MABOPANE HERBAL CENTRE

Healing misconceptions of traditional herbal medicine

Jacques R. Jordaan   University of Pretoria   2014

Submitted in part fulfilment
of the requirements for
the degree of Magister of Architecture,
M.Arch(Prof) to the Faculty
of Engineering, Built Environment
and Information Technology.

University of Pretoria

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Studio Master: Dr Arthur Barker

Project Summary

Programme:
Centre for indigenous herbal medicine

Site description:
SW of Mabopane train station, between Central city shopping centre and the railroad bordering on the cemetery.

Site location:
Mabopane service road connection

Address:
c/o of M17 road leading to the Mabopane station and bus route.

GPS Coordinates:
-25.498343, 28.087132

Client:
(WHO) World Health Orgaization

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**Jacques Jordaan
November 2014**

Abstract

This dissertation explores the unresolved differences between the western medical disciplines and the indigenous natural and human based health professionals. Worldwide the contribution of indigenous medicine is not only respected but is becoming more and more part of the mainstream medical fraternity.

In order to develop the indigenous medicine profession the symbiotic relationship between natural ingredients and scientific chemical medicine needed to be explored and investigated. This exploration created a number of challenges which needed to be investigated in terms of its philosophical base as well as In terms of its spatial resolution.

The further complexity is the fact that a world class facility needed to be established within a developing urban context which is by nature informal, insecure with a lack of certainty.

The urban context for this project did not only have a high level of neglect and care it also demonstrated a number of environmental and social issues. In order to resolve these apparent issues in the discipline of health a number of precedents and philosophical approaches had to be investigated. The resolution of this project lies in the fact that each discipline and each cultural expression is respected in its own right.

However the interrelationship is organizationally, spatially and environmentally resolved based on the dialectic materialism which created an idea base and point of departure , which could resolve the conflict of interest and still create a symbiotic relationship without destroying the quality, character and value adding characteristics of the indigenous medical profession. This centre not only addressed the organizational aspects of the research component of indigenous medicine but also created an opportunity for indigenous medicine practitioners to have a "home" which creates regulatory environments and a sense of ownership.

The brief

WORLD HEALTH ORGANISATION, 345 Round the Corner Ave ,GENEVA SWITZERLAND, 234-645-98

Our ref: 4657-865-2014
2014-01-12

The Director
JACQUES JORDAAN ARCHITECTS
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Attention: Mr Jacques Jordaan

CENTRE FOR HERBAL MEDICINE, MABOPANE

Further to our recent discussions and your proposal dated 2013-03-13, we hereby confirm your appointment as Architects for the project above.

As the project is of global significance, the WORLD HEALTH ORGANISATION (WHO) has obtained funding from the WORLD BANK with a budget limit of $24 million (excl. VAT). Please ensure that the procedures and cost control mechanism of the World Bank is closely followed as per the attached documentation.

The architectural fees will be based on the standard world bank consultant remuneration fee structure for international specialist consultants (attached). Your appointment will be based on the Standard Appointment Agreement as provided by the WHO. The documents will be furthered to you in due course for signing.

The site as identified before, will be leased from the City of Tshwane as per the Heads of Agreement.

As discussed, we understand the brief and approach to include the following:

- x Laboratories to do primary research and documentation, as well as storage of herbal medicine specimens.
- x Multifunctional greenhouse to grow new types of herbal specimens.
- x Offices for administration of herbal community and boardrooms as required based on your research.
- x Lecture rooms with a capacity as per schedule dated May 2007.
- x Ensure interface with the urban environment and local community.
- x Stalls for herbal medicine practitioners are to be included.
- x Provide enough parking for future phases as per the Municipal requirements
- x Conference and auditorium facility of 140 capacity that should be able to operate as a stand-alone unit.

Please provide us with an Acceptance Letter, Program and deadline for the Research Report as soon as possible.
Yours faithfully

Dr. I A M Verygood
Projects Director Africa
WORLD HEALTH ORGANISATION

CHAPTER __ 1

Problem and its Setting

Intention

Premise

Delimitation of study and position

Definition of terms

Assumptions

The problem and it's setting

Space is a setting with certain needs. The setting can be spatial or a relationship between the people. The setting can only become a place when one adds meaning to it. Mabopane's urban space is a setting but there is nothing happening, place has to have meaning and the aspects one can recognize from it is the spirit of place (Luke,2001). It's like walking into a kitchen and smelling the food, the smell is "the spirit of place", and the walls which surround the kitchen are the setting.

The African approach to spatial arrangement is one of Ubuntu meaning "I am because you are" whereas the western approach is well described by Decart as being "I think therefore I am". The "I am" in African sense is that of being in a relationship, how does the one make the other feel. The " I think" in western terms is a rational approach, out of rational comes science, out of science comes chemistry and out of chemistry comes medicine. Thus the western approach to being healthy has gone through this rational process to get to medicine to better the health of others. The African approach of "You are" means to relate or have a relationship with someone towards a problem and solution which is a communal mindset other than the individualistic mindset of the western approach.

Africa: The more people the more the things.

Western: The more I am the more the things.

Africa: Sum total of individuals

Western: Individuals in a sum total.

Intention

The intention is to create a Centre for Indigenous Herbal Medicine in Mabopane. This Centre needs to be accessible to the people in need of services to sustain a healthy lifestyle. To achieve this, the Centre needs to further analyse, develop and structure the herbal medicine community. The intention is thus to understand and define the principles that will guide the design of a facility that will be a global home for indigenous herbal medicine in order to serve the people in the developing world. This need was identified by the WORLD HEALTH ORGANISATION as a critical program to further the development of the discipline of indigenous medicine to serve the world and to look for alternative affordable and effective health solutions.
See attached letter of appointment.
Through the use of a scientific research facility which tests and analyses traditional herbal medicine, traditional healing can be accredited and thus made part of the mainstream medicine world which will in turn better the reputation and reliability of traditional herbal healers. Both traditional healers and laboratories could make use of peri-urban agriculture for distribution and testing of indigenous herbs. Thus this Centre will strive to cater for the traditional herbal healer and the organisation that regulates them.

Premise

It is argued that the lack of recognition of indigenous herbal medicine as a vital social institution to indigenous people is the cause of the lack of facilities and development of the science. Furthermore the lack of understanding of traditional herbal medicine which is an integral part of our cultural and scientific institutions can also be seen as a stumbling block, which restricts provision of such facilities to the people. Informal facilities are naturally placed strategically to serve the people by the traditional herbal healers. This must be taken into account to ensure that the SCIENCE of medicine and the LOCAL KOWLEDGE are both respected and developed to create appropriate solutions to our health problems globally.

Delimitation of the study and position

The proposed centre for indigenous medicine is a human need and requirement and is not a system provision.

The intention is not to incorporate or support the realms of black magic, illegal activities, body mutilation or any related subject but to study the ecological elements that encompass indigenous medicine and approached from a holistic standpoint.

The intent is also not to replace traditional herbal medicine but to enhance it and make it more accessible. Not to de-humanize traditional medicine with science. Not to make valued judgment of the validity or usefulness of traditional healing and not create a mechanism to extract the components of the holistic medicine and thereby creating single solution medicine.

Definition of terms

Centre for **Indigenous** **Medicine** in **Mabopane**

Intent

Centre
- Public
- Serves public
- Civic space

Decription: **cen·tre**
cen·tred, cen·tring. noun, verb

Noun:
1. A place at which some **specified activity** is concentrated.

2. A person or thing that is a **focus of interest.**

3. Geometry: **The point**, axis, or pivot about which a body rotates.

Verb:
To focus or bring together: to centre one's thoughts.

Indigenous
- Cultural
- Local
- Human
- Ethnic
- Of the place

Decription : **in·dig·e·nous**
[in-dij-uh-nuh s].Adjective

Adjective:
1. Originating in and characteristic of a particular region or country; native.

2. Innate; inherent; natural

Medicine
- Care
- Heal
- Restore
- Revitalize
- Bring to better state

Decription : **med·i·cine**
[med-uh-sin].Noun

Noun:
.1. Any substance or substances used in treating disease or illness; medicament; remedy.

2. The art or science of restoring or preserving health or due physical condition, as by means of drugs, surgical operations or appliances.

Mabopane

S.W.O.C

Strengths:
- High energy
- Ability to adapt
- Self regulating
- Strong social network
- Sene of community
- Ecological

Weaknesses:
- Survival mode
- Unsafe
- Lack of connectivity
- Fragile
- Isufiecient infrastructure
- Not analyzed contectually

Oppertunities:
- Enablingthe public
- Creating linkages
- Introducing resilience
- Formalizing the existing
- Creating civic space
- Contextual approach
- Reinforcing the existing

Constraints:
- Lack of knowledge
- cultural indifferences
- Ownership boundries
- Site conditions
- Supressde by western/ modern ideologies

Definition of terms

This centre is a place at which some **specified activity** is concentrated serving the public creating meaningful civic space.

Of the place, contextual to a certain region and culturally supported through heritage aspects.

Discovery, research, development of local substances used in treating disease or illness.

Mabopane is a highly public place which is unstructured, organi, survivalist in nature and in need of enabling spaces.

Assumptions

- The assumption is made that Mabopane will be allowed to develop to its full urban core potential.
- Free market economy will prevail but will also allow SMME's to thrive.
- Indigenous medicine will be fully integrated into the healthcare system of South Africa and will be given the same status as private and public healthcare facilities.
- The formalization and exposure of the indigenous healthcare system will not destroy the integrity of the service provided to the people or their perception of it.
- The centre for indigenous medicine will become part of a bigger system which will be supported and acknowledged by the already existing indigenous healers in the community; as a result they will be regulated and thus will strive to provide better services creating an ethical line rejecting malpractice.
- I am not part of that indigenous system, I am an observer not a participant, I can intervene but not interfere.

CHAPTER __2

Context

Urban Legacy ofMabopane
Mabopane was proclaimed in
1963 as a black-only residential settlement
by the then Transvaal administration.
The settlement is situated NW of Pretoria and fall
within the Tshwane municipal boundary.
This town is a perfect example of the way in which
Apartheid functioned, moving the majority of black
South Africans to the peripheries of the city.

