

INDABOX

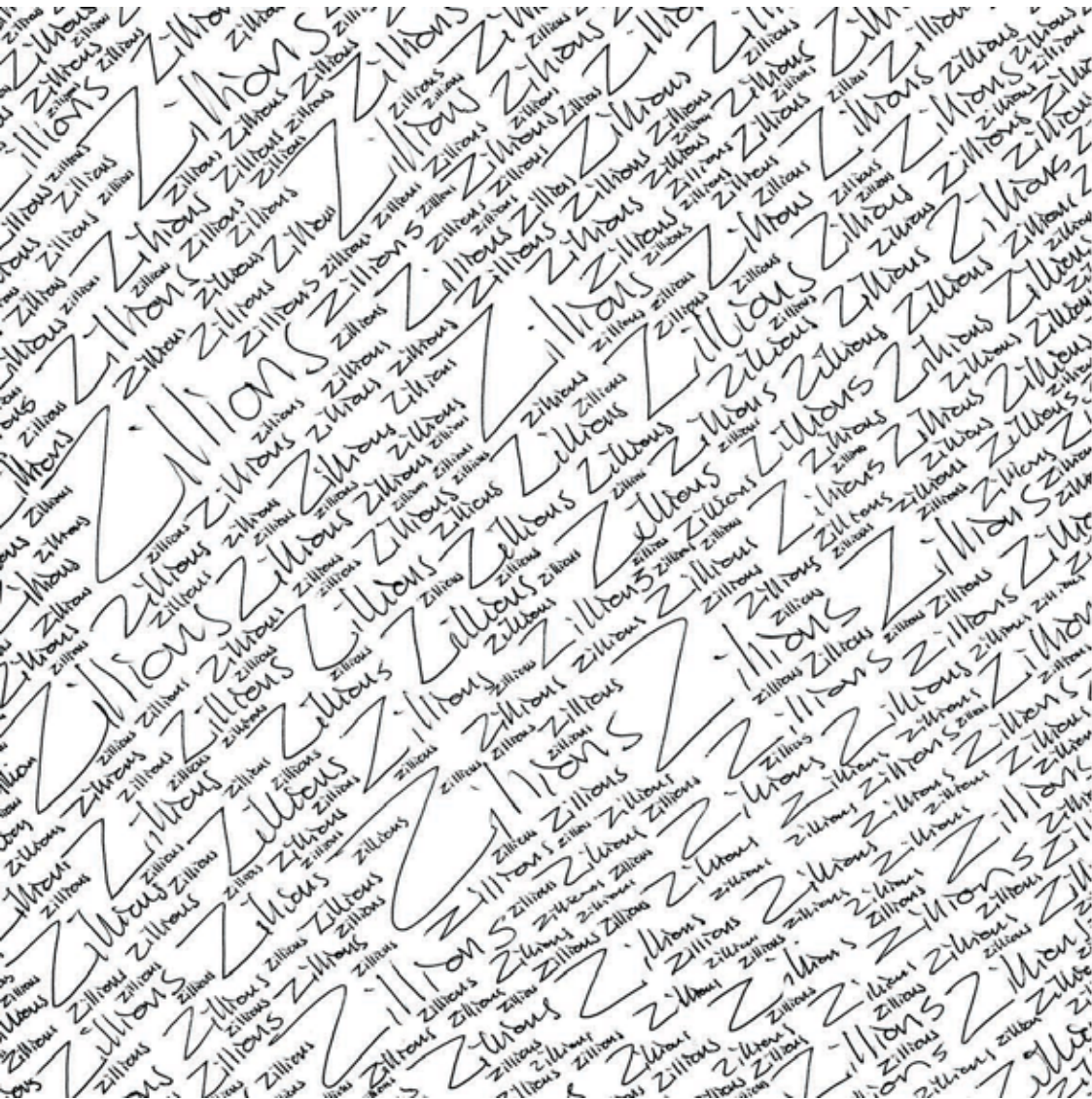
Giving the people a voice -
a platform for community
involvement and ownership

Submitted as part of the requirements for the degree of
Magister in Architecture (Professional) in the Faculty of
Engineering, Built Environment and Information Technology at the
University of Pretoria, South Africa.

