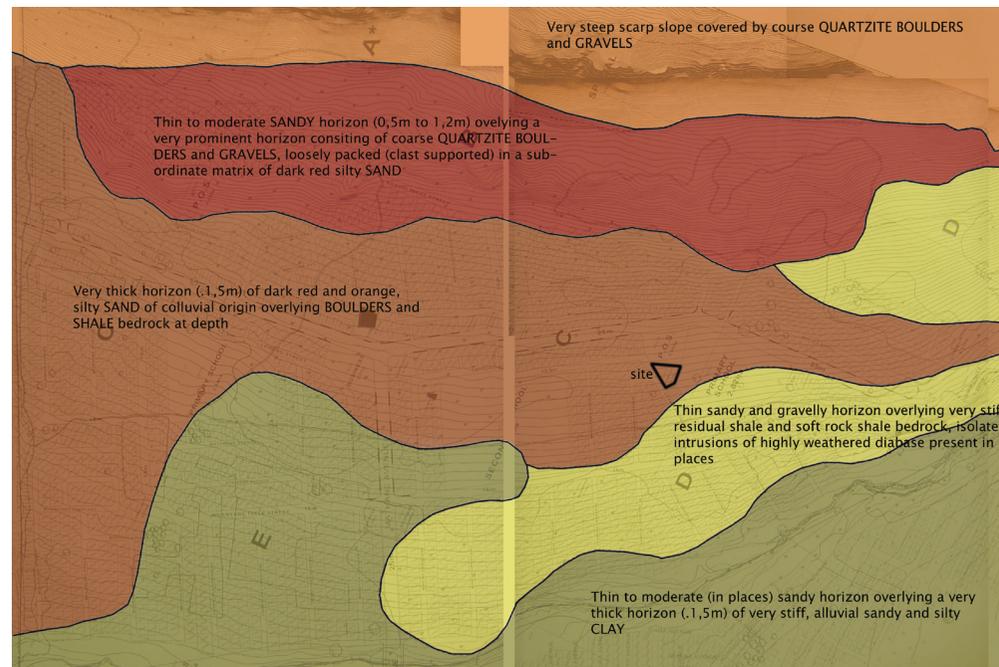
Fig. 25 Townplan layout of site and surroundings (PCC)

The Site

The project site is part of a group of sites which are currently used as an informal soccer pitch as this is the only sizable vacant land. As indicated on the townplan diagram, the site is adjacent to a site set aside for a primary school and to a public open space. The proposal is to consolidate the sites marked as a community facility and a public open space (P.O.S.) as the site allocated for a community facility is too small to accommodate all the proposed model.

The main vehicular circulation route is Mathane Avenue to the east of the site, but as this is a public facility, and a church, it is desirable to have access from all boundaries.

Fig. 26 Geological map of Lusaka (PCC).



The site is situated on a steep slope, falling eight meters from the topmost, eastern boundary to the western boundary. This provides a spectacular view of Mamelodi to the west, with a view of the mountain to the east. The geology of the site is indicated in fig. 26 as a thick layer of silty sand overlaying boulders and shale bedrock. This condition can lead to potentially collapsable soil and unstable side walls to trenches. After consideration the recommended foundation is a conventional strip foundation.



Fig. 27 View of site from Mathane ave.



Fig. 28 View of site from Letsogo street

The context study clearly indicates a deficit in adequate community facilities. Combined with poor home environments, the situation will force many people to seek alternative surroundings. Pleasant surroundings for gatherings, night time study facilities, and the multi purpose hall will provide alternative environments in this regard.

Part of the centre's social role includes strengthening activities and programmes which are already in existence within the community. Apart from contributing to the broader community, the facility increases the involvement of the community as well as creating context specific solutions and dynamics. Utilizing existing dynamics increases the viability of the centre. The number of day care centres within the community, especially those accommodated within church buildings will provide a stable basis from which to expand the centre's activity range.

One aspect touched by the context study is the lack in industry and economic activity. The scale of the facility does not allow for industrial activity, but the local industry can still be supported. By using local craftsmen and products income and experience will be generated within the centre. A limited amount of economic activity, such as a kitchen and Internet Cafe will act a role in generating economic activity within the community. This again underscores the importance of identifying and utilising local dynamics.

Also in this context, the importance of the taxi as transportation medium requires the design to facilitate easy use as well as a large amount of pedestrian activity.

Some of the problems addressed within the centre, such as Aids, orphans and poverty are stigmatised to some degree within society. The danger thus lies in negative perceptions towards the centre preventing wide spread use. An example is the plight of the mentally ill. The situation carries such stigma that nobody wants to be involved, thus the poor attendance and the awareness campaign. A design solution would be to incorporate a wide variety of activities. If the hall were used for community meetings, concerts and weddings, and the support centre with library and computer facility improved the education and knowledge of the community it would be difficult to stigmatise the centre as a place for only the poor and ill. By incorporating the different functions a greater awareness of the difficult issues such as Aids and orphans will be promoted.

48 Stakeholders ■

49 Ubuntu ■

50 Community Asset management ■

50 Life Time Design ■

Community Architecture

Stakeholders

The biggest frustration in working with Community Architecture has to do with the organizational structures. The different stakeholders, including government, NGO's, the development agency and the financing institutions all bring their own agendas to a very delicate scheme. Most of the time these organizations are interested in quick, visual results. This approach is inappropriate since in Community Architecture a structure for the development and running of the facility is extremely important. These structures are best if they originate from within the community itself, and this requires finance, training and lots of time. The most successful community projects are those in which the community had been involved from a grass roots level and in which they have developed a strong sense of ownership. Example : Bagatla Museum and the Nyanga community Centre (P. Riche, 2004).

Balancing the different agendas, expectations and requirements of all the different stakeholders is not an easy task. Further complications are found especially in projects with limited resources. The professional becomes entangled in competing interests, within the community itself and between the community and the funding agencies (Jo Noero). Establishing relevant interests is not such a simple exercise. Individual agendas, conflicting personalities, and opposing interests creates a rather murky environment.

To date Community Architecture has been subjected to a very volatile and sensitive political situation. Schemes have failed due to jealousy (Thulumtwhana by P. Riche), political factors (First Zolani Community Centre) and because the community had not been involved.

Parks and gardens an element of community expression and remembrance. The public open space has to be designed as such a element

Ubuntu

In our modern capitalist society a strong segregation along economic lines are being established. This division has become accepted as the norm and people live their lives along its division. A re-evaluation of the situation illuminates aspects of economic segregation that are some of the leading contributors to societal ills. In the African context such segregation has never existed. Both the rich and the poor lived in one community. This spirit of community is translated as Ubuntu.

“Ubuntu” refers to the organic relationship between people, their spiritual heritage and the natural environment. “Ubuntu” recognizes that humanity plays an integral part in the natural world. Humanity thus carries a large responsibility towards the environment. This responsibility is not the prerogative of a select few, but the whole community, as it is the community who exist within the bio-sphere. Natural resources are thus shared in an equitable manner. “Ubuntu”, in contrast to the market economy, measures a human’s worth in terms of social, cultural and spiritual criteria (M. Maklome 2002, p47-51)

Community asset management

The area of Community Architecture is ridden with many areas of hidden potholes. While it has been illustrated how extremely important community involvement is to the success of a project, too much community involvement can create resentment and resistance within the community. If the community feel that they are given the responsibility to plan, build and manage facilities which are perceived as being the responsibility of the government, they will strongly oppose the project. The community will not tolerate a situation which they perceive to be exploitive. The crux is to allow the community the freedom to choose their level of involvement. Enthusiastic and dedicated participation is only possible with voluntary involvement (Jo Noero).

Experience in Community Architecture has shown Jo Noero that community management, while being a laudible concept, very seldom works. One of the reasons for this is that communities often lack the necessary resources and skills due to poverty. In addition, many people hold the state responsible for support, and thus deny any personal responsibility for the project (Jo Noero).

Establishing expectations in a community can be very risky. When the goals and objectives of the project are not clearly communicated, and when these aren't met, a feeling of distrust and resentment is created, which might result in the failure of the project (Manza Saidi)

However, the training and employment of local community members to maintain the facility creates a job opportunity and local income. If successful this can provide better results than external agencies, who would often operate remotely from the site and who would be unaware of real needs.

Life time design

The social, economic and political environments are in a continuous state of flux and adaptation. It is impossible to predict future needs and uses with accuracy. Needs are often idealized to such an extent that the subsequent uses of the facility are vastly different than those envisioned originally (Jo Noero). The solution is to design a building that recognizes that at any given time it is only a step along the evolution of the facility. Rather like a living organism, the building needs to adapt and grow according to stimuli from the environment. Designing the development along a number of phases allows for greater adaptation and a greater ability to respond to the situation.

Conclusion and Application to Design

Architecture for communities naturally implies community involvement. The time of “architect knows best”, has passed. Experience has taught the profession that community centres which were planned and constructed without the involvement of the community rarely succeeded. The involvement of the people from the community also creates the possibility for strife. The term community does not imply a group of people homogeneous in thoughts, morals, needs, expectation and ability. The involvement of stakeholders from outside the community, such as state departments and funding agencies add more diversity and conflict potential to the process. However, according to systems thinking diversity increases an organisms ability to adapt and survive. This can be seen at the Stanza Bopape Adult Training Facility (discussed as a precedent). The board of directors consists of individuals widely different in training and background. The result is a diverse pool of resources and knowledge. The key element is the end goal to which the whole process is directed. Varying expectations and priorities can cause a project to stale or fail (P Rich 2004). This project is fortunate in that both the local congregation as well as the church counsel have expressed the same goal, that of becoming more involved with the plight of children in need.

Jo Noero has cautioned against high expectations by the designer in the level of community involvement which can be expected. The same thought was mentioned by P Riche. Low skill levels, a lack in resources and political expectations have been previous factors leading to difficulty. This project has a different dimension to it, which has a better chance of preventing the communities from expecting government responsibility. This dimension is the involvement of the local congregation. The relationship between a congregation and their church building normally is one of pride and ownership. Many congregations had to actively generate funds to afford their buildings. This sense of identity and personal involvement generates an ethos of involvement and responsibility. Unlike a conventional community facility, church buildings are the sole responsibility of the congregation. This facility will be the expression of a congregation and the larger church body’s involvement with the plight of the people.

Skill levels in the local community will be used strategically to increase the level of community involvement and responsibility. Skills such as welding, brick making and elementary carpentry have been identified. The welding and brick making are skills located at the Stanza Bopape Adult Training Facility, while the carpentry skills are displayed by the micro industry in the manufacturing of prefabricated wall panels which flourish along the sidewalks of main roads throughout Mamelodi. The manufacture of building elements can thus be contracted to these individuals. Thus the local industry and experience would be supported as well as the involvement of the local community.

Infill construction and detail work can also be delegated to the relatively low skilled local community since the vital elements such as foundations, structure, roof and services will be installed by a skilled contractor because these involve a higher level in skills, experience, ability and resources.

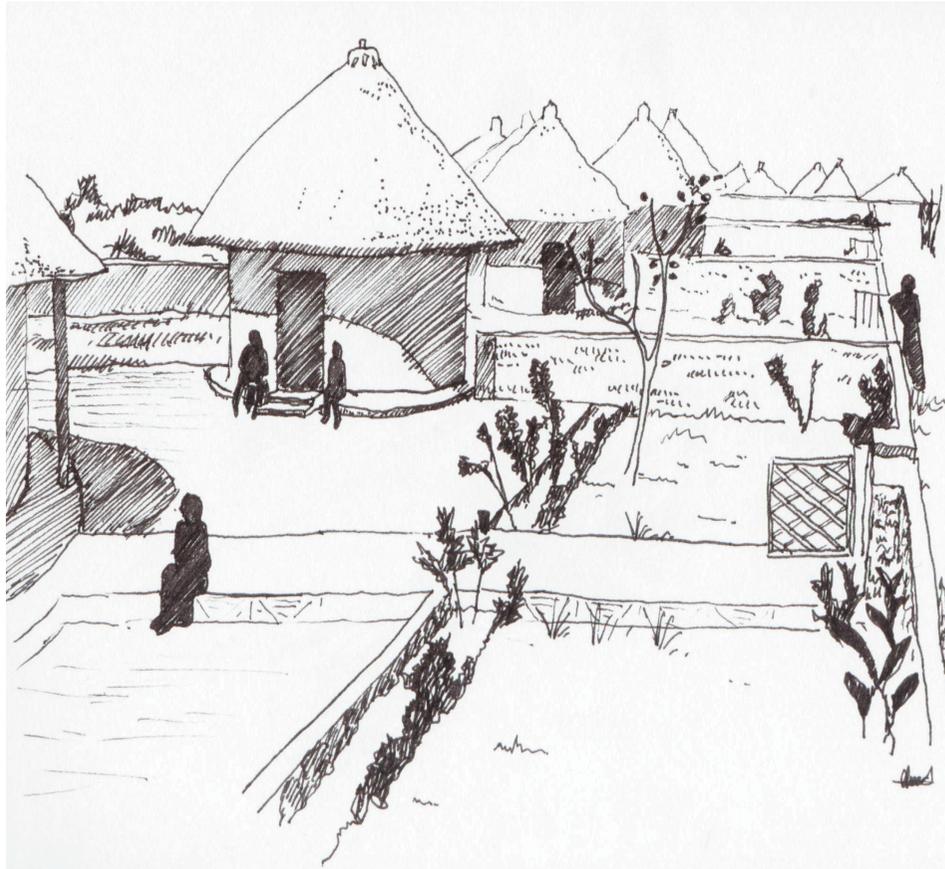
Ubuntu and the expression of equality in diversity calls for places which accommodate activities and people diverse in economic status and culture. The facility should avoid any stigmatation as a place for only poor and ill people to go. The centre should appeal to diverse people while avoiding excluding others by using an architectural language which is too strongly associated with a specific group. This is achieved within the design by avoiding such iconastic and cultural detailing which can too strongly identify the centre with one particular group. A complete avoidance of meaning however creates a sterile environment. The solution is to return to the basic meaning in elements, akin to the methods employed by the structuralists and Heidegger. They created an architectural language which in stead of expressing culture and religion, focusses on the commonality, the basic principles.