Mabopaneuse to be situated in Bophuthatswane a neighbouring state before it was included in the then Transvaal province in 1962. It used to be the border which crosses over tothe town of Soshanguve which consists of Sotho, Shangaan, Nguni and Vendapeople, hence the name.

The two townsMabopane and Shoshanguve was divide by using a railway line which is strangely still acting out its original function even thou the borders have been taken down. This separation of the two towns has impacted the city layout, movement and zoning immensely which in turn creates a fragmentation of the urban context.
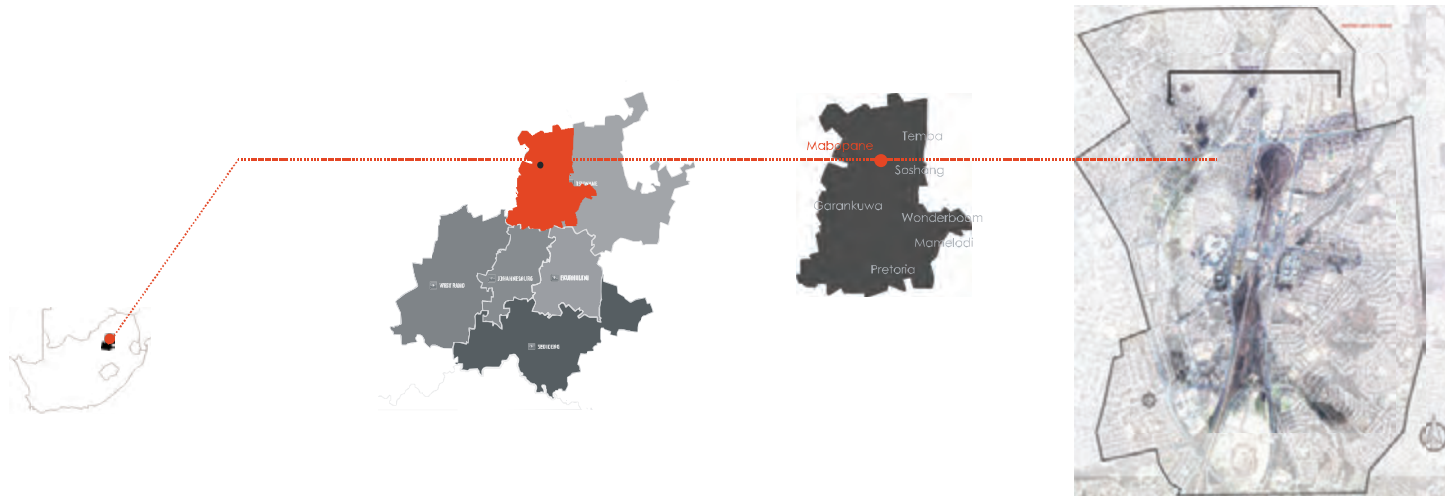

Figure 1:Context diagram of Mabopane

The Urban form

As an informal settlement Mabopane grows horizontally which creates little room for an urban core to form. The closest Mabopane gets to an urban core is in and around the existing train station that links it to Shoshanguve.

The station is where Mabopane gets its energy from and thus an economic hub. Surrounding this growing economic hub is mostlyresidential developments in the form of informal housing, RDP developments and middle-class suburban areas.

The residential component of Mabopane consists of a variety of different elements namely informal housing, RDP developments and middleclass suburban layouts.

These components border close to one another and even encroach on the station precinct creating a dense urban fabric. As one can notice in the figure ground of MabopaneFigure ... there are two distinct layouts to the residential component the informal layout indicated in red and the structured layout in grey.

Figure 3: Figureground around site By Author

Figure 2: Figureground of Mabopane,By Author

Figure 4: Mabopane station and market

Urban Elements

Most residents in the township rely on public transport to commute whilst only 20% own cars; this is through rail, bus and taxi.

The trains usually take working residents to the main industrial areas in Pretoria, whilst the taxis are used for local travel within Mabopane, Soshanguve, Ga-Rankuwa and Hebron.

All of the transportation to and from Mabopane is concentrated in and around the train station which has grown into an inter model hub which is transit orientated and also houses an informal market.

Almost 200 000 people move through this node each day.

Although the station is an essential part of Mabopane and can even be seen as its beating heart it does cause its own problems. The railway line not only servers the community but also divides it simultane-ously creating a divider and an enabler.

The Market

The informal market outside the station can almost be described as an organism in itself, growing and breathing a multitude of different functions and activities throughout the day. The market which is situated on the previous taxi rank assigned for the station has completely taken over and thrives on the thousands of commuters that moves through it each day.

The market has grown to such proportions that it has infiltrated the surrounding area and even the station itself.The possibilities created by the stations energy appears endless.

The market fulfills a very important function in the everyday life of the commuters of Mabo-pane, as some of them only have a brief moment of time to buy essential produce before returning home or to catch a taxi.

The market caters for a variety of different products mainly food, clothing, electronics and everyday household goods. The fresh produce sold is fruit and vegetablestransported from the countryside every morning.The meat is mainly beef or live chickens as it is the safest form of storing it.

The Traditional Herbalists

The large amount Traditional herbalists in Mabopane is quickly noticed as they define and envelop the street leading to the market and train station. The herbalist's consultation rooms are located on the street edge and thus almost creating a boulevard of sort living off the existing energy of the station, market and pedestrians that passes it every day.

Figure 5: Herbalist Qarters, By Author

The herbalist's occupy small buildings not exceeding 16 m² (4m x4m)which is constructed out of a variety of materials ranging from corrugated sheet metal to concrete cinders. There are no service connections to these structures as they have been built on sites not allocated for developments of any kind.

This self-expanding boulevard of herbal healers are confined between the main road and the cemetery which has ledto the encroachment of the sidewalk and to such an extent that it is almost non-existing.

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The Shopping centers

As a result of Mabopanebeing separated from Soshanguveby the railroad two detached energies started to form, this was quickly identified by retail developers as a lucrative opportunity to capitalize on both sides.
The result is two gigantic shopping centers not even 200m from one another, Central city mall and
Soshanguve Plaza. The shopping centrescater mainly for franchised shops and fast food outlets and because they are the only ones in the area the centers are extremely popular.

The Central City Mall almost twice the size of its counterpart is located across from the Mabopane station and market but has no linkages to them and appears to be turning its back on the existing energies. As a result the informal traders and traditional healers have been pushed onto the streets edge and in many cases created a potentially hazardous environment for pedestrians.

Figure 6: Arial Photograpfh of Mabopane's opposite shopping centres, By Author

Figure 7: Arial Photograpfh of Century Mall, By Author

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The Cemetery

The cemetery is located between the traditional herbalists and the Mabopane train station comprising of ±1300 graves.

The cemetary is cordoned off from the public by means of a concrete panel wall with one entrance to the south.

Unauthorized movement through the cemetary is non-existent due to cultural and religious beliefs of the majority of Mabopane's inhabitants.

Figure 8: Airial Photogragh of cemetary,By Author

Figure 9:Airial Photograph of Mabopane station, By Author

Figure 10: Satilite image of Mabopane, By Author

Urban issues(TheDivide)

Mabopane's under-developed urban condition is mainly a result of poor past and future planning and management by the post-Apartheid City Council the City of Tshwane Metropolitan
Municipality and has stifled development
possibilities.

The lack of management in and around the transport node has resulted in a fragmented urban condition which the locals have moulded and adapted to suit their needs.

The area surrounding the station has undergone multiple urban design proposals where only a few has been implemented and to only a certain extent.
In his book, Architecture and the Urban Environment, Derek Thomassuggests that planning and design of the urban setting should aim uncompromisingly at 'enabling' and 'ennobling' environments.

Inevitably, this demands a process based on people driven dynamics, in other words, planning inspired by the perception of the users of urban space (Thomas, 2002, pp. 19-25).

Mabopane consists of a mix of first and second economy individuals separated and dispersed across the landscape by insufficient infrastructure.

In order to stitch the broken fabric of social and economic separation enable-ment is necessary as Thomas mentions.

The urban condition needs to be a catalyst to develop the potential of the upward mobility of the individual (user) and to engage in the urban environment as part of the community.
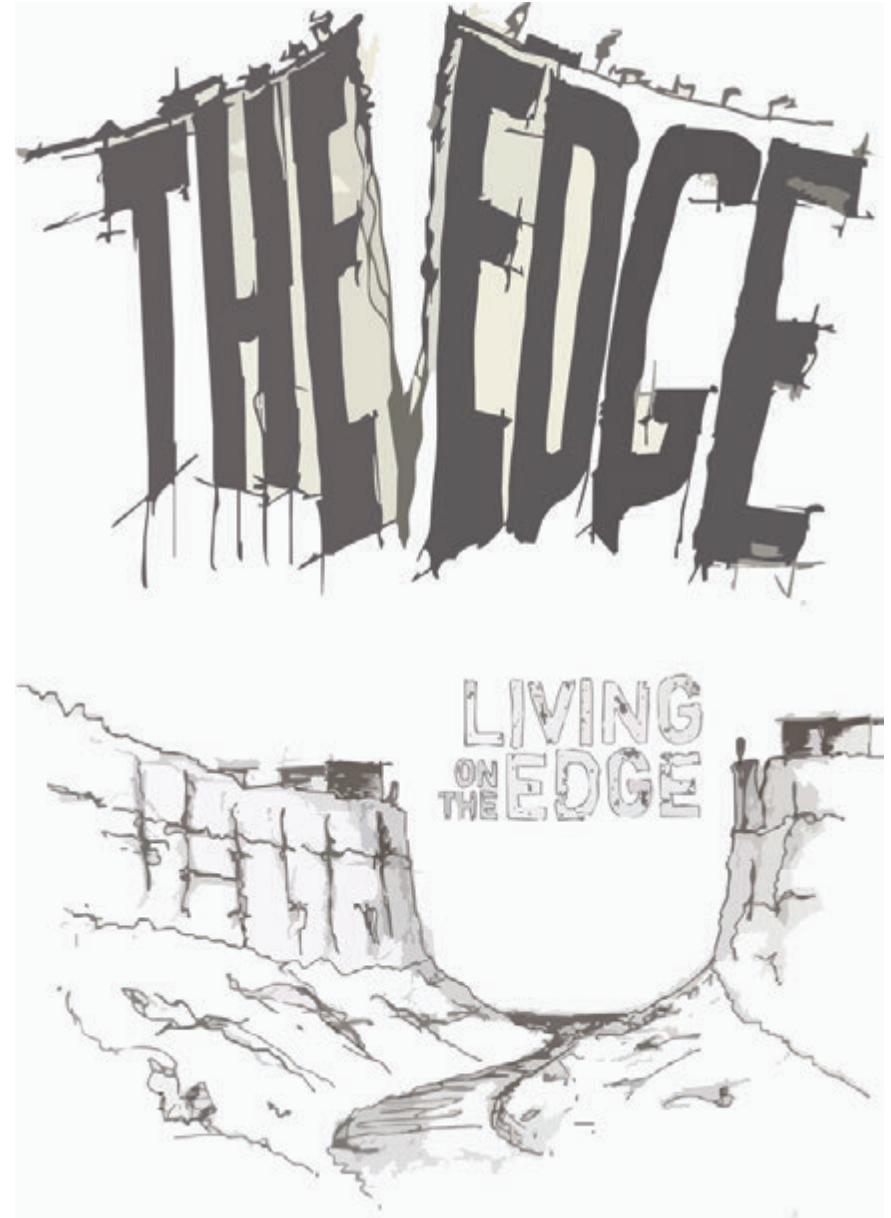
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Figure 11:Illustrations depicting edge conditions, By Author