November 2008

Werner van der Watt
92753044

INDABA SOAPBOX - INDABA SOAPBOX - INDABA SOAPBOX - INDABA SOAPBOX - INDABA SOAPBOX - INDABA SOAPBOX - INDABA SOAPBOX - INDABA SOAPBOX
Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box - Speaking out of the box



Opregte dank!

Mentor - Rudolf van Rensburg
dat jy my gereeld herinner het aan die eenvoud van ontwerp.

Design Input -
Calvyn, vir al die 'brain storming' oor ontwerp en sommer net die lewe in algemeen;

al die 'regulars' in die studio wat hier en daar vir my 'n paar lightbulbs aangeskakel het, Genette, Riaan, Servaas, Eddie;

JP vir die 'weird and wonderfully wacky ideas' en raad.

Deur die jare,
Rudolf en Nico en Prof Gus vir daai paar regte woorde op die regte tyd.

Vorbereiding vir drukwerk.
Susan Langeveldt

Uithelp met al daai dinge waarvoor ek nie tyd kon kry nie.
Kim Fritz

Aan my familie wil ek 'n spesiale woord van dank rig ... as ek dink aan wat julle vir my beteken wil ek net tjank. Ek is baie lief vir julle!
Pa, Nix, Ma, Ant, Mir.

Pa Piet en Ma Elsa
"... children ought to be provided with property and resources of a kind that could swim with them even out of a shipwreck."
Aristippus as quoted by Vitruvius in The Ten Books of Architecture
Julle het my die twee belangrikste dinge in die lewe geleer: die waarde van integriteit en 'n respekvolle vrees vir my Skepper. Ek kon nie vir beter ouers vra nie!

Pa Hennie
Die campher cream vir daai knieë is in die pos.

Ma Edwardene
Al daai 'smoke breaks' was net wat my brein nodig gehad het.

Ek en Henedene kan julle nie genoeg bedank vir al julle hulp en ondersteuning nie.

My Vrou
Abba het my regtig geseën met 'n staatsmaker vrou. Ek sou dit nie gemaak het sonder jou onderskraging nie. Ek sien baie uit na ons lewe saam vorentoe! Dene ... Zillions!

My Skepper ... YHWH Elohim
My Abba Vader,
My Verlosser,
My Ewige Metgesel,
sonder U is ek niks!



Abstract

This dissertation was born from the womb of the following words ...
Come now and let us reason together.

It has so many meanings on so many different levels. And even though this is an academic document, which normally entails that one writes it in the third person, it is also a piece of my soul. I therefore combine the opinions of learned ones with that which is my own. And I thus write in the first person regularly, for this document is personal.

I find that so many times people only give weight to the words of those whom others have decided to be worthy. But who decided that the 'others' are worthy?

Also this I saw as wisdom under the sun, and it is great to me: A little city, and few men in it, and a great sovereign came against it, and besieged it, and built huge siege-works against it. And there was found in it a poor wise man, and by his wisdom he delivered the city, yet no one remembered that poor man. And I said, "Wisdom is better than might. But the wisdom of the poor man is despised, and his words are not heard."⁴
(Ecclesiastes 9:13-16, The Scriptures, 1998)

Therefore, come let us, all of us, rich and poor, old and young, learned and illiterate, reason together and find the Way.

The introduction of the document is by way of grasping some of the reasons for urbanization, which is probably summarized best in the word, *unity*. And yet the reader is then made aware of the significant lack thereof and the importance of why, and how, society can address this problem resulting from the conglomeration of people. A problem which could be turned to an opportunity that will benefit the population, of the City of Tshwane, to the fullest extent. The objective is to suggest a solution that has the potential to be applied successfully in Tshwane and even, throughout South Africa, once it has proven itself.

This system needs to be formulated by the people who will adhere to it. And they will require a civic building to facilitate the whole process. The building itself is thus the 'sparkplug'.