- 54 Vlakfontein Rondavel Housing Scheme ■
- 55 Zolani Community Centre ■
- 56 Soweto Careers Centre ■
- 57 Bopitikelo Community & Cultural Centre ■
- 58 Marcovia Community Centre ■
- 59 Education & Care Centre, Durban ■
- 60 Stanza Bopape Adult Training Facility ■
- 62 Cardboard Church ■
- 63 Anton du Toit ■
- 64 Bogata School Chapel ■
- 65 Urubo Church ■
- 66 Allston Library ■
- 67 Sandton Library ■

Precedents

Vlakfontein Native Housing Sceme, 1947

Malan, Prinsloo, Hertzog



fFig. 29

The first housing project undertaken by the Pretoria City Council (CCP) in Mamelodi was a rather dismal failure, but its failure provide meaningfull insight.

The architects, E. Malan, CW Prinsloo and A Hertzog went to Bechuanaland in order to study typical native housing patterns. By 1947 about fifty of these houses had been build. They consisted of a round “rondavel” with a thatch roof extended to form a “stoep” around the house, which was placed within a “traditional” yard. The “Vlakfontein Native Housing Sceme” resulted in a massive public outcry. The Pretoria News of 6 September 1947 wrote “primitive kaffir housing... which was causing considerable racial conflict and feelings of hostility”. According to the National Council of Woman 2000 “Natives” consulted by the Native Advisory Board passed a vote of no confidence in the architect. One of the main reasons for the huge resentment against the scheme was due to its inhabitants. Most of the residents were forcefully removed from the Lady Selborne area and relocated to Vlakfontein. Most had been urbanized for at least a generation, and the return to such ‘rural’ and ‘tribal’ surroundings were seen as inapropriate and insulting.

Due to the strong public resentment the scheme was thus abandoned and the rondavels torn down two years later (Walker et all 1991, p10).

The strong lessons contained within this historic episode warns against the use of overtly ‘rural’ architecture in an urban context. People are very easily alienated when they consider the architecture to be patronizing.

In a paper presented by Mogorosi Makolomakwe at a CAM workshop in September 2002 he described lessons learned from his involvement in the renovation of the Nyanga Community Centre.

The centre evolved out of a process which spanned 7 years from 1993 to 2000. Initially the process was established through the “Black “ Council of Ikapa Town Council, but failed due to the politically volatile community of Nyanga. Only after another project launched by the City of Cape Town for the upgrading of roads in the area took place, did the community approach the contractor with plans for the centre. This illustrated one of the key lessons in community architecture, that those processes initiated by the community and supported by the authorities, have a better chance of success.

The design population include babies, children, youth, adults and the physically challenged in facilities for pension payments, youth support programs, programs for the elderly, a chreche, community meetings, visual and performing arts, karate and bodybuilding. When the design caters for the design population and its different functions the facility will be in use and alive with activity throughout the day.

Makolomakwe considers community empowerment as an important aim in community development to ensure that development of the community does not fall to external factors (M. Makolomakwe 2002, p47-51)

This precedent supports some of the thoughts already expressed within the study, namely that a diversity in approach and activities increases use, over all vitality and appropriateness. Community involvement throughout the entire process ensured a sense of ownership. The implied threat of resistance warns against programs which are enforced ‘top-down’ without consideration.

Soweto Careers Centre

Joe Noero

Situated near the Baragwanath Hospital, the centre is placed in a large, vacant piece of land. With its soaring roofscape, and industrial approach, the centre proclaims hope in an environment heavily burdened by poverty and unemployment.

A very strong hierarchy exists between the different spaces and volumes. Each space and its function is clearly articulated in the scale, volume and bright sign writing. Entry points are clearly defined and facilitates the transition between spaces. But the spaces do not exist independently. The intermediate links and transitions appear to be achieved effortlessly. A strong connection between indoor and outdoor spaces are established. The space open unto an indoor court, which is used for special functions.

One section of the central hall's wall slides away to open towards the court. A connection with the environment outside the complex is established through a grill block wall in the courtyard, through which the veldt outside is visible. This strong connection with the outside promotes a sense of wellbeing, air and light, as well as a strong sense of place, a connection with the context.

The success of the project is proved by the pride and joy with which the community uses the facility (Slessor C. 2004. p. 22-29).

The expression of hope distinguishes this facility from others. It illustrates how a community facility uplifts a community by being a beacon of hope.

The use of scale, hierarchy, and defined entrances to communicate use and function indicates a mastery of the architectural language. An understanding of people's interaction with the natural environment contributes to the success of the project and people enjoy using the facility. A range in indoor, outdoor and transitional space, the inclusion of natural elements as well as the connection with nature contributed to the creation of a viable, pleasant and healthy place.

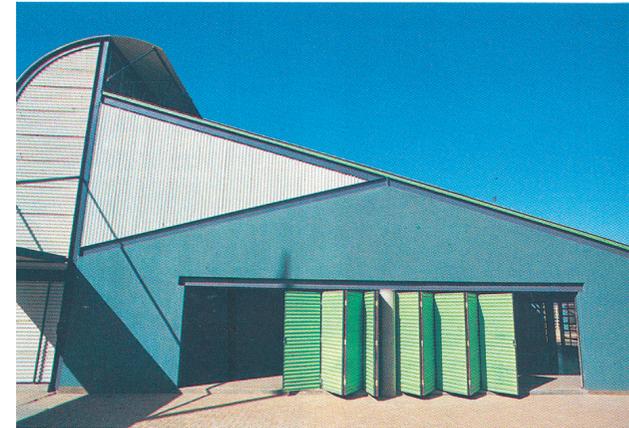


Fig. 30

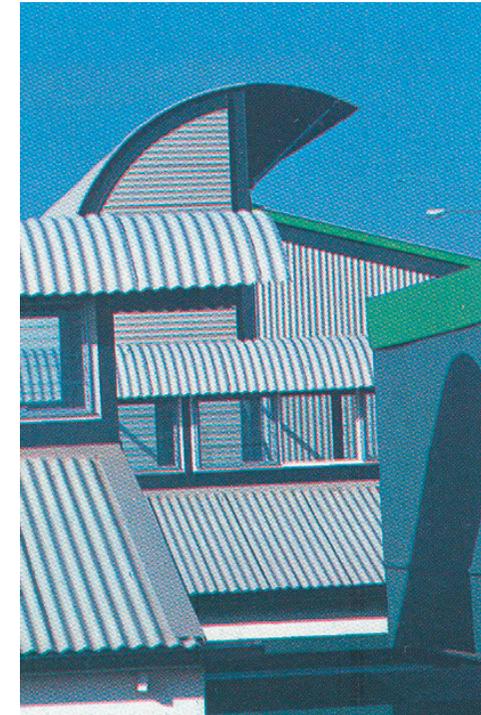
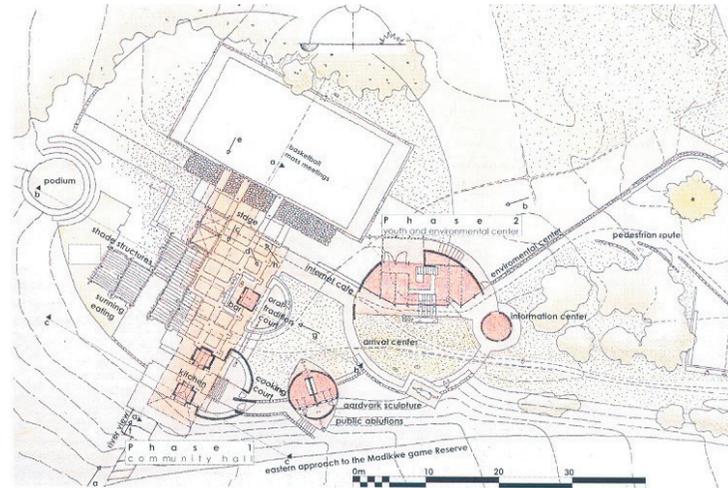


Fig. 31

Bopitikelo Community and Cultural Centre
Peter Rich Architects

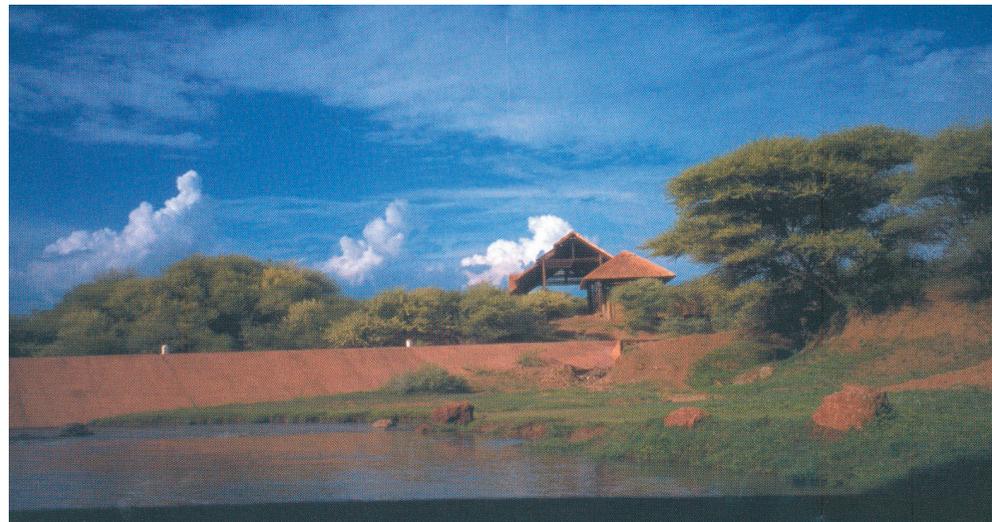
Fig. 32



This project, done for the Molatedi Community in the North West of South Africa has won the Best Building in the category of public and culture architecture for Africa and the Middle East at the recent World Architecture Awards. The building's location was determined by the intersection of cattle trails which lead to the river. This is where the cattle herders will gather and rest, while the cattle wallow in the river. The captive cultural tourism market at the nearby Madikwe Game Reserve acted as a generator for the project. The architect saw the project as a means to reintroduce cultural pride and traditional building methods in a community removed from its heritage. Traditional space making determined the architecture. The project consists of pavilions annexed by outdoor spaces, enclosed volumes and flowing vistas, which strongly establish a connection to the natural environment (S.A Architect 2001, p.34-36).

As with the Soweto Careers Centre, the connection and use of the natural environment is used to create enriched places. One aspect of the project which inspires is the careful consideration of location. Placing the facility at the intersection of cattle paths utilizes the local spatial dynamics to establish the centre within the collective consciousness of the community.

Fig. 33



Comunity centre, Marcovia, Honduras
Jae Cha

Marcovia is a small town which was destroyed in 1998 by a hurricane. Some 2500 houses were built as part of the relief program, but there is no electricity or communal facilities. Daytime temperatures are excessively hot and humid. The community had to hold religious services in the evenings in the open with the aid of gas lanterns.

The structure is beautifully simple. The columns consist of U shaped concrete blocks with steel reinforcing, the roof of corrugated metal on steel channels. Vertical enclosure is provided by screens manufactured from polyethylene monofilament fabric which is usually used in agricultural shading. These movable translucent planes allow for a flexible internal space. The structure is open on all sides, which allow for the free movement of air.

The structure was built over a period of three months by the community, with donations for material from local and international sources. It provides shaded playing area for children, a place of worship for a protestant Christian congregation and a place of trade training for older children (Architectural Review, 2001/12. p. 46-47).

The incredible sense of place and well being which is exhuded by this structure is create by the free flow of space and the almost sensual use of light while still clearly demarcating inside and outside. The fact that this is acclomplished with only a roof, floor, columns and screens indicates how the inherent emotional value imbued in all architectural elements can be utilized to stimulate an emotional response from the user.