Architectural issue

The station and the intermodal facilities are treated as a "human conveyorbelt" instead of infrastructure that fosters viable urban spaces.

It is "infiltrated" by the community in order to "survive". The linkages of the urban fabricdepend strongly on the station operating as a movement connector between Mabopane and Soshanguve.

This connection requires further framework to become operational.
The nearby surrounding area consists of mixed typologies namely informal housing, RDP developments, suburban layouts and retail.

This emphasizes Mabopane's complexity in its diversity. The overall sense of the architectural issue is the fact that everyone is involved but no one is committed or in control of a certain approach, an approach suited for Mabopane and its development.
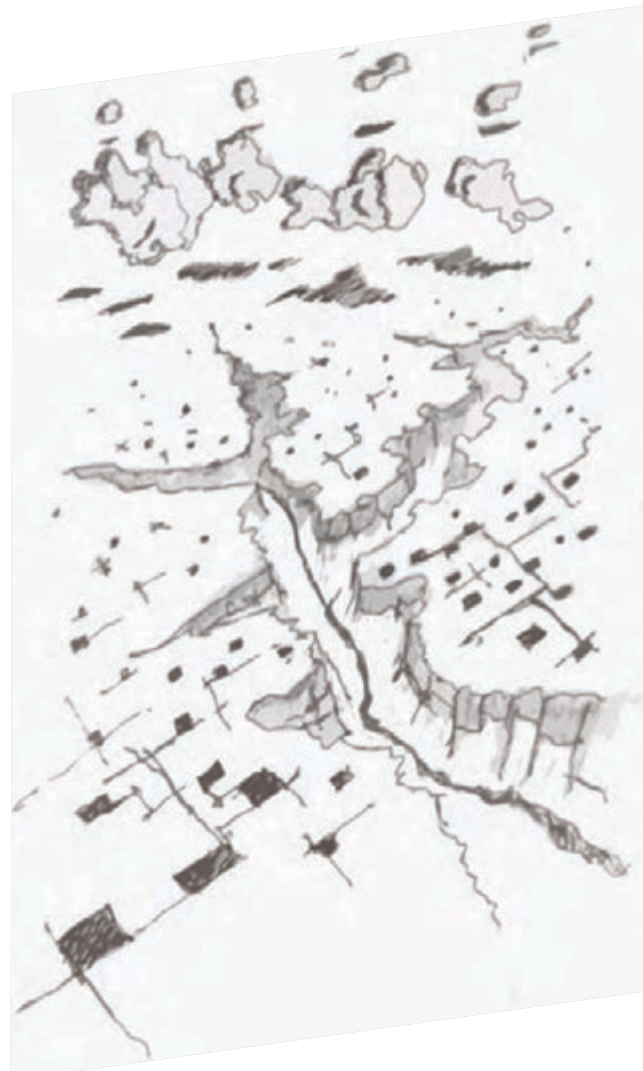

Figure 12: Illustration depicting edge conditions, By author

Figure 13: Central African Mall, By Author

Figure 14: Informal market, By Author

The definition and interpretation of space in Mabopane differs from area to area and is almost in a constant battle with one another.

As previously mentioned in the problem and its setting the two approaches are completely distinct in every way possible.

The one based on a structured approach(figure 16) and the other (figure 15)on a more organic approach.

At the moment both are fighting for survival with the structured approach prevailing every time which causes Mabopane to lose it's old identity and space making.

Figure 15:Organic urban form in Mabopane

Figure 16:Structured urban form in Mabopane

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SWOT

To break down Mabopane's key aspects the SWOC approach was used. This approach highlights and identifies Mabopane's strengths, weaknesses, opportunities and constraints to further understand the context in which to design in.
Initial Issues:

Strengths:
1. High energy in and around station precinct.
2. The ability of the inhabitants to adapt to their surroundings.
3. Makes use of the available infrastructure and uses it to its fullest even if it has a negative effect on the environment.
4. The community's ability to survive by utilizing all resources to their disposals.
5. Self-regulating system.
6. Social networks are extremely strong.
7. Finds order in chaos.
8. Welcoming towards development.
9. Entrepreneurial spirit, (Adapt or die).
10. Strong community network (Possible safety factor).
11. Ability of optimizing economic potential by identifying and focusing on an area with high energy. (Seeing potential.)
12. Sense of community.(In some sense more than middle class suburbs, 'Know they neighbour')
13. Organic growth pattern.(Ecological)
14. High growth pattern of urban fabric.(Even if unstructured)

Weaknesses:

1. Community is in survival mode which leads to criminal networks forming.
2. There is an unsafe environment in and around the station precinct due to financial concentration.
3. There is a lack of connectivity in and around the station precinct causing separation of funda mental urban elements.
4. Linkages of complementary urban elements are minimal.
5. Mabopane appears strong but fragile in nature.
6. Social and economic elements are not resilient to change.
7. Incomplete and insufficient infrastructure.
8. There's enough catering for the pedestrian which is the majority of the population.
9. Movement of vehicles and taxis are obscured and not effective creating dangerous environments.
10. Informal trading is susceptible to external forces manly their suppliers which are situated far outside the city.
11. Proposed infrastructure developments are sensitive to politics and thus never implemented nor completed.
12. Mabopane is not analysed contextually by council before planning future infrastructure thus nothing happens.
13. Living from the bare necessities (on the edge).
14. Waste disposal is informal and a health hazard.

Implied issues:

Opportunities:
1. Enabling the public.
2. Creating linkages in existing and to proposed fabric.
3. Upward mobility of the community to become resilient.
4. Expanding and reinforcing existing socio-economic elements.
5. Formalizing existing infrastructure without affecting already existing functional elements in a negative manner.
6. Identifying and then building on hidden structures.
7. Creating tectonic logic.
8. Researching a contextual approach to space making in an African city.
9. Introducing infrastructure that will ignite further development in and around the station precinct.

Constraints:
1. Lack of knowledge and research of Mabopane and its inhabitants.
2. Cultural indifferences that weaken community participation.
3. Ownership boundaries are dealt with in an informal manner which makes them obscured.
4. Inhabitants of settlement have an unpredictable approach to dealing with issues.
5. Community mind-set on future development is present but not strong enough.
6. The physical site that would be selected.
7. Dominated by Western/modern ideologies of how to approach space. (Koolhaas's "the generic city".)

Site Selection

In order for this new organization of traditional herbal medicine to form and develop the site must adhere to certain guidelines. This is determined by the definition of public space in
Mabopane, already existing traditional herbalist infrastructure and networks, promote growth where it has haltered and must also be a place highly accessible to the public.
The site which will be chosen to develop this concept of a traditional herbal organization must be situated in a prominent location, this will give new status and identity to traditional herbal healers which was non-existent in the past. The site must allow for public movement through it even when the building is not operating.
The site must not be too far from existing energies and in turn build on them without creating boundaries.

The Site

The site chosen for this intervention is located south of the station precinct and cemetery and lives out onto the M7, the main street leading into Mabopane.
The site also boarders on the 'boulevard' created by the existing traditional herbal healers with the
intention of expanding on the already prevalent need. The site is also located at the entrance to the proposed urban core catering for the prominent location the organization needs. The site is split in two by a service route that is mainly being used by pedestrians which can be optimized to cater for permanent pedestrian movement. Across from the site are two three storey office buildings owned by Metropolitan intersecting a petrol station and small shopping centre. Behind the intersection the
gigantic Central City Mall can be seen towering out fromlandscape.

SITE

Present function

The site is presently being used mainly by pedestrians on their way to the bus station which was not the intended route of the main precinct creatingan unsafe pedestrian movement situation. A driving school terrain is also situated on the site but is used seldom. The intersection of the service route to the main road is rarely used by motorists which caused it to double up as a taxi drop off area.