With location always being of paramount importance, the physical context will be investigated. So too the current design issue of sustainability.

I will then take the reader through the process of how my design developed up to the final materialization of it and explain the why and how of the design criteria.

By way of conclusion I will strive to give the reader an honest appraisal of my own work.

Content

Part A			Part C	
Introduction	7		Precedents	40
Problem	8		Design Approach	42
Objective	11		Design Concept	43
Discourse	12		Part D	
Conclusion	19		Programme	58
Part B			Plans	62
Context	20		Part E	
Site analysis	36		References	78

The Iroquois Confederacy
also known as the "League of Peace and Power"
"Five Nations"
"Six Nations"
"People of the Longhouse"

A group of Native Americans that originally consisted of five nations: the Mohawk, the Oneida, the Onondaga, the Cayuga, and the Seneca. A sixth tribe, the Tuscarora, joined after the original five nations were formed. These nations refer to themselves collectively as Haudenosaunee.

The Iroquois have a representative government known as the Grand Council. Each tribe sends chiefs to act as representatives and make decisions for the whole nation.
<http://en.wikipedia.org/wiki/Iroquois>



Introduction

Urbanization is almost as old as mankind itself. The concentration of people in one area was a natural occurrence due to the needs of people. These included the need for safety in numbers, joint efforts in obtaining resources and, in the words of Pier Giorgio Di Cicco (2004), "the instinct for human encounter".

Urbanization is creating both opportunities, which should be enhanced, and problems, which should be diminished. But this can only be achieved by people working together towards a common goal.

According to Webster's Dictionary, to commune is "to converse or talk together, usually with profound intensity, intimacy, etc.; the "interchange [of] thoughts or feelings".

Commune,
community,
communication.

It seems that in the same way as the roots of the words are intertwined, so too are their existence. If there is no conversing with one another, there can not be a sense of community, and without that there can not be proper communication. Without communication there can not be communion.

It is about being involved with someone else. This is rarely the case in the modern urban society. And if people are not involved in each other's lives, how will they work together for the benefit of each other?

"And all the earth had one language and one speech. And it came to be, as they sat out from the east, that they found a plain in the land of Shinar, and they dwelt there. And they said to each other, "Come, let us make bricks and bake them thoroughly." And they had brick for stone, and they had asphalt for mortar. And they said, "Come, let us build ourselves a city, and a tower whose top is in the heavens, and make a name for ourselves, lest we be scattered over all the face of the earth."

Then HWHY came down to see the city and the tower which the sons of men had built. And HWHY said, "Look, they are one people and they all have one language, and this is what they begin to do! And now, they are not going to be withheld from doing whatever they plan to do. Come, let Us go there and confuse their language, so that they do not understand one another's speech."

And HWHY scattered them from there, over the face of all the earth, and they left off building the city. That is why its name was called Babel, because there HWHY confused the language of all the earth, and from there HWHY scattered them over the face of all the earth." (Genesis 11:1-9, The Scriptures, 1998)
Footnote 4: derived from verb meaning "to confuse."

DISCOURSE PART A



DISCOURSE – Is true democracy possible?

Robert A. Dahl makes it clear that the ideal of democracy remains a vision, a theoretical utopia, that no modern country has been able to reach. He argues that in order for it to become reality, the following criteria have to be met:

1. effective participation
2. voting equality at the decisive stage
3. enlightened understanding
4. control of the agenda
5. inclusiveness

[<http://en.wikipedia.org/wiki/Democracy>]

From a Wikipedia article (<http://en.wikipedia.org/wiki/Democracy>) it is gathered that even though the concept of democracy is interpreted in various manners, there are commonalities which makes it a value system accepted throughout the world. Incorporating principles such as equality, majority rule, competitive elections, freedom of speech, freedom of association, rule of law, etc.

The article identifies three conceptual types of democracy:

Aggregative democracy - Uses democratic processes to solicit citizens' preferences and then aggregate them together to determine what social policies society should adopt.

Deliberative democracy - Based on the notion that democracy is government by discussion. It is contended that laws and policies should be based upon reasons that all citizens can accept. The political arena should be one in which leaders and citizens make arguments, listen, and change their minds.