Fig. 34

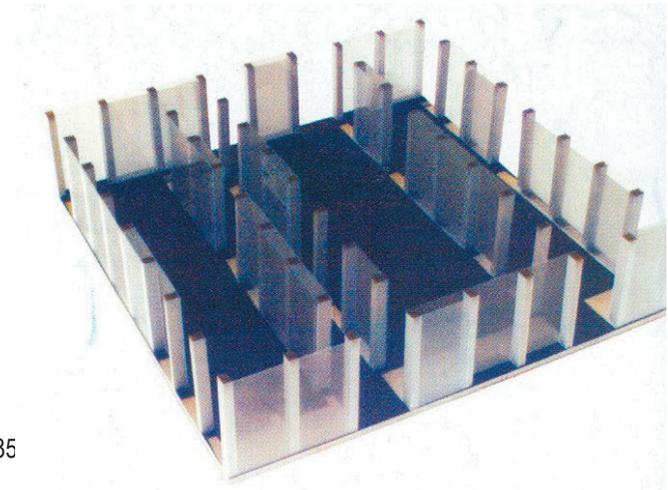


Fig. 35



Fig. 37

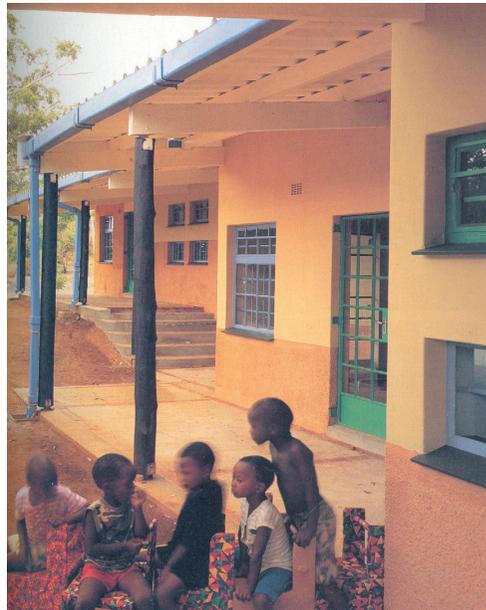
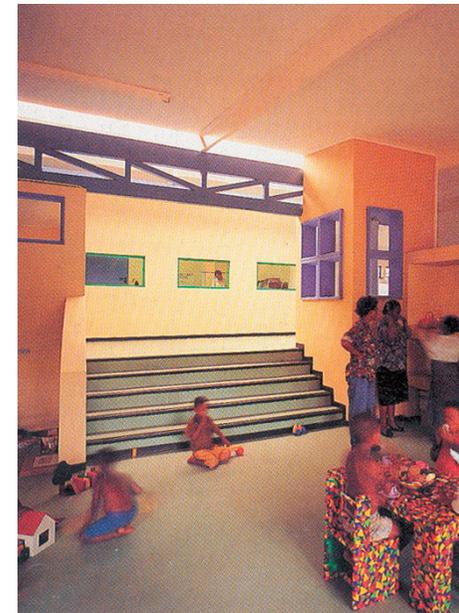


Fig. 38



Education and Care Centre, Durban
Liebenberg Masojada

Of the 6.3 million children under the age of six, over eighty percent are black. Pre-school education is relatively unknown to this population group. Research done at the start of this decade indicates that only about two percent had access to pre-school education. The Association for Training and Resources in Early Education (TREE) developed a model facility in Durban to both serve children from the surrounding informal settlements, but also to provide an example to training teachers.

The building is organized along a central spine, from which small alcoves are placed for ideal observation of class room activities. The class rooms are sunk below the level of the movement spine and vary in size, which allow for different groups and activities. The central spine is glazed, which brings light into even the most secluded space. The roof extends beyond the irregular floor plan, creating a number of covered porches for outside activities. Although very simple, the building allows for an interplay between light and shadow which animates the simple construction. The careful consideration for inside, in between and outside spaces create a vibrant and pleasant facility (Slessor 1995, p.35-36)

The variety in spaces created through the irregular floor plan allows for a variety of activities, as well as communicating shelter, intimacy, and individuality. The scale of volumes and places should be considered in light of the emotional value. The use of light, transitional space between indoors and outdoors and color creates a facility which enhances the education of children beyond just that provided by the teachers.

University of Pretoria etd – Rheeder, A (2005)
Stanza Bopape Adult Training
Mamelodi East

This is a rather modest facility situated next to the Stanza Bopape Health Clinic. The centre consists of a number of classrooms and a communal garden. Despite appearances, the facility manages to produce astonishing results. Initial research for the centre was started in 1991 for a new health clinic. Various groups were involved, including the Council for Scientific and Industrial Research (CSIR), the University of Pretoria and the South African Breweries.

Funding has been a major obstacle in the history of the centre. The project was almost halted due to an inability to access the allocated funds. The first courses offered included sewing, juice making, welding and block making. But the last three activities were stop due to a lack of funds. In 1999 the Department of Social Services took over the management of the centre, and since then things have improved greatly. The centre currently offers training in baking-cooking-catering, sewing and urban agriculture. Future programs which are planned for this year includes welding and brick making. Training are offered free of charge to people from Mamelodi. Potential students must be unemployed, are interviewed and enters into a contract with the centre.

One of the main areas of success is the high priority placed on after care. Most students chose not to leave the centre after graduation, but remain at the centre where they are exposed to the whole range of activities involved in running a business. One example of this process is the sewing training. The centre received a tender from the Department of Education to sew uniforms for poor and orphaned children in the area. After training the students are thus employed. They are evolved in all aspects of the process, including the administration, measuring and manufacturing of the uniforms. Through this process the student receives valuable experience, while generating an income.

The involvement of professionals in the centre is of



Fig. 39



Fig. 40



Fig. 41



Fig. 42

note. The Board of Directors and Management consists of qualified persons from the community, including a member of parliament, lawyers, a teacher, a financial advisor and a pastor. With supervision from experts from a wide range of professions the centre is much more capable in its management role.

One of the most important factors for the success of the centre is the community participation and ownership. The community was actively involved in the planning, construction and running of the centre. The facilities are visible and easily accessible. The community therefore feels a strong sense of ownership and responsibility. The lack of serious theft and vandalism in the centre, in an area notorious for crime, is an indication of the high degree of community involvement and regard (Ranuyama 2004).

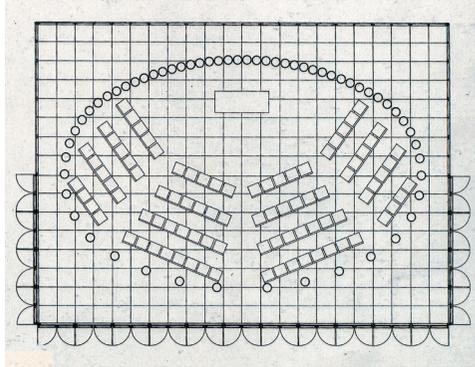


Fig. 43



Fig. 44

Cardboard Church, Kobe, Japan
Shigeru Ban

After the earthquake of 1995, this singularly exquisite Roman Catholic Church was built by Ban and volunteers from the congregation. The plan consists of an outer rectangular envelope of corrugated polycarbonate sheeting supported by an inner ellipse consisting of 58 cardboard tubes. The roof acts as the tie between the two forms. The gentle handling of space and light creates a sacred space sensitive to the disaster. The spacing of the cardboard tubes indicates direction of worship and entry. The difference between the two forms creates a servant space around the inner sanctum (Davey 1999, p.71). With the minimum use of material and a vrrugal plan, Shigeru Ban created a church of immense emotional value by combining the peotic with the purly functional and a clear understanding of space.

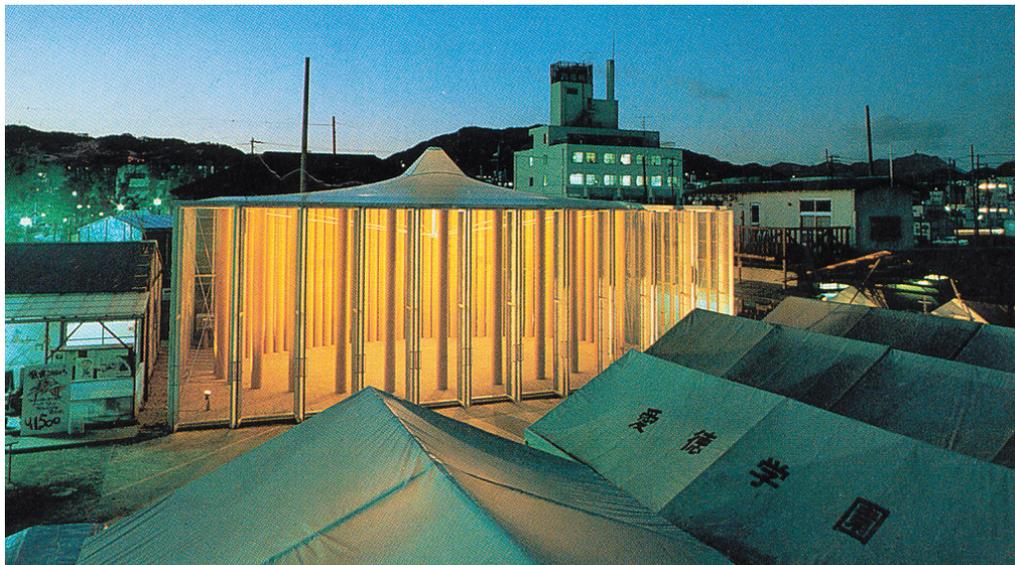


Fig. 45

Church, Matlala, Groblersdal Anton du Toit

This is a small church designed for a rural congregation. The whole facility was self built by the local pastor, who was a skilled carpenter. Careful design minimized the cost of church. Cost calculations indicated that three large steel roof trusses were more economical than a larger amount of small trusses. Reusing building elements to fulfill more than one function further reduces cost. An example of this philosophy is the bell tower, which is formed by extending the parapet walls of the church vertically. (du Toit 2004) The buildings are carefully placed to allow for intimate outdoor spaces to be created. The transition from public to sacred, indoor and outdoor are gracefully executed

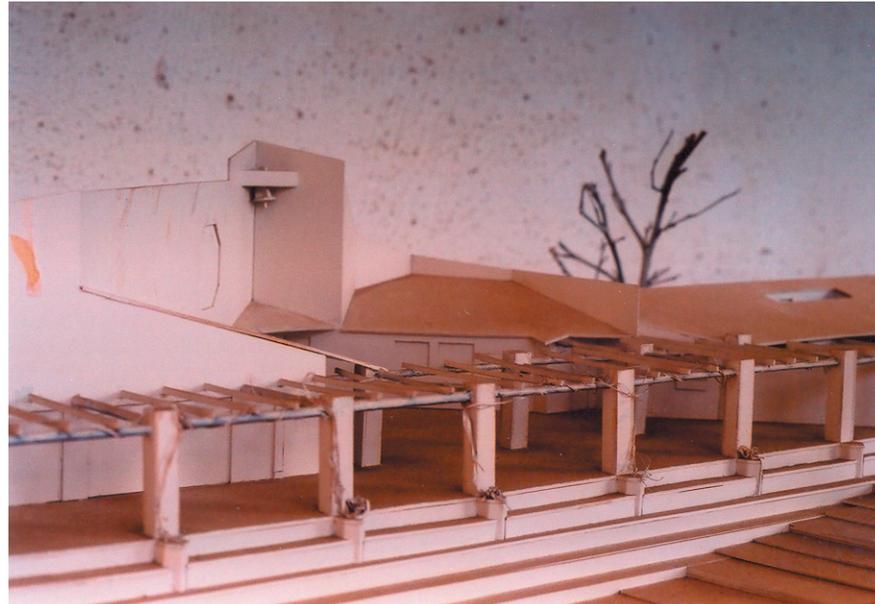


Fig. 46



Fig. 47

School Chapel, Bogota, Colombia
Daniel Bonilla Arquitectos

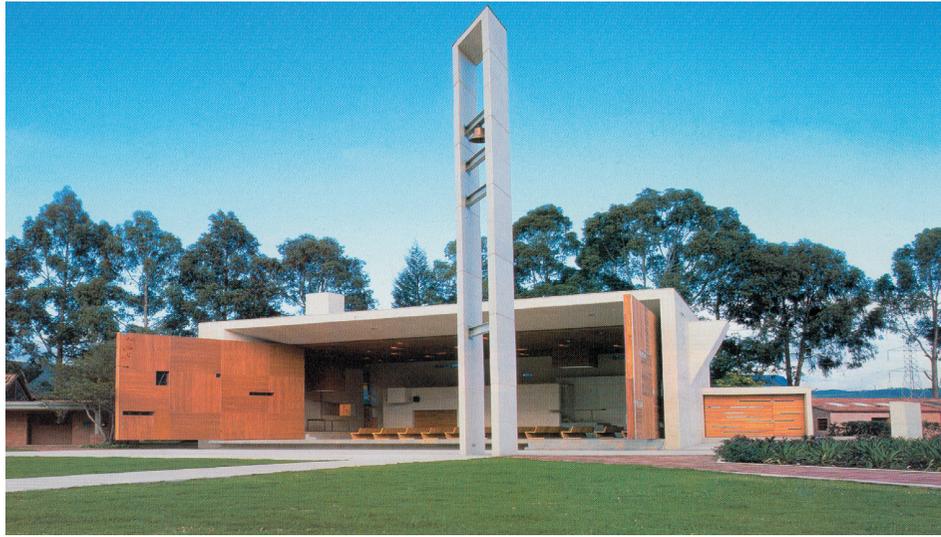


Fig. 48

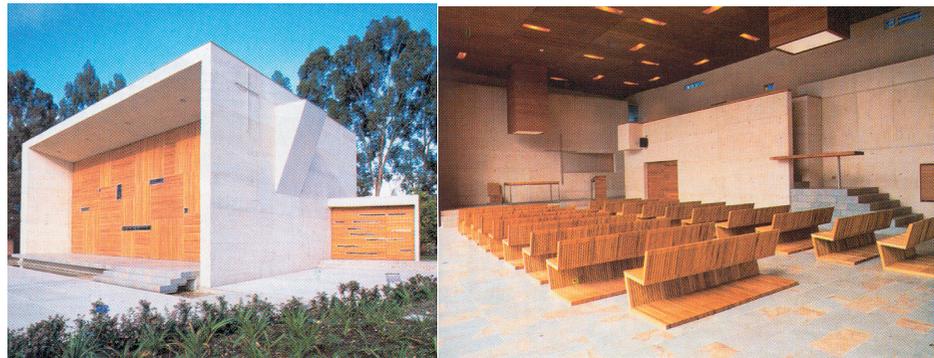


Fig. 50

One of the factors which sets this chapel apart is the dramatic change it undergoes. From a small chapel with a choir gallery and altar dias which can accommodate about 100 people, to a proscenium stage for a 1000 people. The wooden North-West wall swings open, revealing the interior of the main space. The choir and priest then changes place, with the priest up on the gallery, and the choir down on the dias.

Entrance to the chapel is via a large door on the South-East, (visible in fig 48), which leads to an entrance foyer. The foyer opens up onto a shallow pool, walled in to focus attention on a line of trees.

The Entrance and altar dias is emphasized by the use of light wells, while small openings in the concrete wall and wooden door provides additional light. The campanile is situated in front of the entrance door, forming a portal across the entrance axis (Davey 2003, p. 78).