Figure 18: Site from street level,
Photographed by Author

Figure 19: Site from street level,
Photographed by Author

Figure20: 360 Degree view of site, By Author

Site Context

Land use

In and around the selected site an abundance of mixed land use is prevalent including commercial trading, informal trading (Market area), traditional healthcare (Boulevard), industrial parks, office parks, residential suburbs and transport.
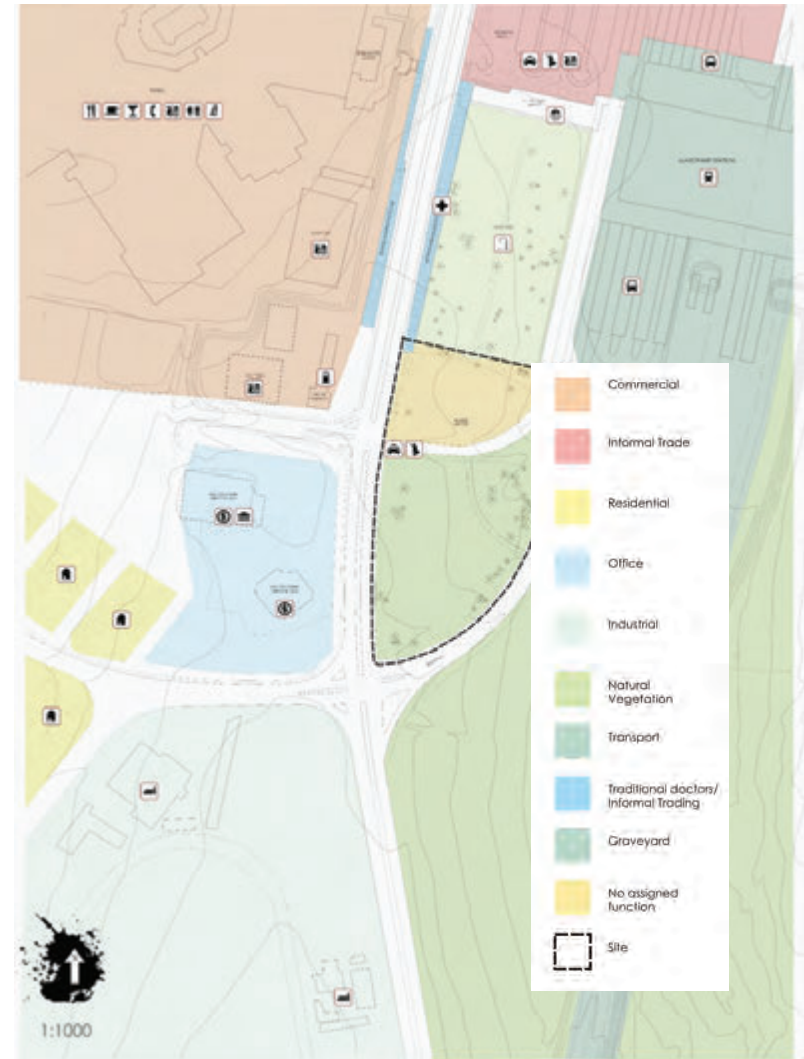

Figure 21:Site image depicting land use in and around the site, by Author

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Edges

The site is surrounded by a variety of different edge conditions ranging from inaccessible to semi permeable. As mentioned earlier, Mabopane is a highly public domain, which makes these strong edges even more intrusive compared to other highly dense urban frameworks. These edges seem to be a direct result of developments which didn't take Mabopanes urban form and distinct permeability into consideration. The edge along the Central City Mall and the main boulevard completely separates itself from the public domain and even pushes the informal traders and tradition herbalists onto the street, creating a hazardous movement route for pedestrian.

The cemetery is an obvious hard edge due to the cultural and religious opinion on death and every aspect of it for example forefather spirits. Although it's not enclosed the people of Mabopane doesn't move through it even though it is an easy shortcut to the station from the main street on the other side.

The hard edge on the western side of the boulevard is created by the shopping centre's fencing which was put in place not considering the informal traders and traditional herbalists.
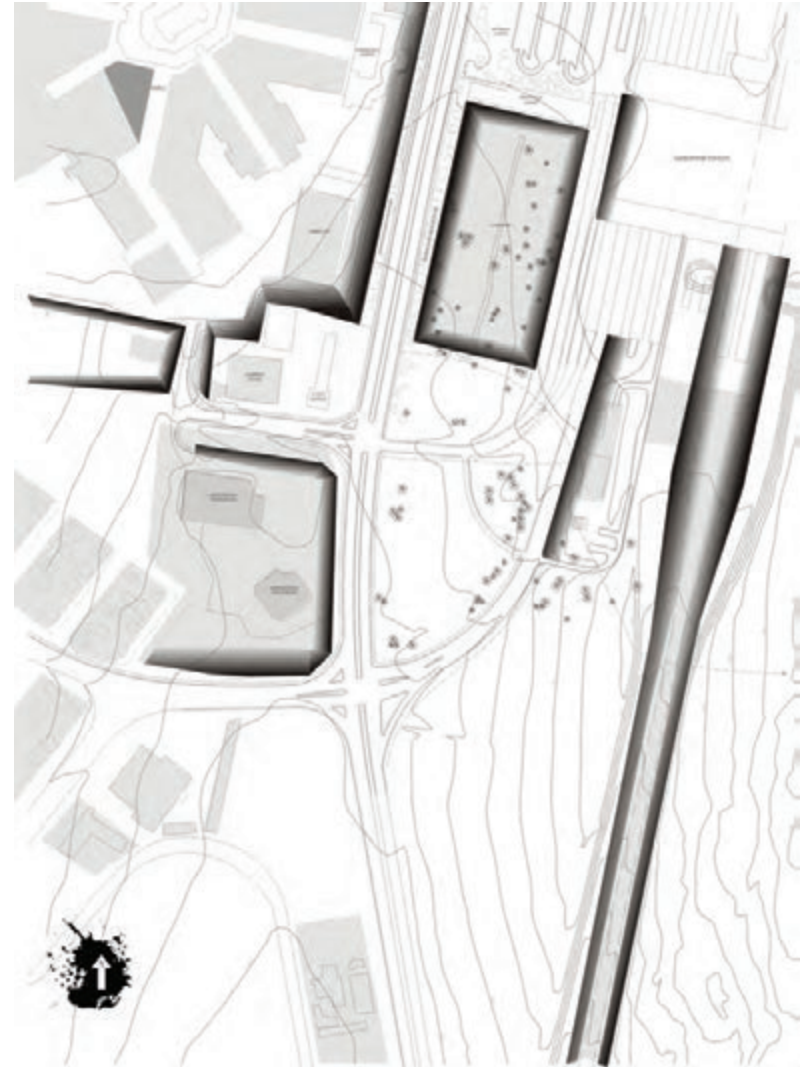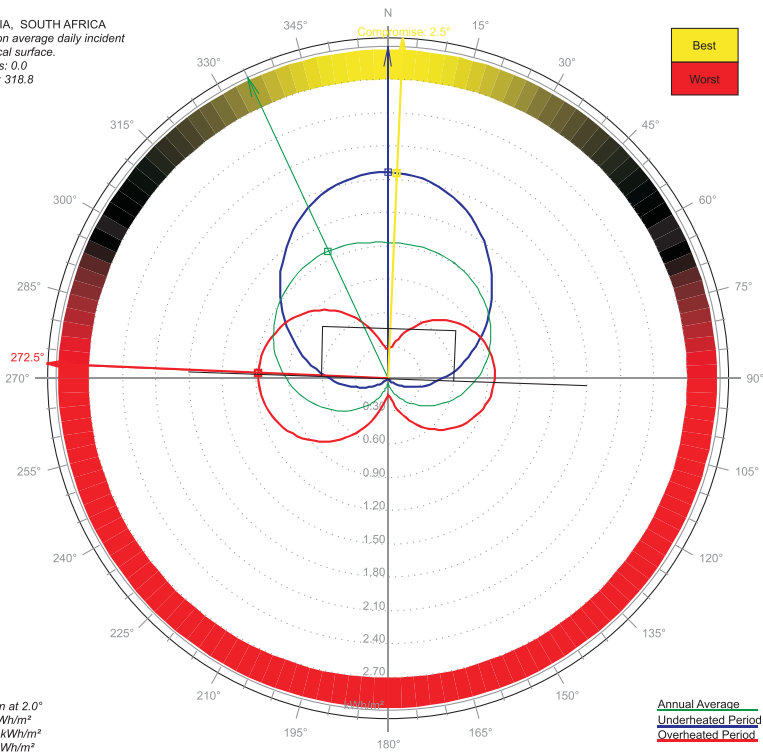Turning its back on potential energy and perme-ability adopting "ilandification".

Illustration of edges in Mabopane, by Author

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Climate conditions of Mabopane

Optimum Orientation

Location: PRETORIA, SOUTH AFRICA
Orientation based on average daily incident radiation on a vertical surface.
Underheated Stress: 0.0
Overheated Stress: 318.8
Compromise: 2.5°
© Weather Tool

N
345°   Compromise: 2.5°   15°
330°   30°
315°   45°
300°   60°
285°   75°
272.5°
270°   90°

0.30
0.60
0.90
1.20
1.50
1.80
2.10
2.40
2.70
kWh/m²

255°   105°
240°   120°
225°   135°
210°   150°
195°   180°   165°

| Best |
| Worst |

Avg. Daily Radiation at 2.0°
Entire Year: 1.23 kWh/m²
Underheated: 1.86 kWh/m²
Overheated: 0.27 kWh/m²

Annual Average
Underheated Period
Overheated Period

Psychrometric chart

Location: PRETORIA, SOUTH AFRICA
Frequency: 1st January to 31st December
Weekday Times: 00:00-24:00 Hrs
Weekend Times: 00:00-24:00 Hrs
Barometric Pressure: 101.36 kPa
© Weather Tool

SELECTED DESIGN TECHNIQUES:
1. passive solar heating
2. thermal mass effects
3. exposed mass + night-purge ventilation
4. natural ventilation