Radical democracy - based on the idea that there are hierarchical and oppressive power relations that exist in society. Democracy's role is to make visible and challenge those relations by allowing for difference, dissent and antagonisms in decision making processes.

Aggregative democracy consists of variants that, together with the views of Downs and Dahl, are further explained in the article.

The minimalist democracy believes that citizens are unable to rule themselves as they are 'clueless', and should therefore give teams of political leaders the right to rule in periodic elections.

The proponents of direct democracy believe that citizens should rule themselves and become directly involved and not through representatives. This will promote more educated people and increase socialization. It will also check powerful elites.

Downs (1957) suggested the use of ideological political parties to mediate between individuals and government. This would check the self-interested and somewhat unaccountable political elites competing for votes.

Robert A. Dahl argues that every citizen's interest should be given equal consideration when decisions are taken. The objection is against the majority of the voters deciding policy and not the majority of the entire population, as poverty and apathy may prevent political participation. Perhaps compulsory voting or refusing power to the government until the full majority participates, could rectify this.



DISCOURSE - What gives rise to participation within a community?

According to a Wikipedia article (<http://en.wikipedia.org/wiki/Democracy>) the ancient Greek word *demokratia*, literally means 'rule by the people'.

Habermas (2006) developed the concept of 'the public sphere' in 1962, which he has revisited since but not abandoned. He defined it as the realm of our social lives in which public opinion can be formed. This happens everytime private individuals assemble to form a public body and express their opinions. The state authority is considered 'public' authority and executor of political public sphere, yet not part of it.

"Only when the exercise of political control is effectively subordinated to the democratic demand that information be accessible to the public, does the political public sphere win ... over the government through the instrument of law-making bodies. ... [It] refers to the task of criticism and control which a public body of citizens informally ... practices vis-à-vis the ruling structure organized in the form of a state. ... Though mere opinions (cultural assumptions, normative attitudes, collective prejudices and values) seem to persist unchanged in their natural form as a kind of sediment of history, public opinion can by definition come into existence only when a reasoning public is presupposed."

Fraser (1990:57) comments that "The idea of "the public sphere" in Habermas's sense is a conceptual resource that ... designates a theater in modern societies in which political participation is enacted through the medium of talk. It is the space in which citizens deliberate about their common affairs, hence, an institutionalized arena of discursive interaction." She stresses the fact that this arena should be distinct from the state as it has to be critical of it.

She then looks at the complexities of this sphere within a multi-cultural society: "It follows that public life in egalitarian, multi-cultural societies cannot consist exclusively in a single, comprehensive public sphere. ... [as] it would effectively privilege the expressive norms of one cultural group over others; ... The result would be the demise of multi-culturalism (and the likely demise of social equality). ... [It] only makes sense if we suppose a plurality of public arenas in which groups with diverse values and rhetorics participate. ... However, this need not preclude the possibility of an additional, more comprehensive arena in which members of different, more limited publics talk across lines of cultural diversity. ... [and] entertain debates over policies and issues affecting everyone."

"The question is: would participants in such debates share enough in the way of values, expressive norms, and, therefore, protocols of persuasion to lend their talk the quality of deliberations aimed at reaching agreement through giving reasons?"

"... I see no reason to rule out in principle the possibility of a society in which social equality and cultural diversity coexist with participatory democracy. I certainly hope there can be such a society. That hope gains some plausibility if we consider that, however difficult it may be, communication across lines of cultural difference is not in principle impossible Granted such communication requires multi-cultural literacy, but that, I believe, can be acquired through practice. In fact, the possibilities expand once we acknowledge the complexity of cultural identities. ... After all, the concept of a public presupposes a plurality of perspectives among those who participate within it ... In addition, the unbounded character and publicist orientation of publics allows for the fact that people participate in more than one public, and that the memberships of different publics may partially overlap. This in turn makes inter-cultural communication conceivable in principle". (Fraser 1990:70)

DISCOURSE - Do we understand each other?