Reconsidering the boundaries between indoor and outdoor space, as with the Soweto Careers Centre by Joe Noero, lead to greater flexibility in function and scale. The progression toward the inner sanctum by means of approach axis, point of entrance and redirection heightens the experience of space, as well as placing greater emphasis on the final destination. The Drama of space.

Church, Urubo, Bolivia

Jae Cha

This extraordinary simple structure, built by the congregation, consists of pressure treated wood and translucent polycarbonate sheeting. The placement of the sheets create varying degrees and patterns of shade, which underscores the sun's daily movement. The most basic elements are used in an innovative and sensitive way to create a place of worship with integrity and character. The use of light and the understanding of space contributes greatly to the success of the project. As with the chapel by Sheigeru Ban, the sanctity of the inner most place of worship is created by isolating the space from the outside world, in experience, if not in actual fact. The progression towards the inside is clearly illustrated, with varying layers protecting the inner sanctum. Yet in efficient use of light and carefully placed openings allow for a space sanctified by light (Davey 2000 :40-43).



Fig. 51



Fig. 52

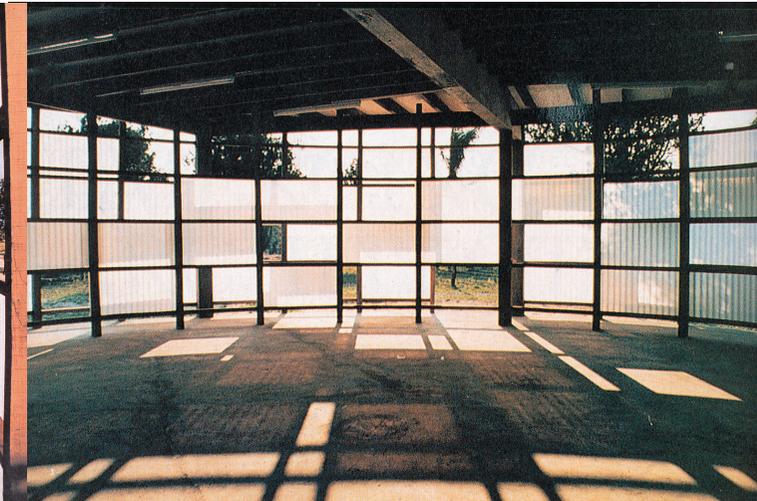
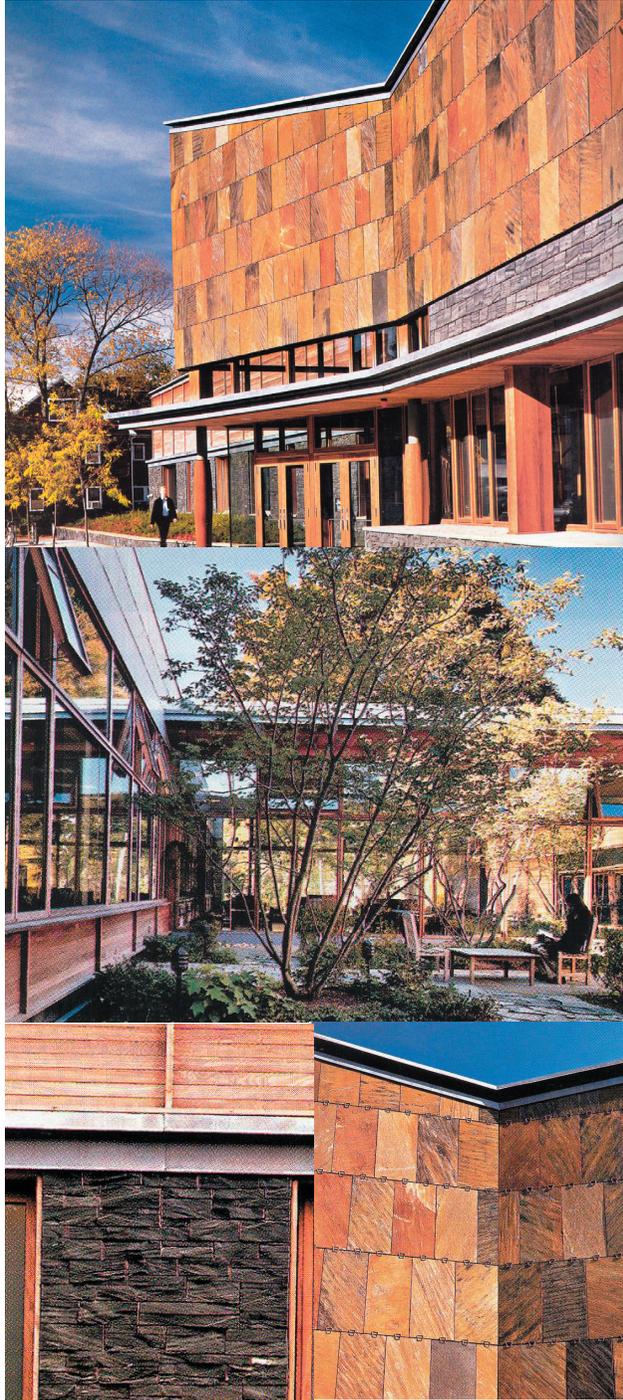


Fig. 53



Allston Library, Boston, USA
Machado and Silvetti

Fig 54: The entrance on the street front is accentuated by cracking the plane with a fragment jutting out to the street (Campbell 2002, p. 86-91)

Fig. 55: The childrens reading garden (Campbell 2002, p. 86-91)

Fig. 56-57: Textures and Materials
Left: Blue gray Vermont slate topped by wood
Right: Norwegian slate (Campbell 2002, p. 86-91)

The design of the library was done in collaboration with the local community. The neighbors were very much against what they called 'modern architecture' and any building which would over scale the surrounding houses. What the community got was a building sensitive to context without compromising on its own integrity. Due to efficiency considerations the library consists of only one floor, but a double volume is create on the street front. The street facade is broken in two, which reminds of the Boston two-family houses, and the modest wood frame buildings surrounding the library (Campbell 2002, p.86 -91) The relationship between the building and the street is very open. A thin patina of honey locust trees, and the textured, two-tone facade provides a barrier at certain points, while in other areas the streetscape is allowed to flow through to the building. The result is a building honest in function and its relationship to the outside. A large amount of glazing provide for interiors awash with light. The combination of light and planted courtyards establish a link with the natural environment, something which is not traditionally associated with libraries. In this case it provides for a pleasant place full of light, air and the serenity of waving green leaves.

Sandton Library and Civic Offices
GAPP Architects & Urban Designers

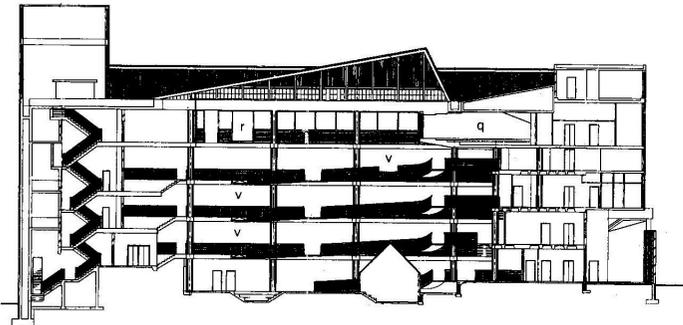
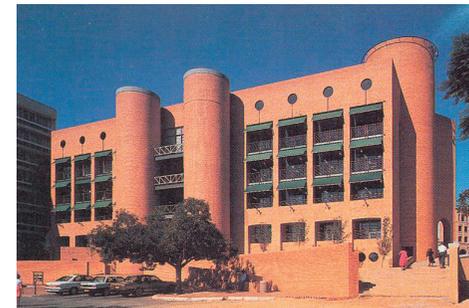
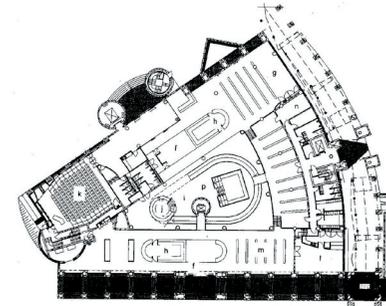
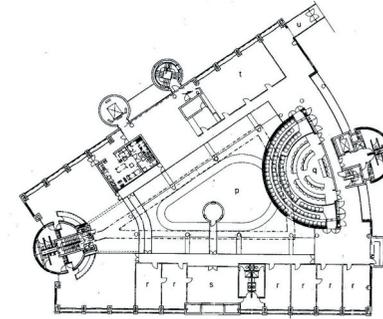
Strongly reminiscent of Khan, the facades exude a sense of civic duty and grandeur without overbearing the individual. The deep setbacks in the facade offer protection against the East West sun, as well as hinting at the light interior. The interior is planned around a central triangular court. The central court is glazed over to create an airy and light-filled space.

Careful attention to scale attributes to the success of the building. Quite intimate spaces such as reading rooms are inviting and intimate, while the public and council areas are more civic in scale (Slessor 1995, p50-54)



Images, from top
Fig. 58: West elevation overlooking the public square
Fig. 59: Fourth floor plan
Fig. 60: Ground floor plan

Left
Fig. 62: Longitudinal section



Conclusion and Application to Design

Reference to history and context provide for interesting and relevant architecture (Bopitikelo Community Centre) but recreating historic architecture, especially African methods in an urban context, is insensitive to the present. The memory of the past does create depth and meaning, however. African space making, with strong connections to the environment and well defined outdoor rooms are appropriate to present day urban application.

Sacred space and the emotional experience there off is achieved through enfolding the space in a number of layers, separating the inner sanctity from the outside world. This separation does not imply a complete break with the environment, but rather an implied separation. The approach to the inner sanctum is very important. Progression and redirection separates the sacred space from the mundane.

The separation of experience must not become a barrier to the flow of space. An effective combination between space continuity and space definition calls for an implied separation, without breaking the visual connection.

The emotional value of spaces needs consideration. A variety of spaces diverse in size, and scale will stimulate a greater variety in activities. The spaces needs to be interesting, sheltered and include indoor and outdoor spaces as well as transitional spaces.

Incorporating both indoor and outdoor spaces helps in establishing a sense of place. The connection with the outdoors creates pleasant indoor spaces. Even library spaces can be awash in natural light and have vistas of nature.

71 Meaning Perception and Sign ■

76 Place Making ■

79 Building as Organism ■

Design Discourse

Review of Design Considerations identified in Preceding Sections

Both the historical and current context, as well as the precedent studies clearly indicate the need for a facility which carries weight within the urban and community consciousness. The Facility plays an important role in establishing the community as well as providing hope and support. Like the historic church, the facility becomes a place of refuge. Its presence should therefore be both visible and inspiring. Location plays an important role, as does scale and verticality.

Communication is paramount to establishing this connection with the community. The architectural language used becomes the interface between the users and the facility. This language must be easily legible without using cultural and religious signs which might alienate users of different persuasions and background. The language must be able to express the complex, such as emotion, as well as the simple. Understanding the inherent meaning and emotional value contained within building elements helps in formulating a language which communicates on the sub-conscious level to people of different cultures, economic standings and religions, as required by inclusive design. Utilizing this understanding creates a sensory and emotional experience rich in meaning. This language includes scale, hierarchy, entry, light, procession and repetition as well as the more intangible emotional value created through the use of these elements.

Diversity and flexibility are closely related and connected. Both are vital in establishing a facility with value to the local community as well as increasing the facilities ability to adapt.

The connections between the facility and its environment is integral to the vitality of the centre, as well as in creating pleasant places with meaning and significance. These connections include those of the facility and the community, other community facilities within the area, the natural environment, and the history. It has been demonstrated that nothing exists in isolation and no project designed in such a manner has a hope of surviving. Understanding the links and different dynamics and processes will result in a facility able to interact and contribute to the community. The connection with the natural environment helps in establishing a sense of place and well-being. This interaction, when provided for in design increases the emotional and sensory experience as well as the health of the places created.

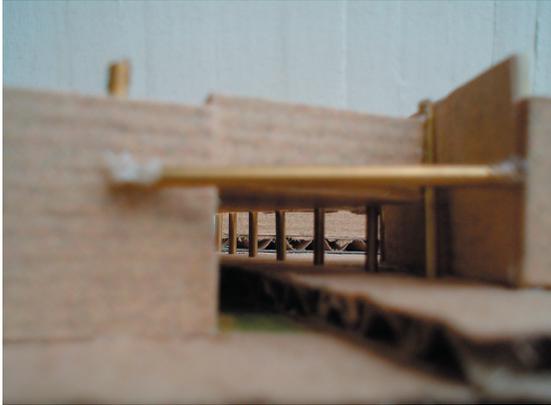


Fig. 63: Definition of southern entry point. The colonnade defines the journey inwards, as well as providing a visual boundary to the inside space

Creating meaning in architecture is achieved through using the building as a communication medium. Michael Graves divided this architectural language in the common, which is pragmatic and construction orientated, and the poetic, which express myths and ritual (Hale 2000, p. 152). The common language uses methods such as hierarchy, scale and grain to define spaces and volumes. Generally larger scales denote the public realm, while the private is individual in scale. In order to regulate the functioning of the building the common language is used to signify points of entry, circulation routes, connections and public and private space.