AH
30
25
20
15
10
5

Comfort

DBT(°C)   5   10   15   20   25   30   35   40   45   50
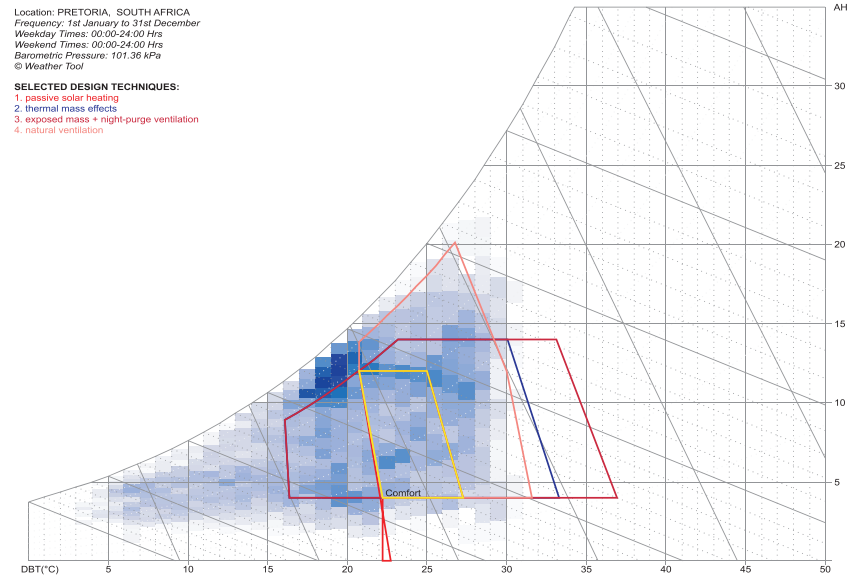
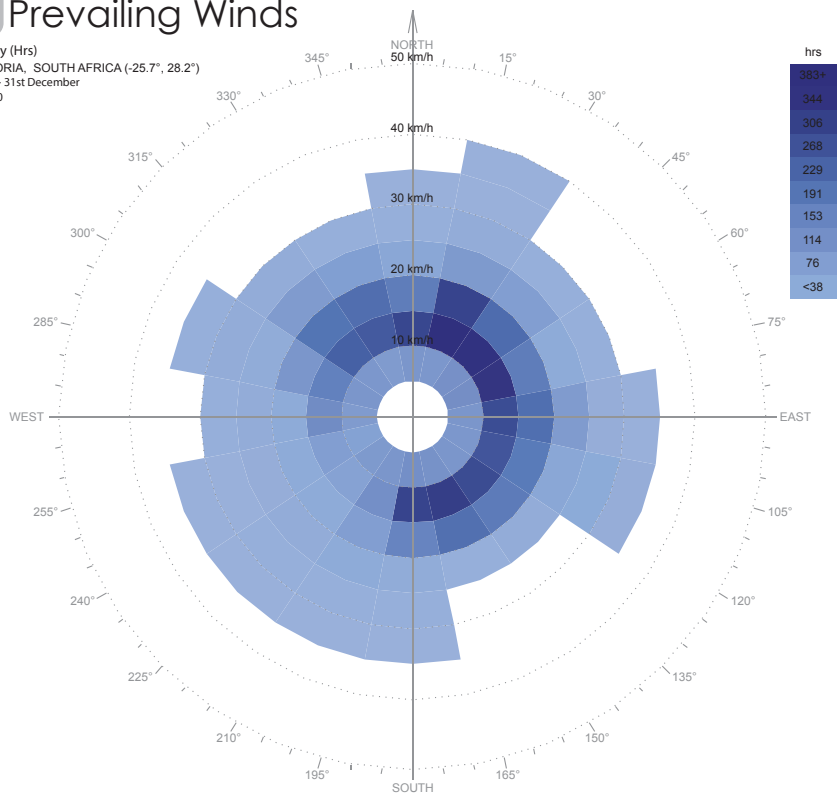Figure 23: Optimum orientation and Psychrometrica chart, Ecotect

Prevailing Winds

Wind Frequency (Hrs)
Location: PRETORIA, SOUTH AFRICA (-25.7°, 28.2°)
Date: 1st January - 31st December
Time: 00:00 - 24:00
© Weather Tool

Prevailing Winds

Wind Frequency (Hrs)
Location: PRETORIA, SOUTH AFRICA (-25.7°, 28.2°)
Date: 1st January - 31st December
Time: 00:00 - 24:00
© Weather Tool
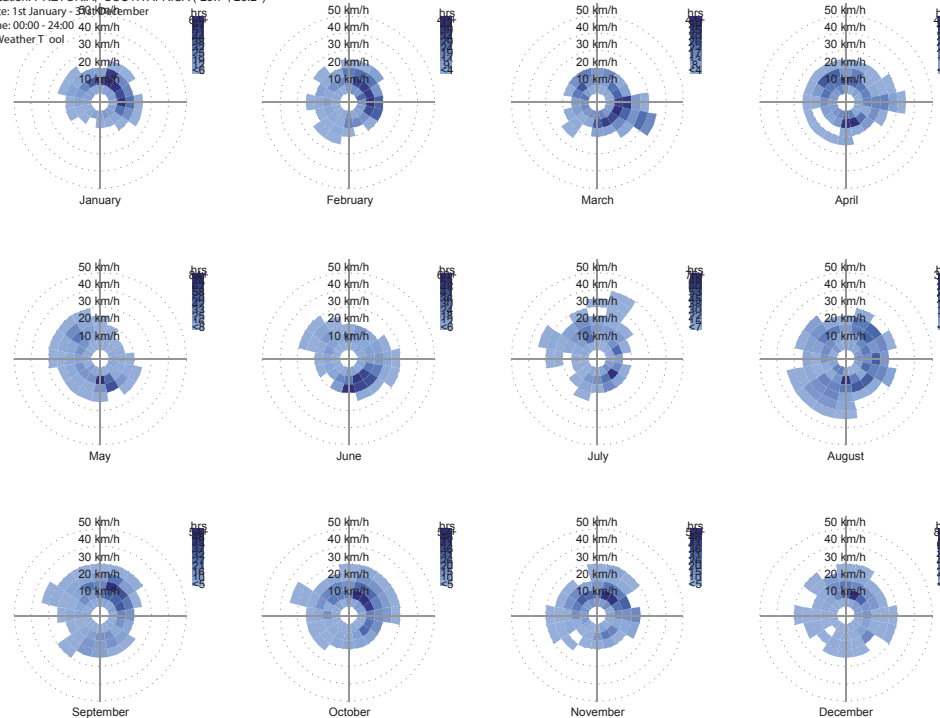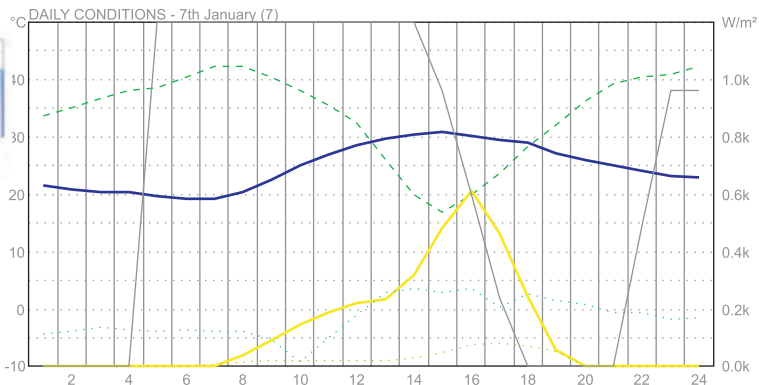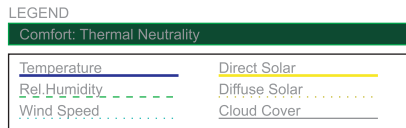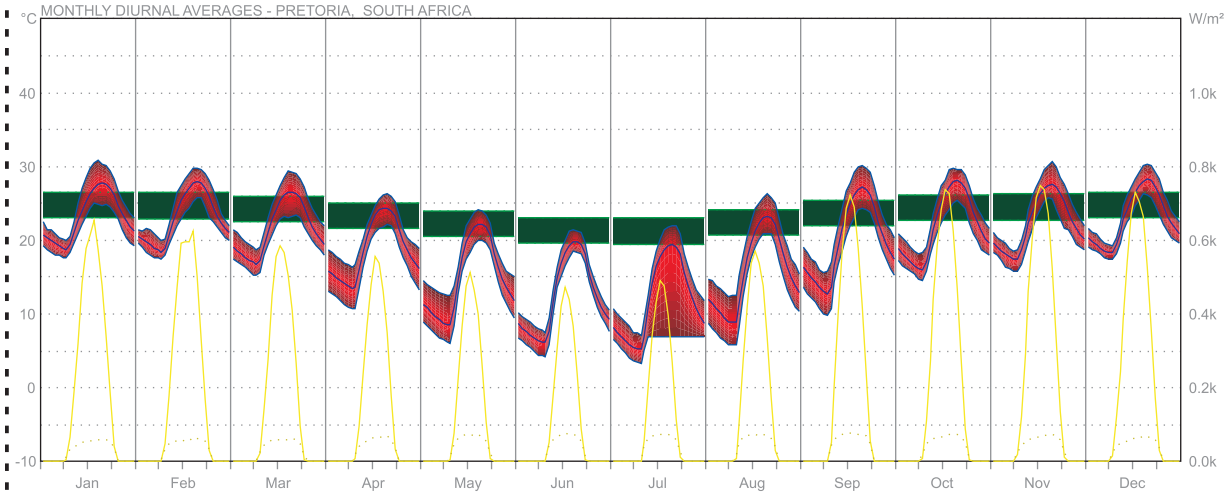
Figure 24 :Prevailing winds chart

Monthly temperature averages

°C MONTHLY DIURNAL AVERAGES - PRETORIA, SOUTH AFRICA   W/m²

40   1.0k

30   0.8k

20   0.6k

10   0.4k

0   0.2k

-10   0.0k

Jan   Feb   Mar   Apr   May   Jun   Jul   Aug   Sep   Oct   Nov   Dec

Weekly summary(maximum temperatures)