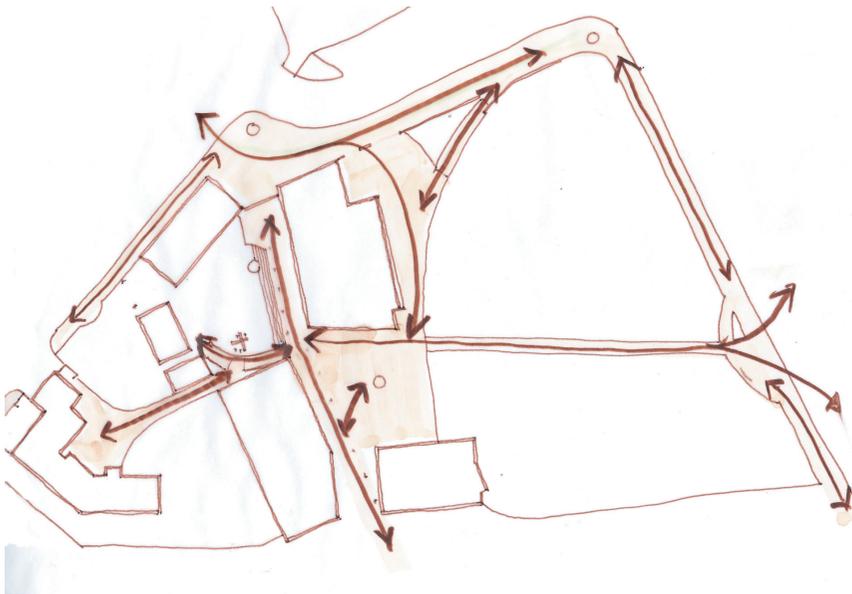


Fig 64: Articulation of circulation routes. Definition of entry points

Meaning in architecture can also be established by recognizing the intrinsic meaning incorporated in an element. A number of architectural elements, which are perceived as decorative, were the results of construction methods. Through the years these elements became imbued with meaning and symbolism (Hale 2000, p 93-94) Robert Venturi considers the exclusion of historic depth as the main contributor to the rift which exists between modern architecture and its user (Hale 2000, p. 145-146). The aim is to clearly communicate the construction systems and dynamics within the building. Clearly indicating elements such as column, beam and stairwell demystify the building, allowing for easy legibility. This understanding is based on a historic background. While it would be inappropriate to use a Doric column, a colonnade comprised of slender steel columns defines a public front and provides a feeling of significance and civic interaction.

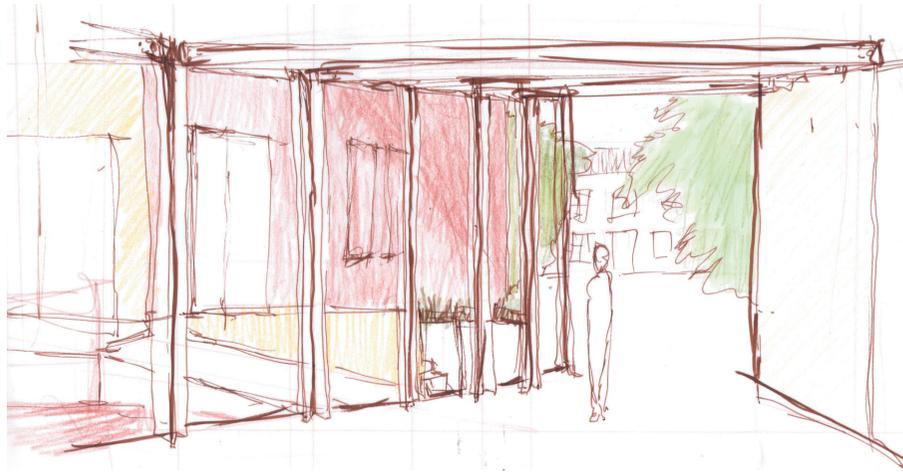


Fig 65: Colonnade as boundary between open public space and entrance to support centre

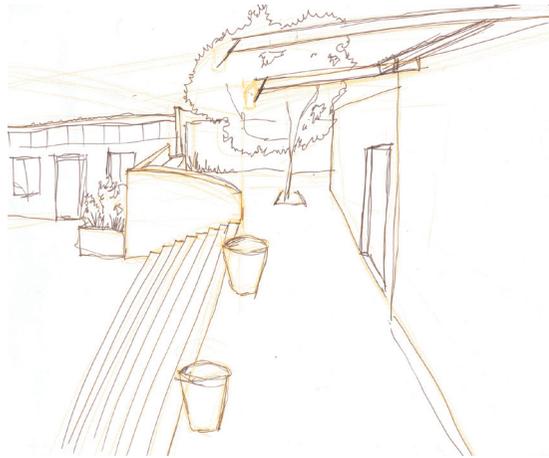


Fig 67: Interface between humans and the building is designed as a procession, with a number of layers and planes

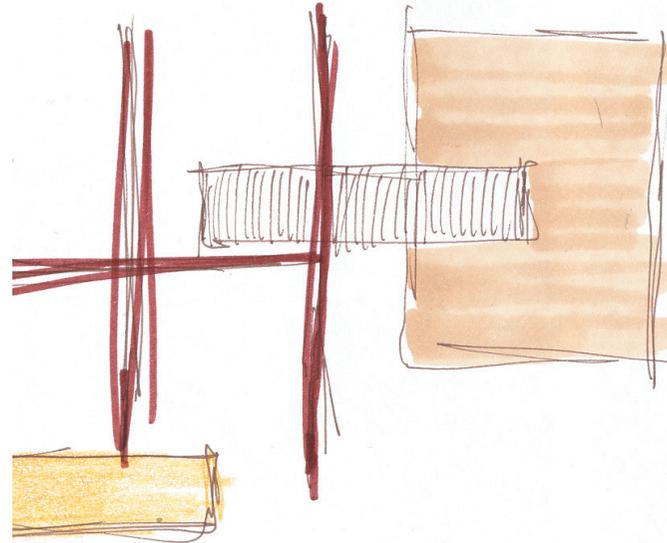
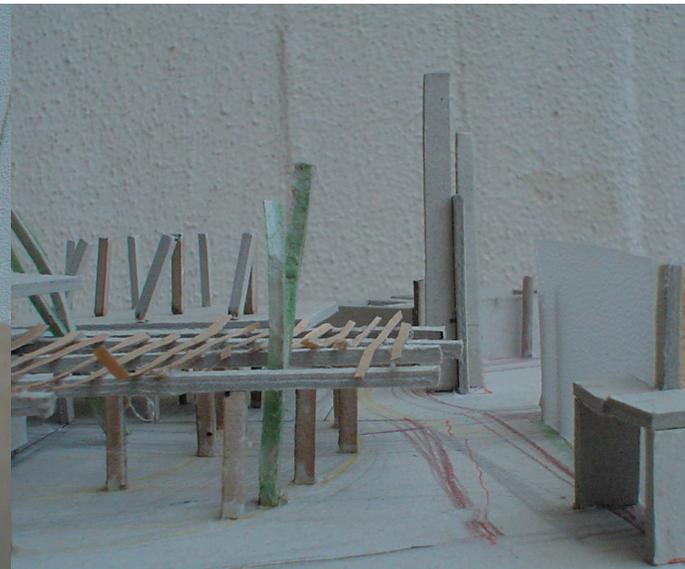
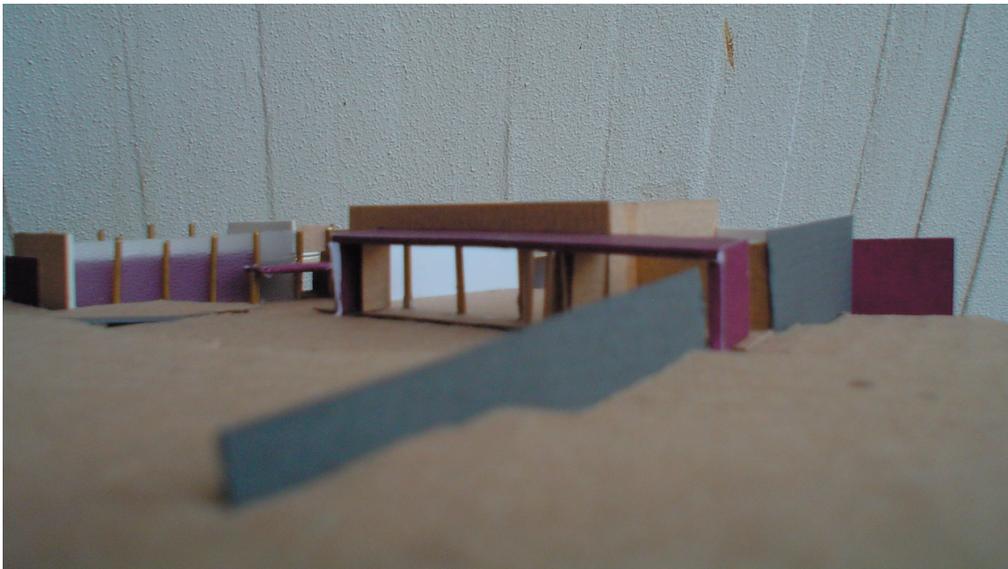


Fig 66: Rain water drainage illustrates the procession along the axis, continues the rhythm started by the colonnade, and defines the boundary between the courtyard and the interior of the church

Fig 68: The boundary between the parking and amphitheatre is definite and solid - boundaries of human interaction are multilayered and permeable

Fig 69: Early expression of procession and entry. The axis terminate visually with the water tower



Creating meaning in architecture is achieved through using the building as a communication medium. Michael Graves divided this architectural language in the common, which is pragmatic and construction orientated, and the poetic, which express myths and ritual (Hale 2000, p. 152). The common language uses methods such as hierarchy, scale and grain to define spaces and volumes. Generally larger scales denote the public realm, while the private is individual in scale. In order to regulate the functioning of the building the common language is used to signify points of entry, circulation routes, connections and public

The dualism between what is considered to be 'African' and 'Western' modes of place making has resulted in much conflict and confusion. Due to the enforcing of Western patterns by missionaries and colonialists, much has been lost. The strong affinity for the rectangle, grid and symmetry reflects much of the western world perception. Unfortunately this has become so ingrained in our urban settlements that to recreate the more organic 'African' pattern, would be a blunder akin to that of the Vlakfontein Rondavel scheme (discussed as a precedent study). But incorporating the memory provides depth and meaning. The play between the circle and the square has fascinated thinkers for a long time (ex: Leonardo da Vinci) The square speaks to us on the most basic level of our consciousness of security, order and man's mastery over nature. In contrast the circle express unity and eternity.

Fig. 70: Expression of the circle in surface finish. The transition between public and private is expressed in the grain of the pavers

Fig. 71: Early expression of the circle

Fig. 72: Gathering concept. The largest circle expresses the social responsibility of the community including all who travel through, live, work, visit in Lusaka.

Fig. 73: Early expression of circle. The use of the structural columns for this proved inefficient and costly

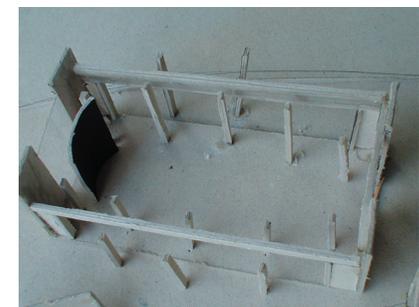
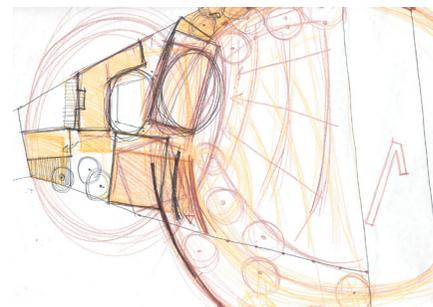
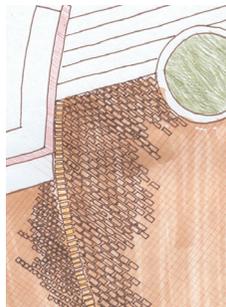




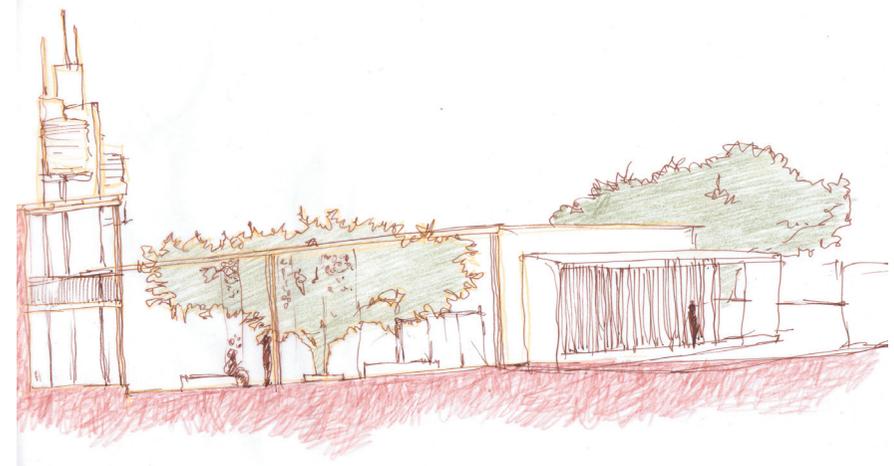
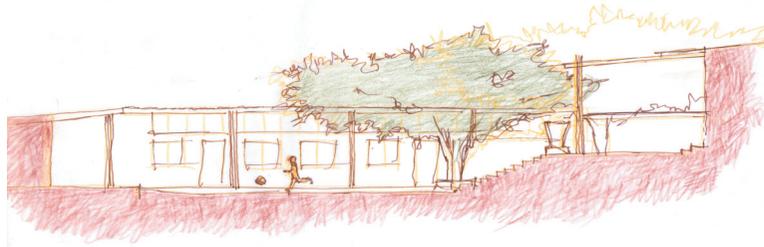
Fig. 74: Expression of gathering and unity within final design

From top right:

Fig 75 : Public scale of courtyard in front of support centre

Fig 76 : Smaller, more intimate scale of courtyard in front of Day Care Centre

Fig 77 : Size, gravitational weight, and hierarchy in scale

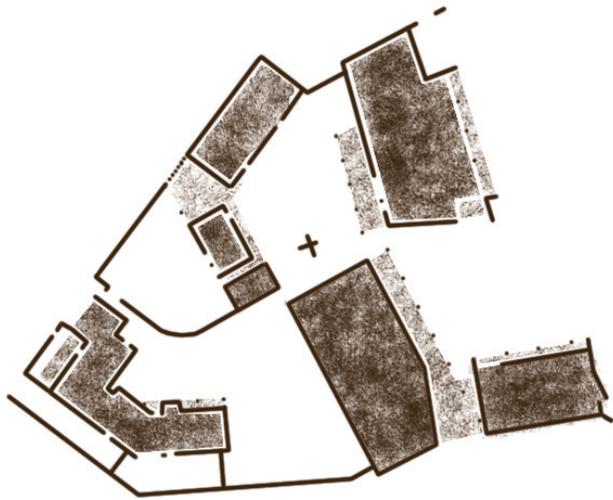


Place Making

Community facilities and spiritual centers are important components in the functioning of a community, especially in communities short on resources. The responsibility of the designer is thus to create a place with weight within the urban fabric. Utilizing the same laws of Physics which govern the theory of black holes, objects possessing gravitational mass create 'depressions' within the fabric of space, thus attracting smaller objects. The project is designed as a lodestone within the community, with the tower demarcating the gravitational center. The layout is thus arranged around this point, pulling and redirecting elements.

Establishing a presence within the community consciousness is supported by the location and visibility of the facility.

Balanced against creating a place with weight is the need to establish an appropriate scale. As a place of safety and support, the scale must never alienate or dominate, but rather comfort and shelter the individual. This is managed by spreading the project out in different components. En masse it establishes a presence within the community, but internally the spaces and different buildings are more human in scale and proportion.



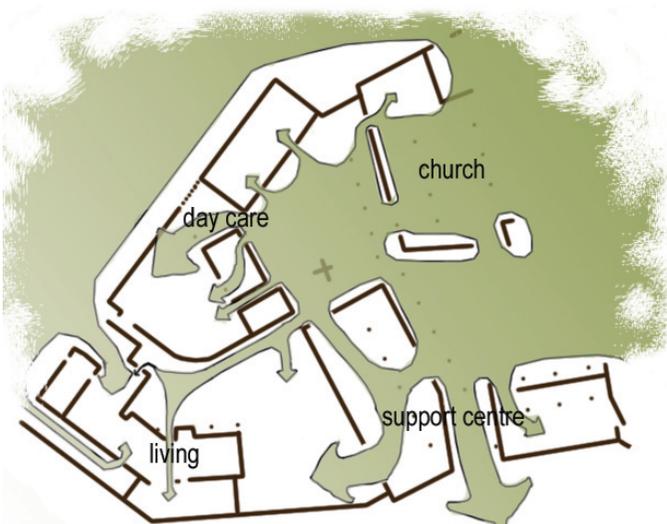
From top :
 Fig 78 : Inside, outside and transitional space
 Fig 79 : Space flow throughout the centre, indicating the hierarchy from public to private space.
 Fig 80 : The outside space flow through to the church space, with the screens and columns indicating the boundary, but not impeding the flow

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Internal and external connections are integral to place making. The reason being that we use relationships and external references to define ourselves. In a community where people never understand a situation, the project plays a role in establishing the network and the center with

One of the major challenges is the natural environment in part to our conditions.



University of Pretoria etd – Rheeder, A (2005)



University of Pretoria etd – Rheeder, A (2005)

Regarding the building as a living organism, as Habraken and Lucien Kroll propose(see page 20), requires a shift in architectural perceptions. No longer can a building be considered to be the end product of a process of design. For a building should, at any point in time, be seen as merely a phase in a process of change and, hopefully, growth. But this process will only occur when the users deem a building worthwhile of the effort and cost of redesign, maintenance and growth.

In order to facilitate this process, the facility was designed as a collection of separate structures, to allow greater flexibility in terms of change. Use of the facility was also designed to allow the greatest amount of activities, using the least amount of resources. As it is near impossible to predict all future uses, the design is as flexible as possible in terms of use. These diagrams illustrate the volume and diversity in activities which can take place.

No part of the design should be considered to be perfect and complete. The very nature of life requires a continuous re-evaluation and change. Perfection is a goal, not a reality. The design strive to correspond to this by using irregular shapes, broken planes and bent axis lines. The result is a vibrancy which is not found in the perfect geometry of right angles, parallel lines and perfect grids.



From top left to bottom right:
fig 81 to fig. 91 : use diagrams over time

Technical Resolution

In order to be able to illustrate the technical solutions incorporated in the design, it is important to hold the requirements set as a measuring tool next to the solution. Thus the baseline document is incorporated in the technical resolution document to integrate the different aspects of the design process so as to better illustrate the design.

Baseline

The aim of the baseline study is to establish criteria and guidelines for the design. The Sustainable Building Assessment Tool will be used as a guide to establish the relevant criteria. In broad terms the building has to be socially, economically and environmentally responsible.

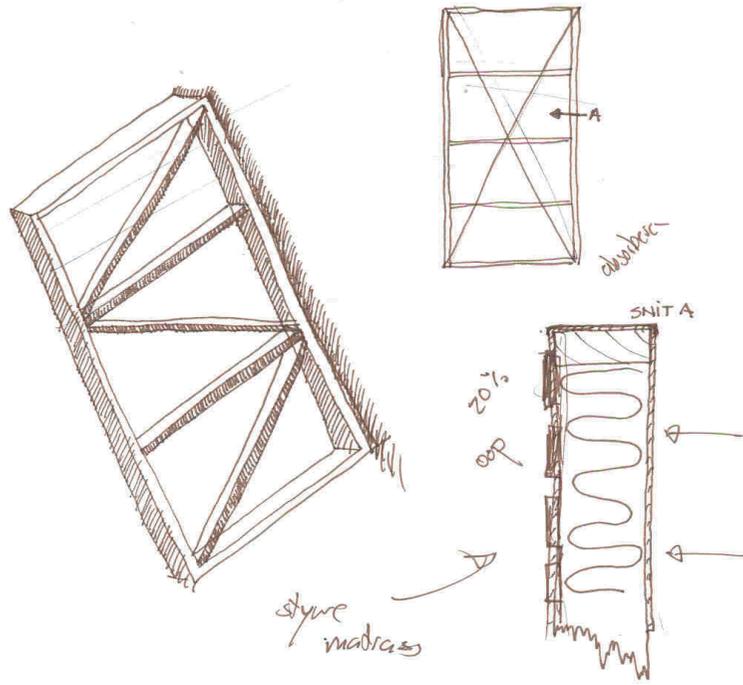


Fig 92 : sliding revolving panels with sound absorption

The project is situated on a busy node of Extension 22. With lots of current and proposed activities the sound level generated may become distracting. Mathane Avenue to the east is a major source of noise. The project responds to the situation by utilizing a number of different methods. The building is set back from the road to allow for the natural noise reduction offered by distance and a soft (planted) landscape. The sliding revolving panels of the Place of Meeting, which faces the road, are equipped with a sound absorbing material in the form of a stiff mattress.

The library space is separated from the busy open public space between it and the Place of Meeting by a trombe wall. Areas which require quiete, such as the study area and residential units are set to the back of the site, screened by buildings and bordering on the residential side of the scheme.

Occupant comfort

Optimal occupant comfort is dependent on the following factors: ventilation, lightning, temperature and sound. The cost consideration within community architecture requires the use of natural and passive systems as far as possible. Noise levels should be reduced to the minimum, especially sharp, constant or high-pitched noises. The site is situated on a slope and has views of the mountain and Mamelodi East. Utilizing these views will create a sense of place and greatly enhance the quality of the place.

A combination of fixed window panels with separate ventilation openings and movable window frames with a ventilation block grid as screen was utilized to meet the diverse requirements of the scheme. Such requirements include sun protection, safety, cost and economy of use.

In those places, where separated ventilation is provided, the openings utilize 190 x 190 mm concrete blocks with spaced openings and a movable wooden panel on the inside to allow individual control of specific indoor ventilation. The ventilation openings are situated at both the top and bottom portion of a wall to facilitate the flow of hot and cold air during the summer.

Specific calculations for each enclosed space ensured that all openings are of sufficient size for optimum ventilation and lightning.

Lig + Ventilasic

Kamoor = < 6,16 m²

∴ venster > 0,616 m²

ventilasic > 0,308 m²

□ = 0,023 m²

Stude sentrum = 116 m²

∴ venster openinge > 11,6 m²

ventilasic openinge > 5,8 m²

Vensters = 7 × 0,32 m² + 2 × 3 m²

= 2.24 + 6

= 8.24 m² + 0,32 + 3 m² = 11,56 m² ✓

Ventilasic = 2.24 + 3 + 3 = 8.24 m² ✓

Fig 93 : Calculations for ventilation and natural lighting openings



Fig 94: Main vehicular circulation within Lusaka.



Fig 95: Pedestrian circulation around the site

The facility is located off Mathane Avenue, which is the main vehicular artery. The site forms an integral part in the pedestrian circulation of the area, as it is an important link between those living on either side of Mathane Avenue. In terms of access the facility is thus ideally situated.

The whole of Lusaka is visible from the surrounding areas since it is located on the slopes of the Magaliesberg mountain range. Since the surrounding structures are mainly small single story buildings, the facility, which consists of larger, double storey buildings, stands out in the immediate surroundings. From further afield the water tower helps in establishing the centre in the consciousness of the community.

The only part of the site which is not accessible to a wheelchair is the first level of the orphanage, which contains sleeping arrangements for five children and a bathroom. These are duplicated on the ground floor. Access to the first floor of the library and support centre is obtained through the use of a wheelchair lift.

Inclusive Environments

Baseline social

Community Facilities should be accessible to the public. Locating the facility close to major transport and circulation routes increases accessibility. Visibility of the facility is important in terms of establishing a presence in the community. The facility should be designed to accommodate disabled persons in terms of their access, toilets and other amenities. Furniture and fittings must not impede the movements of users, especially the disabled. All spaces in the facility must be easily accessible. The internal layout and circulation must be easily read and used.

Access to Facilities

Easy access to facilities within a community decreases with the distances which people have to travel. Within a disadvantaged community facilities such as study centers and child care are vital. Lusaka is at a distinct disadvantage in terms of accessible community facilities. The model addresses the situation by incorporating a number of vital services and other services, such as counselors, computer and internet access and a day care center. Limited residential facilities for the use of destitute and vulnerable children will be provided as well as living facilities for a full time house-mother and pastor. Although the facility will not house a wide range of land-uses, such as housing commercial and retail, it does cover a wide spectrum of social and community activities. The latter will result in a place which has many functions and uses.



Fig 96 : Catering Student at the stanza Bopape Adult Training centre

Ultimately the whole project belongs to the local congregation. It is initiated and managed by the congregation. Thus the facility is owned and managed by members of the local community.

The community is involved throughout all the phases of the building, from inception to construction and management. The Stanza Bopape Training college (discussed as a precedent study) trains local community members in catering, welding and brick making. These trained individuals will be used for manufacturing the steel columns and concrete blocks. The kitchen will be out sourced to Stanza trained caterers.

The local community will further be involved in the construction phase . While these people may not possess a high level of skills, they will be employed for the infill structure. During the construction of the load bearing structure by a skilled contractor, the infill walls could be done by the local community members, since it requires only low level skills. Further community involvement will entail the use of mosaics and construction with recycled materials. Freedom of expression and individualism will enhance the level of human interaction with the building.

Participation and Control

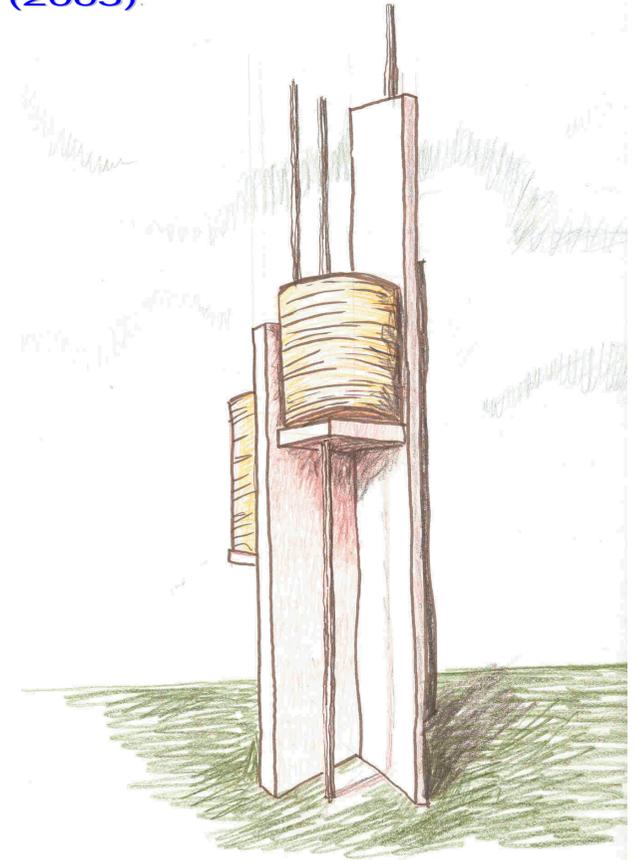
Community and individual participation and control in the project, is of great importance. A period of survey in the community will provide the opportunity for communal and individual input. This will provide for the maximum community and individual control in the building itself and it will increase the level of participation and ownership. The custodians of the building need to be trained in operating and maintaining all the processes installed. Participation of the community in the construction phase will increase the sense of ownership and engender a spirit of empowerment.

Individual control of the internal climate is facilitated through the use of adjustable ventilation openings. Ventilation and shade control within the Place of Meeting is facilitated through the use of revolving-sliding doors.

Education is one of the main activities supported by the facility. Small children are educated in things such as personal hygiene, nutrition, safety, and pre-school preparation in the day-care facility. The study centre, computer facility and library are education tools for higher level learners. Learning programs such as computer literacy courses will be provided.