°C

50

45+
40
35
30
25
20
15
10

°C DAILY CONDITIONS - 7th January (7)   W/m²

40   1.0k

30   0.8k

20   0.6k

10   0.4k

0   0.2k

-10   0.0k

2   4   6   8   10   12   14   16   18   20   22   24
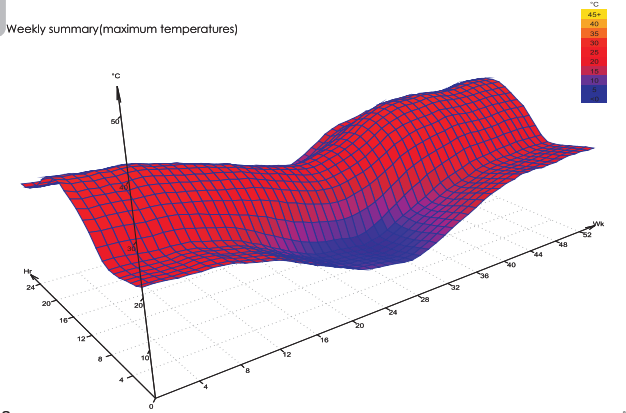
Weekly Summary
Minimum Temperature (°C)
Location: PRETORIA, SOUTH AFRICA (-25.7°, 28.2°)
© Weather Tool

°C

50

40

45+
40
35
30
25
20
15
10

LEGEND

| Comfort: Thermal Neutrality |

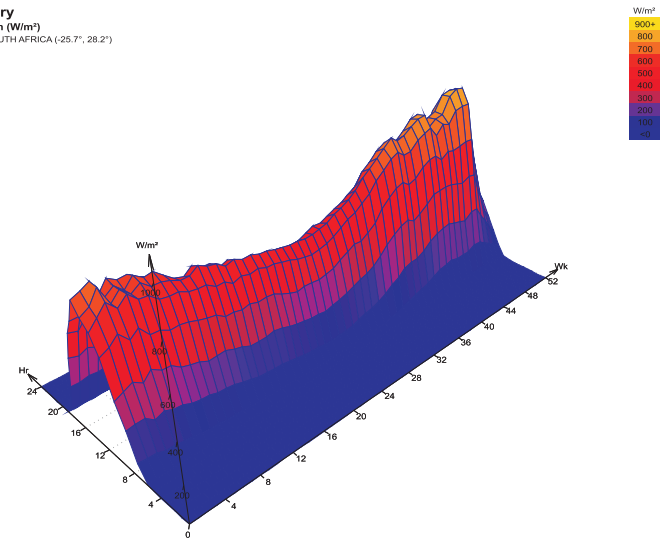| Temperature | Direct Solar |
| Rel.Humidity | Diffuse Solar |
| Wind Speed | Cloud Cover |
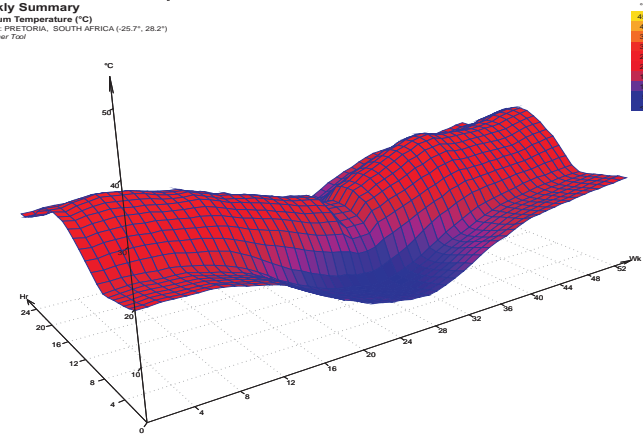
Relative Humidity

Weekly Summary
Relative Humidity (%)
Location: PRETORIA, SOUTH AFRICA (-25.7°, 28.2°)
© Weather Tool
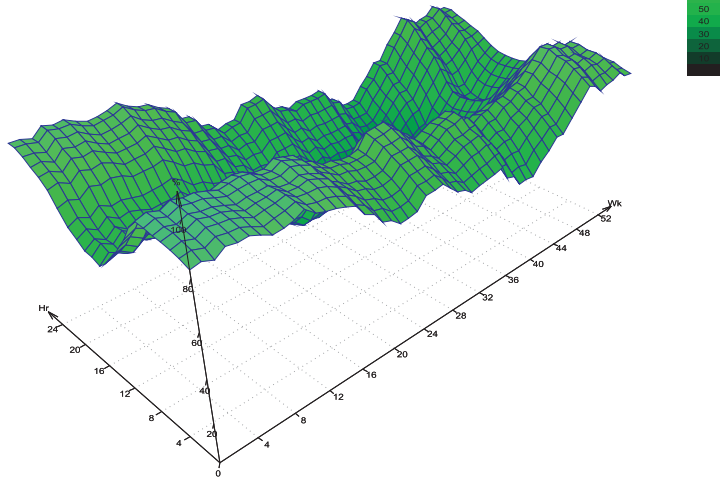
Direct solar radiation
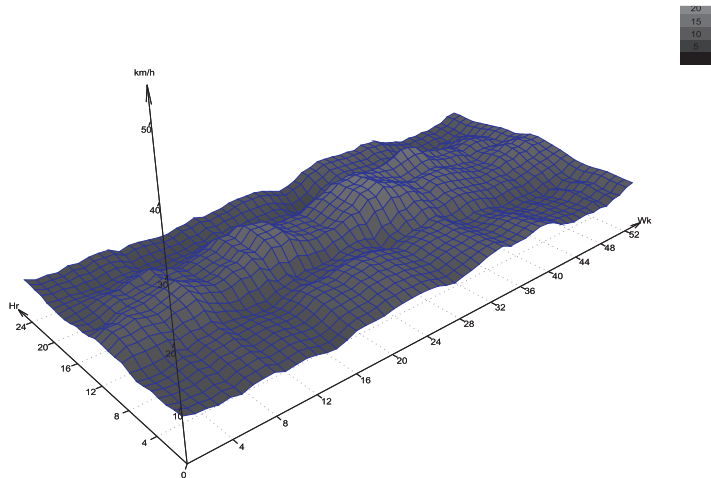
Weekly Summary
Direct Solar Radiation (W/m²)
Location: PRETORIA, SOUTH AFRICA (-25.7°, 28.2°)
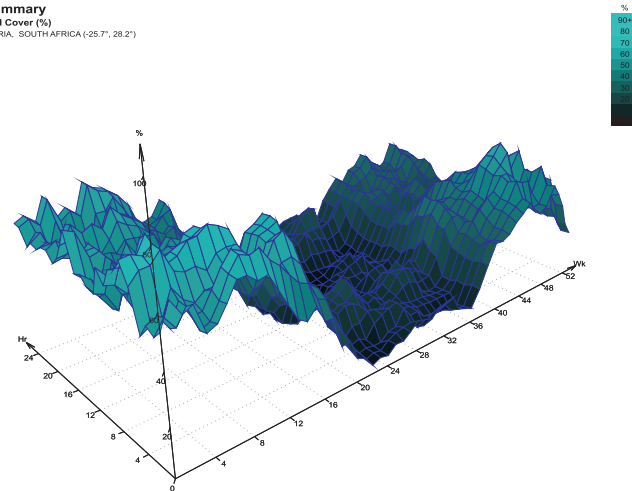© Weather Tool

Average Wind Speed

Weekly Summary
Average Wind Speed (km/h)
Location: PRETORIA, SOUTH AFRICA (-25.7°, 28.2°)
© Weather Tool

Average cloud cover

Weekly Summary
Average Cloud Cover (%)
Location: PRETORIA, SOUTH AFRICA (-25.7°, 28.2°)
© Weather Tool

CHAPTER __3

Introduction

Terms

Public/Private

Responsive Environment

The Ritual of Space in an African city

Definition of concepts
Introduction

Centre for **Indigenous** **Medicine** in **Mabopane**

Intent

Centre
- Public
- Serves public
- Civic space

Decription: **cen·tred, cen·tring. noun, verb**

Noun:
1. A place at which some **specified activity** is concentrated.

2. A person or thing that is a **focus of interest.**

3. Geometry: **The point**, axis, or pivot about which a body rotates.

Verb:
To focus or bring together: to centre one's thoughts.

Indigenous
- Cultural
- Local
- Human
- Ethnic
- Of the place

Decription :**in·dig·e·nous [in-dij-uh-nuh s].Adjective**

Adjective:
1. Originating in and characteristic of a particular region or country; native.

2. Innate; inherent; natural

Medicine
- Care
- Heal
- Restore
- Revitalize
- Bring to better state

Decription : **med·i·cine [med-uh-sin].Noun**

Noun:
.1. Any substance or substances used in treating disease or illness; medicament; remedy.

2. The art or science of restoring or preserving health or due physical condition, as by means of drugs, surgical operations or appliances.

Mabopane
S.W.O.C

Strengths:
- High energy
- Ability to adapt
- Self regulating
- Strong social network
- Sene of community
- Ecological

Weaknesses:
- Survival mode
- Unsafe
- Lack of connectivity
- Fragile
- Isufiecient infrastructure
- Not analyzed contectually

Oppertunities:
- Enablingthe public
- Creating linkages
- Introducing resilience
- Formalizing the existing
- Creating civic space
- Contextual approach
- Reinforcing the existing

Constraints:
- Lack of knowledge
- cultural indifferences
- Ownership boundries
- Site conditions
- Supressde by western/ modern ideologies

Definition of terms

This centre is a place at which some **specified activity** is concentrated serving the public creating meaningful civic space.

Of the place, contextual to a certain region and culturally supported through heritage aspects.

Discovery, research, development of local substances used in treating disease or illness.