The centre will play a role in educating the broader community on the issue of social responsibility as well. By actively engaging them in the plight of the children, the centre will promote awareness of the different issues, as well as establish a sense of responsibility within the broader community. The facility will also educate the user on issues relevant to building sustainability. By using such systems as passive heating and water collection within the centre, the user will be educated through use and through the visible functioning of these systems. The recycling of materials such as glass, paper, aluminum cans and organic waste is prominently displayed and accessible.

Fig 97 : Water tower



University of Pretoria etd – Rheeder, A (2005)

Recreation and play has direct implications on the health of an individual and the community. The project provides for both as well as a vegetable garden for nutritional needs and health education. The kitchen will provide both the children in the different programs, as well as staff and the community with nutritional meals. The facility is well ventilated and lighted by natural daylight. Strong connections with the outside are established with many areas functioning as transitional spaces between indoors and outdoors. Many spaces, including the meeting hall, day-care facility and after school facility have direct access to the outside.

Health

Part of the support of the community and the child is to create areas where less privileged people can utilize necessary facilities and services which they are unable to afford. The health of the community can be greatly increased by providing exercise and recreation areas, as well as providing health related services such as a nurse and a food scheme. Growing vegetables for supplementing the diet of undernourished kids also plays a role in educating people on the role of adequate nutrition. Creating a healthy environment for the kids and other users is paramount. Buildings should therefore be well ventilated and dry.

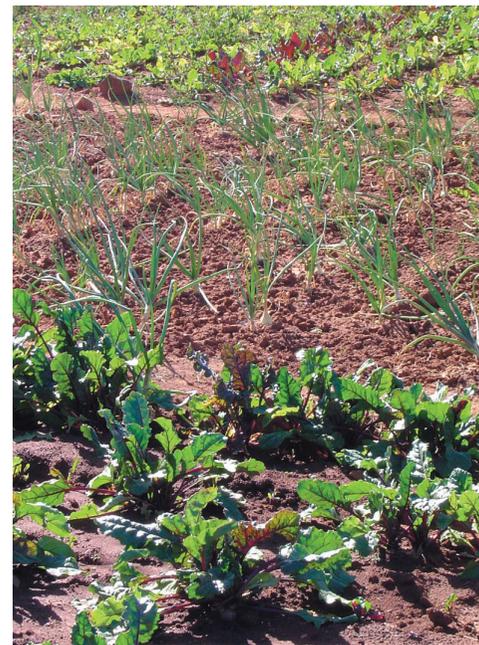


Fig 98 : Urban agriculture at Stanza Bopape training centre

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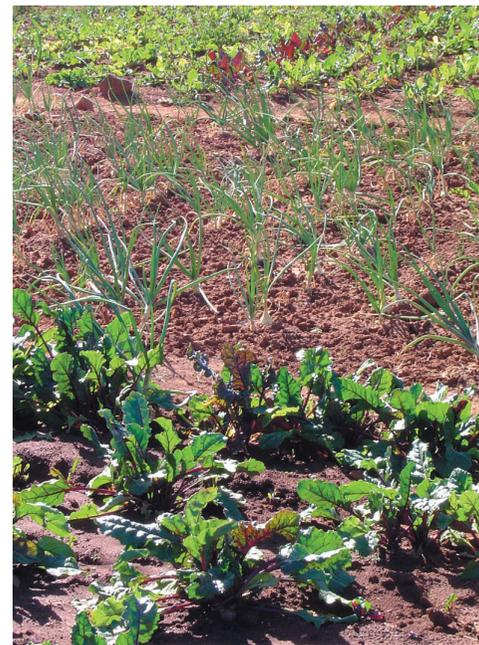


Fig 98 : Urban agriculture at Stanza Bopape training centre

The safety of children within the facility is achieved by exercising stringent control over access to such areas as the day-care facility and study area. The Living facility is only accessible through the house mother's unit or through the main entrance. Access to the day-care centre is only possible through the main entrance, while access to the play area is through the day care building only. Building edges which separate 'safe' areas from public areas are impermeable and definite. Thus the 'safe' areas are isolated and contained. Traumatized children need an environment where they can function free from the constraints and influence of the general public. These spaces do not contain hidden nooks, all parts are easily visible to a teacher or caregiver. The different safe areas are separated by clear boundaries. Thus the older children from the after school centre do not have access to the smaller children from the day care centre. The children from the orphanage also have their own separate play area to create a sense of belonging and safety. General safety systems include strong boundary edges, controlled access and protected openings.

Safety

In South Africa safety is of extreme importance, especially when it relates to the well being of children. The children facilities must all be well protected with restricted access. The different components of the facilities, such as a day-care center and after school center should be separate, because older children might be too rough and can hurt smaller kids. National Building Standards should be implemented in all aspects to ensure a safe building.

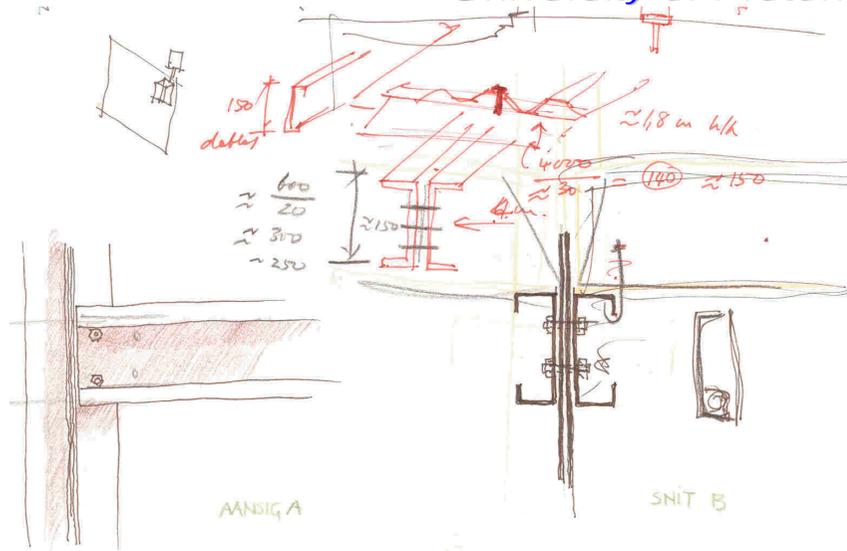


Fig 99 : Design concept sketches for steel structure.

As a rule community facilities do not function with economic gain as primary goal. Through the outsourcing of certain facilities such as the computer lab and through employment of cleaners, teachers, cooks, secretarial staff and by involving the community in the construction process, the centre will boost the local economy. The number of people drawn by the centre as well as the activities will start to generate economic spins-offs within the community. The centre could become an economic node, with small businesses springing up in close proximity. Construction contracts which will be awarded to the local community and local contractors include the manufacture of the steel structural elements, manufacture of the concrete blocks, mosaics and the construction of the concrete block infill walls,

Local Economy

According to Dewar and Uytendobogart, support of the local economy is very important in building a local community.

Utilizing local contractors, building materials and manufactured components will support the local economy and broaden the skills base. In a community facility the ownership which the community feel towards the building also increases if they are part of the process of construction. Using people from the community for maintenance and other services such as cleaning further creates jobs and prosperity inside the community. The transfer of skills is very important and needs to be facilitated.

Materials and finishes are robust and relatively maintenance free. Walls are finished with a pigmented plaster, which negates the need for future repainting. Security is dealt with in the design phase. Elements such as a single entrance and small and protected openings on outside facades combined with high enclosure walls reduce the need for added security systems.

The water catchment and reuse-system allows for a reduction in water bills, while the on site growing of vegetables decreases the amount spent on provisions.

Ongoing Cost

Community Buildings rarely have a huge budget for maintenance and other ongoing costs. Therefore the building and other structures need to be constructed with materials requiring low maintenance and cleaning.

It should not be necessary to add further security features later, although security is supposed to be dealt with during the initial design.

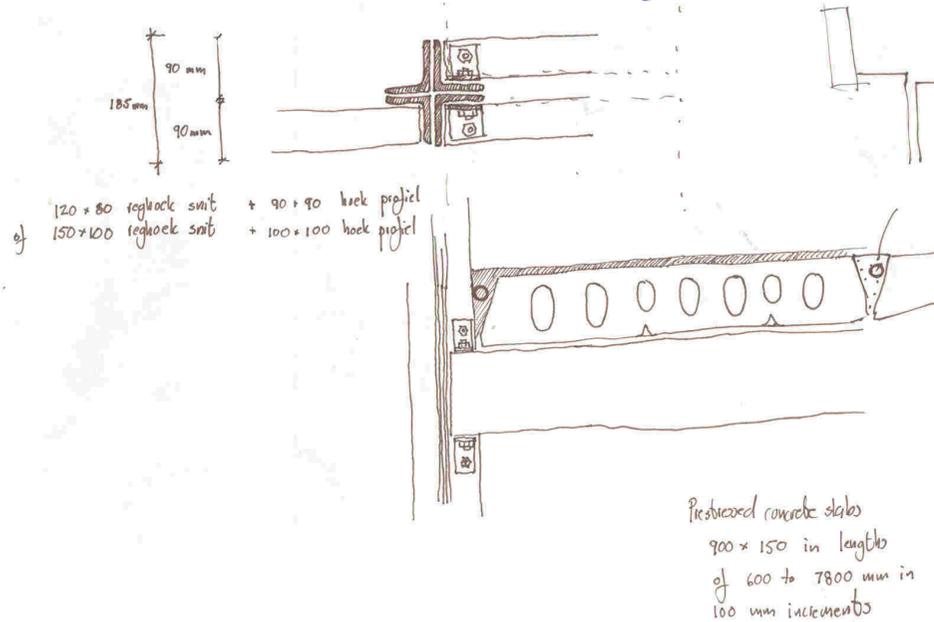
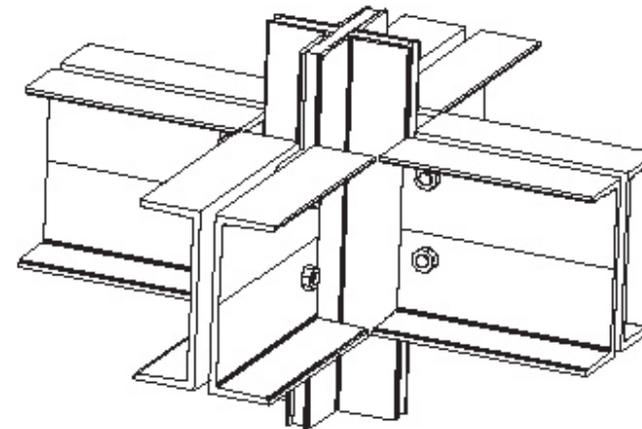


Fig 100 : Structural system indicating columns and slabs

One of the major concerns in this scheme namely flexibility, is addressed in a number of different aspects and systems. The building structure chosen is an support and in fill system consisting of a load bearing steel structure, on a modular grid, with concrete block in fill. One of the main reasons for choosing steel is its flexibility in terms of reuse and redesign. This concept is also applied in first hand mezzanine floor design which consist of prefabricate concrete slabs. Floating concrete slabs are used for foundations to allow for a level load bearing ground floor, which can accommodate a change in loads which might result from redesign.

Adaptability and Flexibility

Internal layouts need to be as flexible as possible and allow the greatest freedom in spatial flexibility were possible. Services like the wet core need to be grouped together, with easy access and maintenance. Electronic and technology services need to be designed for easy maintenance and replacement. Placement of structures on site must allow for extensions to the planned structure