Mabopane is a highly public place which is unstructured, organi, survivalist in nature and in need of enabling spaces.
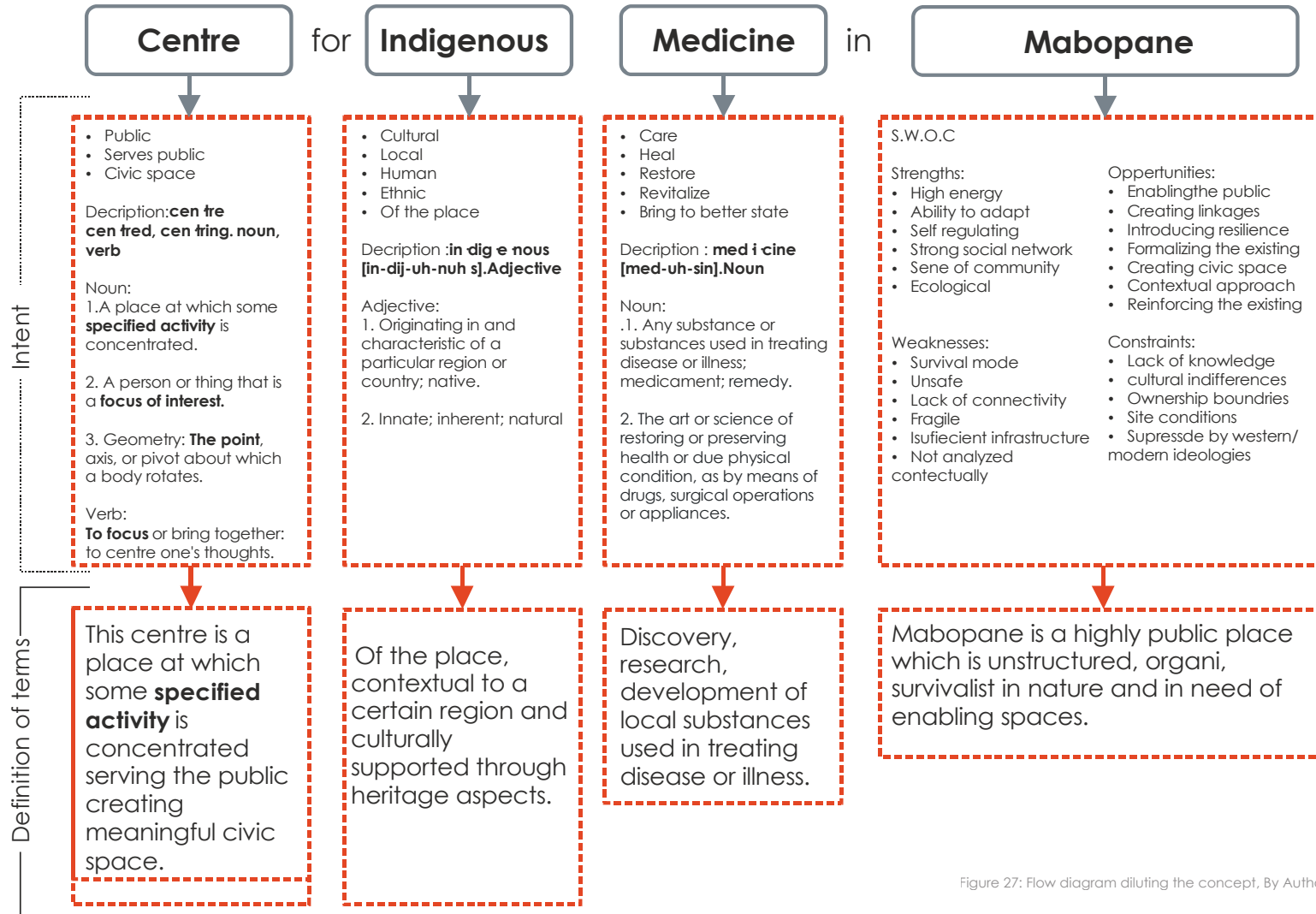
Figure 27: Flow diagram diluting the concept, By Author

Public/Private (Domain)

When looking at Mabopane and its urban planning it is clear to see that there is no order to the layout. Public spaces are defined by landmarks in the form of shopping centres, transport nodes and informal markets. Private spaces are defined by Local businesses, industrial institutions and suburban grid layouts.

Rob Krier, a famous architect, sculptor, and urban designer looked precisely at how the public and private zones are inseparable, intertwined and work together to form society. In his book 'Urban Space' he explores this relationship and its
boundaries. He starts off by suggesting that people had lost sight of their traditional ideas of urban spaces in their cities. The concept of "urban spatiality" became the focus of his thesis. The form and function of either external or internal spaces are very similar in the laws of Urban Space. Internal spaces are a means for protection from the elements whilst the external space come in the form of private, semi- private and public. The main element which makes them differ from one another is the boundaries which encompasses them and the circulation and function that is assigned to each.(Krier, 1979)

A square or public space is defined as being an open space surrounded by buildings with various functions. Krier believes that this layout was the first way in which humans started to explore urban space because of the control society had of the inner square. The street is also extremely important because it is the product of the layout of the informal settlement and defines the square and its functions. When allocating shape to the urban spaces' ground plan three geometrical shapes are considered, the triangle, the circle and the more famous shape the square. These shapes are then influenced by different factors: distortion of space,alignment,segmentation,elements that overlap and merging. Krier further explains that these spaces must also be designed for the inhabitant and if possible by the inhabitant. Rob Krier said "As long as man needs two arms and two legs, the scale of his body must be the measure of size for all building."The public and private sectors of urban space is essential to growth and the wellbeing of people.

Thus it became an essential part of the design intervention to be implemented in Mabopane's spatial definition and allocation. (Krier, 1979)
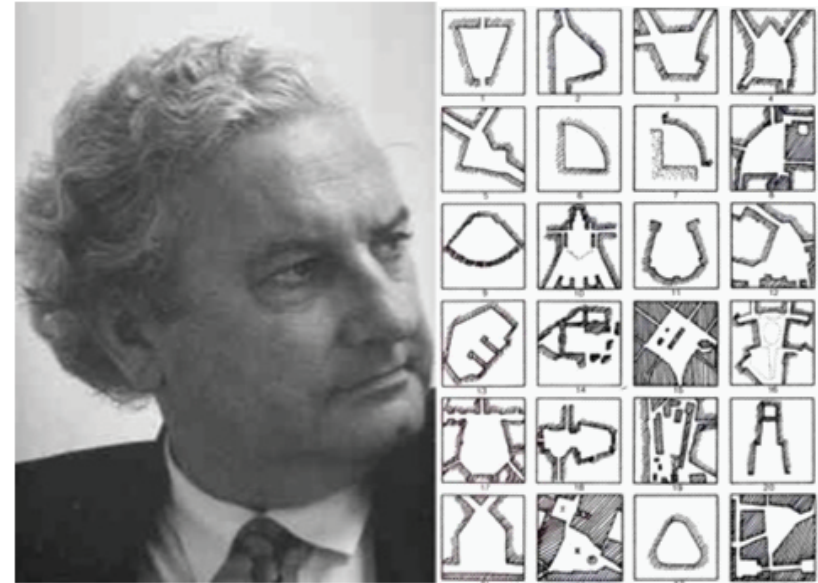

Figure 28: Rob Krier

Figure 29: Urban Space forming, Rob Krier.

Responsive Environments

To distinguish between spatial structure of Mabopane and the chosen site in public and private sectors an urban tick list was selected. The elements that form an urban and architectural implementation in the case of the settlement were based upon the book, Responsive Environments: A manual for Designers, by Ian Bentley. Bentley structures and highlights the main aspects that must be focused on in cases of urban development or restructuring of already existing development using seven performance criteria.

These are legibility, permeability, richness, personalization, visual appropriateness, variety and robustness.

Legibility is defined as distinctness that makes perception and identification easier.

The space must read straightforward and speak the same language to the user. The choices a place can give to its inhabitants are directly related to the accessibility of the place. Kevin Lynch, in The Image of the City said "the ease with which [a city's] parts can be recognised and can be organised into a coherent pattern" (Lynch, 1960).The responsiveness of a space is the ability to allow the choice of access and movement through it; this is permeability. Richness describes the texture of the urban space in the form of diversity. In the case of the lower public domain a structured informal herbal marketand enabled space for the traditional herbalists and certain amenities that activate the space. (Bentley, 1987)

Bently further elaborates that the ability for inhabitants and users to personalize their surroundings whether it is public or personal space is extremely important and essential to building identity. To be responsive to its environment the building or space must also be visually appropriate; it must look its function. Variety of a space is also of high importance because it highlights the functions, use and architecture of the space. Lastly the space or structure must be robust to ensure that it withstands day to day use without weathering to extend the life period and its function. (Bentley, 1987)

Bently suggests that his performance criteria is applicable to every situation whether a first world city or a third world rural settlement.

Figure 30: Responsive Environment Illustration by Rob Krier

Figure 31: Responsive Environment connectivity, Kenin Lynch

The Ritual of space in an African city

When designing a space in a specific setting one designs for the user of that space, in order to design the space to fulfil its primary function one must understand the user and how they perceive space. Thus if a space is designed the user should be its main informant. This is true for creating any space in any location in the world doesn't matter what the function of that space should be; then one must ask yourself the question, why is it when African architects design space they utilize foreign design guidelines and principles instead of building on existing guidelines?

Architect and lecturer at the University of Pretoria, RudolfJ.vanRensburgand Mary-Anne Dacosta argues this very well in theirpaper, Space as ritual: contesting the fixed interpreta-tion of space in the African city. Van Rensburg argues this by highlighting certain aspects and approaches in architecture that has contributed to this intrusive way of thinking of space. He also refers to activity driven solutions to defining space based on the differences of African and western philosophies on space.

Figure 32: Field dependence,Da Costa, 2008   Figure 33: Field independence. (Da Costa, 2008)

Van Rensburg refers to a cross cultural psychologist J Berry (1992:124) who proposed a measurement tool for spatial ability namely field dependence and field independence. Field dependence relies on strong visual cues which highlights new consciousness of boundaries and limitations.Field independence represents a clearer and more in-depth understanding of space beyond boundaries.These two measures are clearly evident in the layout of the urban form of Mabopane. The one being more systematic (Field depen-dence) and the other more humanistic (Field independence).
The two fields mentioned are created differently but caused by one main element and that is spatial ownership. Van Rensburgquotes Rod Lloyds article, Defining spatial concepts, to describe the concept of Africa's spatial ownership.
"In the African context all space is perceived to be public, except that which isdefined by ritual as private space. In comparison, the Western view commits all space toprivate ownership except for that which is designated and regulated as public area and definedthrough legal processes and demarcated by physical boundaries" (Lloyd 2003:107).