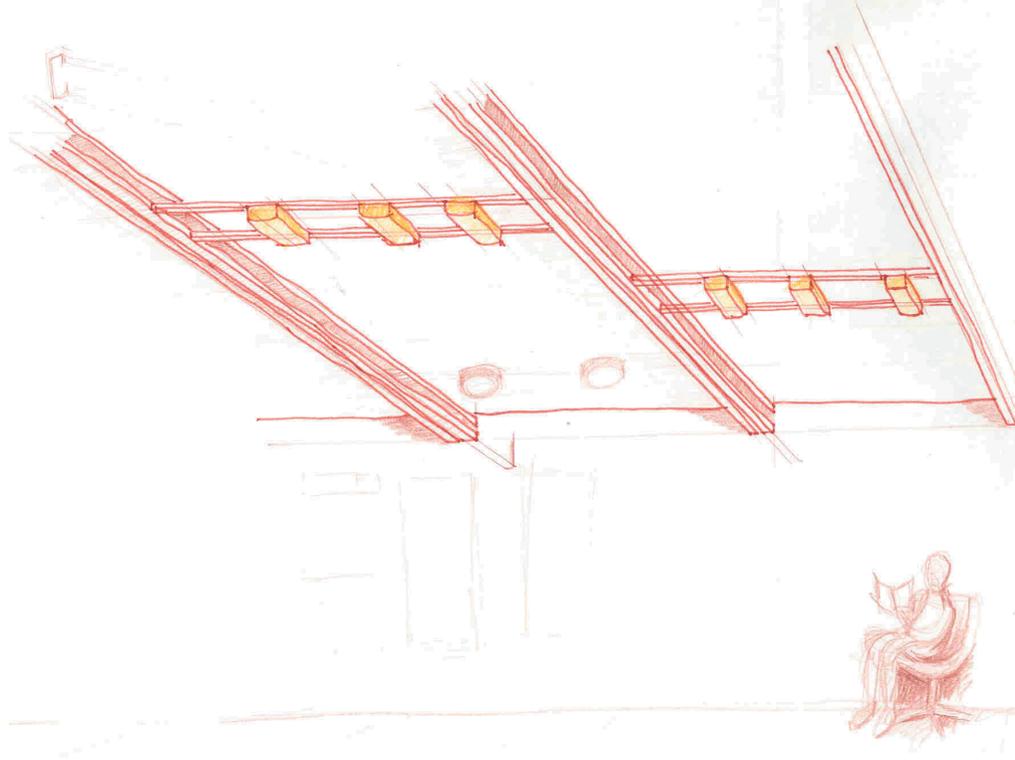
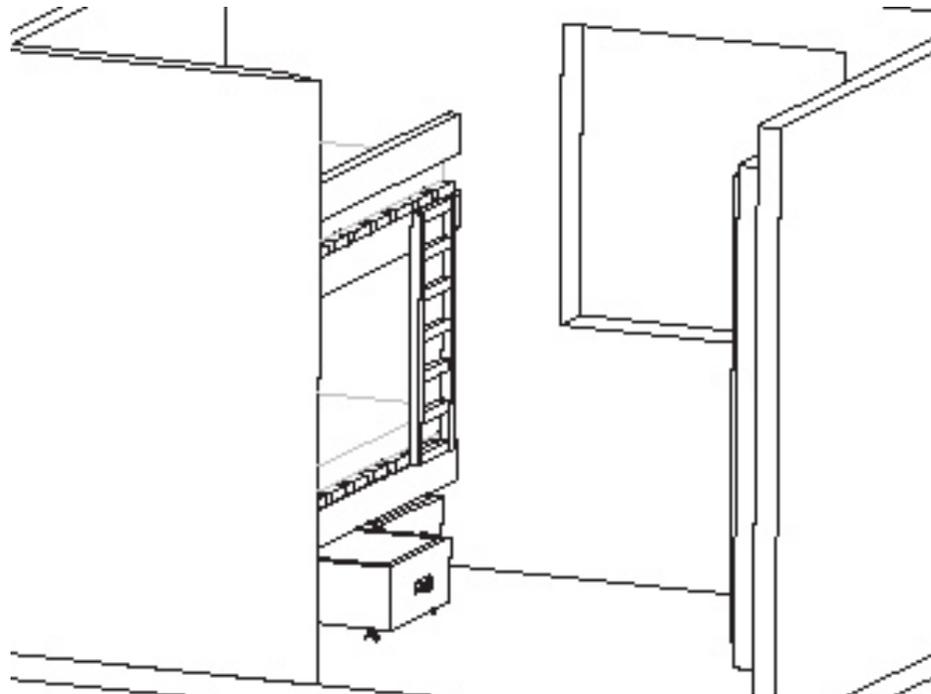


Fig 101 : Artificial lighting system

The electrical system, with special regards to artificial lightning allows for easy access and movement.

The use of spaces was carefully designed to allow for the maximum amount of flexibility in use. The spaces are able to accommodate different functions, which ensures a greater use factor. Storage is a key aspect and it has been considered in the easy and viable reuse of rooms. The main hall, which will accommodate several uses, provides substantial storage area and will hold all loose furniture such as chairs and tables. The vestry, which can be used as an additional class room for the Sunday School or day care contains an alcove for the storage of the vestry furniture, as well as enough cupboard space for both the church and day care class.

The structures are grouped with large open areas in between to allow for extension and future redesign.



The initial capital cost is reduced by utilizing low cost materials such as locally made concrete blocks and by using local labor. The centre is designed to be developed in multiple phases. This allows the managing body to build as funds become available, or as the need increases.

Cost is also reduced by using built in furniture in the orphanage. Clever design can minimize the floor space utilized, without compromising the integrity of the places created. Storage is an important factor. The design for the orphanage bedrooms include storage space underneath the beds. There are no desks in these rooms as it would be a repetition of what is provided in the study centre.

Capital Cost

It is not possible to use an existing structure, as there are almost no structures of permanent construction available. Most houses are temporary shelters constructed of sheet metal, wood and other diverse materials. A few institutions and organizations will share the initial cost. The running cost of the facility will also be shared and generated through different institutions.

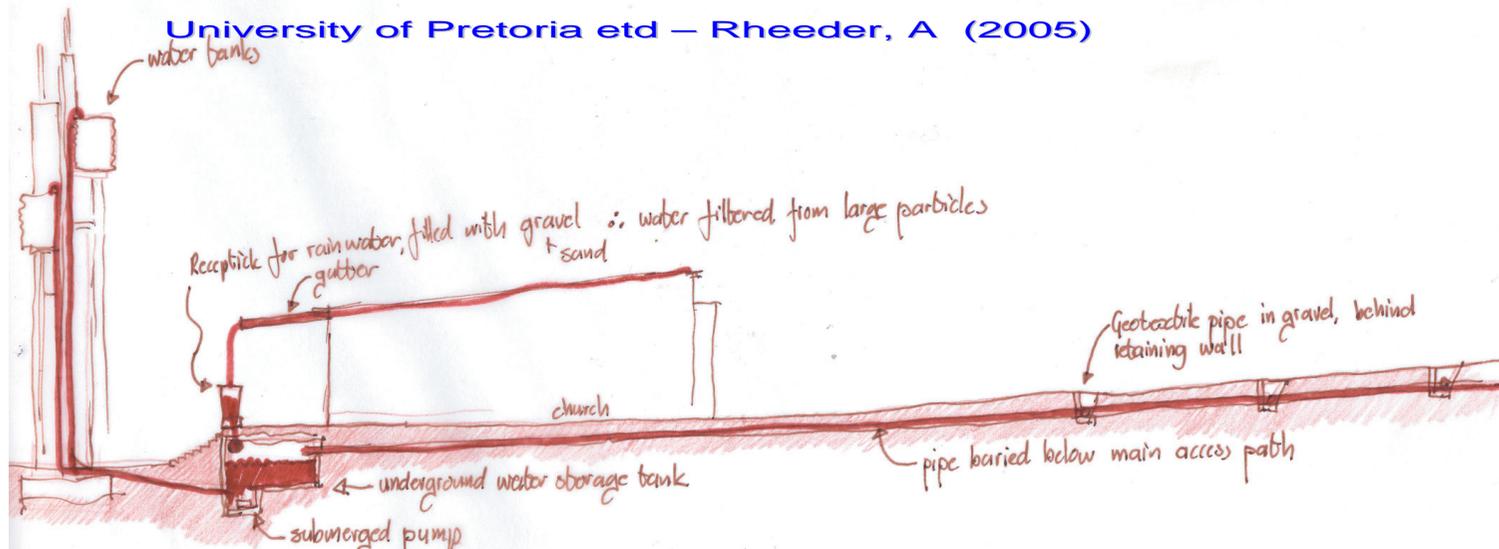


Fig 102 : Water tower.

Water

The site is situated in a water catchments area that drains into a nearby stream and wetland system. It is imperative to reduce the amount of pollutants that end up in the runoff and groundwater. The amount of runoff on site should be contained where possible for future use. The amount of water obtained from the municipality should be reduced by using all alternative sources such as rainwater, water efficient appliances, and by recycling on site where possible.

Water is one of the most precious natural commodities. Current projections indicate that it will be more so in future, it will only become more scarce. The project allows for rainwater to be collected and stored for irrigation use. The storage becomes a visual signature of the scheme to promote awareness of conservation of scarce resources. Elevating the water storage tanks provides a water pressure of 1.5 bar, which is sufficient for irrigation of the gardens through irrigation ditches.

A large amount of water is allowed to seep down to the water table, for the natural catchment area to be supported as a consideration of the people down stream. Through this system the amount of storm water run-off is reduced to a minimum, which both decreases the load on local infrastructure and increases the amount of water which joins the water table. Capturing water during surplus times, such as rainstorms, and by releasing the water during dry times by irrigation of gardens and vegetable patches, helps in maximizing the amount of water that eventually reaches the stream, river and dams.

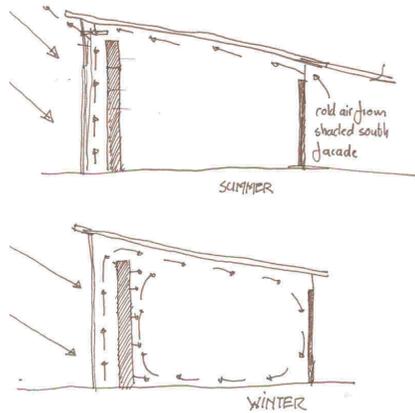


Fig 103 : Trombe wall system

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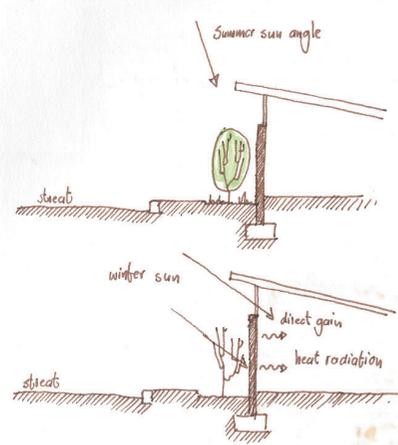


Fig 104 : Passive heating of day care centre

Due to functional and spacial requirements, orientation and location, many of the buildings face east/west. This complicates matters in terms of sun protection during the summer. The orientation is a bonus though when utilized for direct heat gain during the winter. Adjustable elements which allow for this are incorporated into the design. One such example is the revolving, sliding doors on the eastern facade of the meeting hall. A trombe wall is used to raise the indoor winter temperature of the library . Deciduous vegetation is used to screen walls during the summer . These walls act as heating panels during the winter. Being dark in color these walls absorb heat which is radiated towards the interior. The northern facade of the child care centre is an example of this system. Design solutions for the utilization of natural lightning and ventilation are discussed under the occupant comfort section of this document.

Energy

All renewable sources of energy available to the site should be studied to determine if any would be feasible to the project before returning to conventional methods if all else fails. Using energy efficient appliances and equipment will reduce the amount of energy needed. The design should be naturally ventilated and thermally controlled to reduce the amount of energy needed for occupant comfort levels.

Utilizing the maximum of natural light will also reduce energy levels. Once again it is important to have easy access to public transport in order to reduce energy for economic and environmental reasons.

Building waste is reduced by using prefabricated elements and recyclable materials such as steel.

Building rubble such as concrete blocks could be broken up and used as a fill for the underground water collection system.

Organic waste from the kitchen is collected for a compost heap, managed and used by the urban agriculture program. Containers for recyclable materials such as glass, paper and aluminum cans are prominently displayed at the entrance to increase public awareness of recycling, but also to facilitate easy use. The income generated through recycling augments the budget of the centre.

Waste

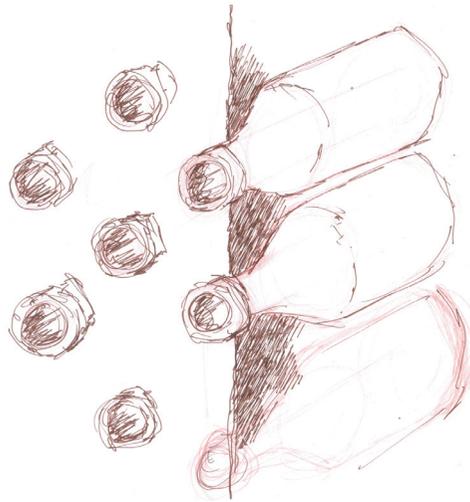
Only non-hazardous organic waste should be utilized on site. Recyclable waste containers, including glass and paper, will be in visible places to promote and encourage recycling.

University of Pretoria etd – Rheeder, A (2005)

See the design solutions as discussed under the energy and occupant comfort sections of this document.

Air

Especially during the winter months cheap sources of heat, including coal, is responsible for a large amount of air pollution. This project will explore alternative methods of heating which does not induce as much air pollution.



Materials and components

Baseline Environmental

The project will strive to locate construction materials that are produced locally, with the least cost to the environment. Elements like photo voltaic sun panels cost more in energy and materials during manufacture, than the little energy that will be gained during the operation of the panel. Thus while they may appear environmental friendly, the embodied energy in the panel has a large impact on the natural environment. It is further important to consider the life span of the material in terms of recycling, reuse and maintenance.

Finishes are integral to the creation of pleasant viable places. The use of pigmented plaster in vibrant earth tones will create a base of warmth. Inlaying mosaic patterns in bright primary colors will increase the tactile and visual experience as well as allowing individual expression and communication. The use of glass bottles in some areas of construction will educate people on the different ways of recycling materials, will provide an interesting light source to the interior of the building, and form a pleasing decorative pattern on the outside walls.

The history of people's parks (discussed in the historic context) was based on a desire to remove rubbish, and to beautify the area's. This practice was lost during the struggle area, as the security forces targeted the parks due to them being named after resistance heroes. This practice will be reintroduced to Mamelodi, by using elements which is traditionally considered to be refuse, like used glass bottles, and broken pottery, as decoration. Sculptures can be created from refuse, and placed in the public open space. These sculptures will become elements of cultural and social expression, contributing to a sense of place and ownership.

From top;

Fig 105 : Mosaic set in pigmented plaster

Fig. 106 : wall constructed from glass bottles

Fig. 107 : Wooden slat screen

The City of Tshwane Metropolitan Municipality recently repealed the by-laws for Creches-cum-Nursery School (of 1973) and the by-laws for Pre-Schools institutions of 1992 with Notice 433/2004, By-laws for Child Care Services viz.

The new by-laws are more elemental than the previous laws. A set of basic requirements are set in terms of the size of class rooms and outdoor play areas, toilets and kitchen areas. A very basic guideline in terms of safety is provided, which mainly requires controlled access, continuous supervision and the separation of children younger than 3 from older kids. Individual storage for children and staff, and a sickroom with a first aid kit is also required. The requirements regarding the after school facility is much the same. Some of these facilities are combined with an office, staff toilet, store room, kitchen and sick room servicing both the day-care facility and the after school centre.

Compliance

The project includes a wide range of activities such as a day-care centre and library, of which the form and function are governed by external bodies and bylaws. Compliance to these requirements is essential in terms of registering the facility, applying for subsidies and leasing the space to the Municipality.

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