The essence of African culture is realised as a unique life force vested in each individual, the Munthu. The collective is called Bunthu, leading to the Xhosa aphorism Umunthungu-munthungaBanthu: "I am a person by reason of other people" which also explains the communal mind-set towards space and defining of space in Africa.
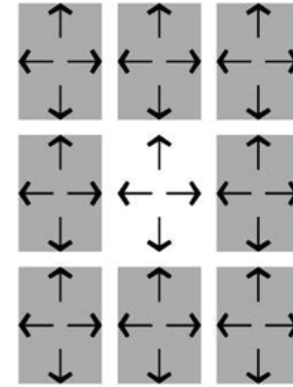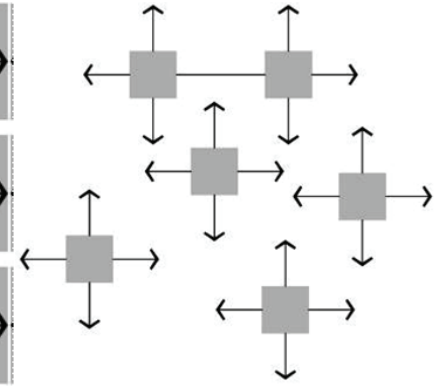

Figure 34: Field dependence. In Mabopane,illustration by Author   Figure 35: Field dependence. In Mabopane,illustration by Author

Field Dependence

Field dependence adopted from western philosophy is mainly informed and driven by a strict approach of ordering and designating land ownership, systems and movement. These characteristics make it more efficient and easy to apply by making use of its stringent rules and guidelines but field dependence also has its negative attributes. By following a grid pattern which is mainly focused on streamlining vehicular movement it has lost its ability to cater for its intended user, the pedestrian which, in the case of Mabopane is the majority. It is evident in the figure ground that solid blocks are formed due to the grid with minimal access through them obstructing the public and losing its sense of community.
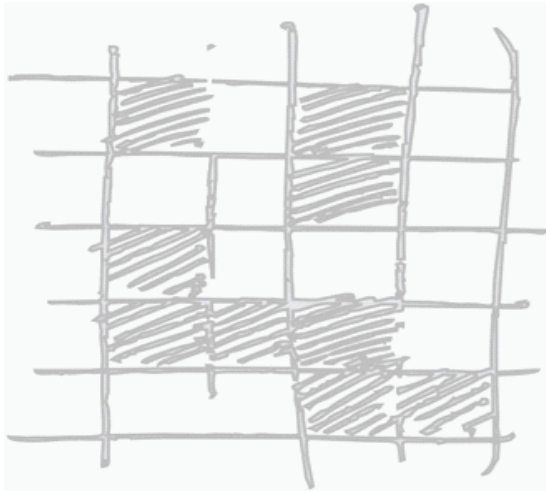

Figure 36; Movement through field independence order. Illustration by Author

Field Independence

Field independence is not only an African philosophy but can also be seen in historic cities around the world which can be compared to cities such as Rome, Venice and Amsterdam to name a few. This approach to defining space is more humanistic in the sense that it is created by the user over time for the user, compared to field independence which can be laid out almost instantaneously by city planners. The strong characteristics of this approach is that public space is formed where needed and created by the user which in turn enriches the communal bonds and ownership of these spaces.
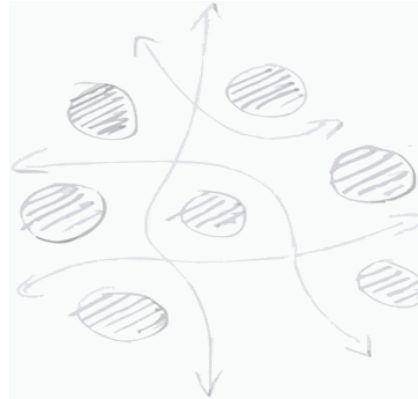

Figure 37Movement through field dependence order. Illustration by Author

Private space as mentioned before is defined by ritual whether it is a specific function or the perception of others towards that space, for example if a walking route exists another user cannot construct a building or claim that space as his own due to the perception of his fellow users.

Field independence is primarily informed by movement from node to node and is focused on the pedestrian. The organic form of these spaces is a direct result of the user's perception and expectation of how the space must be laid out. This organic nature of growth over time can be compared to an organism which adapts to suit its environment.However humanistic it is this type of space definition has its flaws. The implementation of services and allowing for vehicular movement is extremely difficult as a result of the freeform layout.

34

The Alfa Approach

These two approaches to defining space is permanently in conflict with one another which is clearly evident in Mabopane's spatial development and urban form.

It is also evident that the field dependence overshadows and replaces the field independencedue to its service accommodating difficulties. Both have strong desirable properties and thus it is crucial to investigate a middle ground to ensure absolute functionality whilst still catering for the user.

School of thought

Van Rensburg argues that this western school of thought that hasbecome the main influence of defining space in Africa is a direct result of design and urban designers that doesn't derive from the notion of "Africanist" thinking. He continues by criticizing academically qualified architects of absorbing only European theories without exploring enough African possibilities. (Van Rensburg and Da Costa, 2008)

Image Orientated Architecture
Pallasmaa postulates that there is an increase in society's fixation with the power of the image allowing contemporary architecture to become 'easy' due to ocular biases' which has turned architecture into shrewd seduction and vulgar utility (Pallasmaa 2005:17).

Figure 38: Overlapping of the two orders. Illustration by Author

Pérez-Gómes (2002: 165) which stated,"the interventions that occur within the contemporary city are objects that are produced in order to introduce form, and are isolated architectural events that are not integrated with the social landscape, are ignorant of their cultural context, their intended programmes, their historical roots, their ethical and social obligations, and the experiencing body".

This results in what Gómesdescribes as the "city of the eye" that mainly focuses on the visual elements.
This is influential in the fact that it highlights certain key aspects that the intended intervention must avoid in order to be contextually functional in Mabopane.

Activity Driven Solutions

The solution suggested by Van Rensburg is that of replacing form driven interventions with activity driven solutions. This would be achieved by architecture which doesn't only accommodate but also celebratemulti-cultural differences in society without resorting to symbolic and fashionable forms(Van Rensburg and Da Costa, 2008).

"Activity-driven solutions to spatial problems involve exposing urban realities and reactivating the city, enabling the provision of empower - ing urban and civic spaces"(Van Rensburg, 2008).

This approach to architecture is especially important to Mabopane's future growth and the creation of urban and civic space. The intended project, the organization of traditional herbalists, has to incorporate this activity-driven solution in order to reactivate, enable and promote resilience in and around Mabopane.

"The challenge lies in accepting that African resources are different and therefore require different solutions"(Van Rensburg, 2008).

The above statement is true in the sense that one has to acknowledge that something is different in order to apply the necessary and prescribed requirements. This is not insinuating that Africa is different in a negative sense but different in is very own way. This specified approach that is only applicable to Africa must first be realized and then embraced for what it is and the potential it has to offer.

Thus it is imperative to acknowledge that Mabopane's resources are unique and thus require new and different solutions like the activity driven solutions mentioned before with a mind-set of blending field dependence and field independence.

Abstract vs. Differential Space

Van Rensburg also highlights two more opposing forms of space found in the writings of Lefebvre's, The Production of Space. Lefebvre's concept is that of "abstract" and "differential" space. Abstract space is that of capitalism and commodity that eliminates social paradigms and differences.Abstract space also focuses on visual stimuliand a result of its prescribed nature can be quantified (Lefebvre, 1991: 286).

The most common attributes of abstract space is that it ignores the past and the potential of the space that it can become in the future by making a tabula rasa,"blank slate" in Latin, ofany opposing object (Lefebvre, 1991: 57). It cannot redefine itself and thus will enforce its own expiration date.
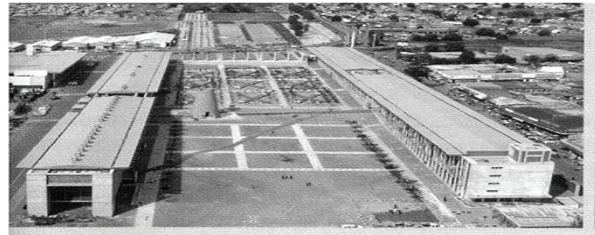

Figure 39: Walter Sisulu   Square of Dedication in Kliptown,   StudioMAS 2005.(Kuljian)

Walter Sisulu Square of Dedication in Kliptown is an example of such an abstract space.

The space lacks connectivity and presently is the home of informal traders that has infiltrated the ground floor but not in the expected manner in which it was intended. The large open space is not exhibiting any spatial qualities of an African civic space. The structure doesn't relate to its surroundings which makes it contextually intrusive.

It's evident that the design is based mainly on a western ideology of space which is focused on visual cues and large breathing spaces or "urban room" not activity driven spaces.

This is the reason why it's not functioning in the manner intended.

Surely there must be a solution to this problem, Lefebvre anticipates and encourages an alternative to "abstract space", which he terms "differential space". He describe this space as being one of heterogeneity and diversity which emphasizes the differences instead of ignoring them thus mending the unity which abstract space had destroyed. This approach of utilizing differential space create a lived space.(Lefebvre,1991)

A good example of such a differential space is that of the Warwick junction in Durban which is influenced by the idea of flow and routes and not vast open space like that of Western and European civic space. In Africa an open space will soon be given a function and filed with activity due to the lack of open space and private property available. Traders in this type of space doesn't own of a shop due to this lack of space and must thus trade in an already activity based public space. Spaces of such nature is not infiltrated by traders due to a lack of wealth but due to spatial arrangement and the approach to spatial definition and subdivision which determines the activity status.

Conclusion

Thus the applicable approach to defining public space inMabopane should be informed by every day rituals and events through activity driven solutions which acts in replacing abstract space with differential 'lived' space. Such a dynamic approach acknowledges and celebrates the opportunities that future African public spaces has to offer, thus redefining the African city.