Le Baron (2003) highlights the fact that in order for us as humans, coming from different backgrounds, to more fully understand each other, we need to increase our cultural fluency – awareness of how different cultures communicate and handle conflict. "All communication is cultural -- it draws on ways we have learned to speak and give nonverbal messages. We do not always communicate the same way from day to day, since factors like context, individual personality, and mood interact with the variety of cultural influences we have internalized that influence our choices."

"Communication is interactive, so an important influence on its effectiveness is our relationship with others. Do they hear and understand what we are trying to say? Are [both parties] listening well? ... Is the mood positive and receptive? Is there trust between them and us? Are there differences that relate to ineffective communication, divergent goals or interests, or fundamentally different ways of seeing the world?"

He outlines cross-cultural communication by examples of ideas, attitudes, and behaviors involving four variables:

- Time and Space,
- Fate and Personal Responsibility,
- Face and Face-Saving,
- Nonverbal Communication.

Holliday et al (2004) reiterates "... that all communication is intercultural, ... [it] is ultimately about developing skilled communication strategies and principles in a globalizing world. [And unfortunately] ... we feel that much intercultural communication is marred by prejudice ..."

They argue that most people's views range between the extremes of 'non-essentialism' and essentialism'. Non-essentialism views the "complexity of culture as a fluid, creative social force which binds different groupings and aspects of behaviour in different ways, both constructing and constructed by people in a piecemeal fashion to produce myriad combinations and configurations."

Essentialism on the other hand "reduces and otherizes the individual ... imagining someone as 'alien' and 'different' to 'us' in such a way that 'they' are excluded from 'our' 'normal', 'superior' and 'civilized' group. Indeed, it is by imagining a foreign Other in this way that 'our' group can become more confident and exclusive."

It is unfortunately the normal behaviour of people in general to follow the 'easy' route of simplifying other cultures and over-generalizing their identity, instead of making the effort to understand 'others' better and consequently gain respect for them.

Discourse – what importance does a value system hold?

In his paper, *The Concept of Value in Resource Allocation*, Brown (1984) is concerned with the preference related concepts of value. He borrows it from Von Wright (1963), who defines it as an individual preferring one thing before or above another thing because of a notion of betterness. Brown identifies three realms within this definition, namely the conceptual, the relational, and the object realm.

In the conceptual realm the basis for value preference is about “things ... which are directly at issue in resource allocation.” Things that we often label as values or ideals, which he calls ‘held values’, e.g. honesty, loyalty.

In the sense of the relational realm, value arises from a preference relationship between a subject and an object. He defines ‘object’ according to Morris (1956, 10) as things that can be preferred to something else, e.g. colours, food.

In the object realm, value is the preferred “relative importance or worth of an object to an individual or group in a given context ... It is not a character of the object, but rather the standing of the object relative to other objects.” The value can thus only be determined by comparison and he calls it the ‘assigned value’.

Brown concludes that nothing has a fixed value, as it “reflects the context in which the valuation took place and the perception and held values of those assigning value.” With so many different people and circumstances this results in a constant state of flux.

There is thus a need for ‘held values’ and social influences to find common ground in defining values that “relate more closely to the welfare of the constituency to whose resources the value is to apply.” He agrees with Freeman (1979:34) who indicates that the modern ‘welfare’ concept relating purely to “economics on income and monetary transactions” is lacking in that it fails to take into consideration “other aspects of well-being, such as social relationships or sense of self-worth, [which] involves a kind of value judgment.”

In referring to Page (1977) and Rawls (1971), he suggests that social rules be established whereby a representative assembly of responsible individuals are immersed in the proper context to determine resource allocations. “[A] context that is mindful of the real ownership of the resources. ... [This would] offer the hope of more socially defensible values, values that look to the good of the whole.”

“I have always believed that in a marriage, a business partnership, or life in general, differences can be sorted out as long as both parties share the same value system. If not, the relationship will fail.”
(Werner van der Watt)

Discourse – What comprises a successful community?

McMillan & Chavis George (1986) noted that Gusfield (1975) distinguished between two major uses of the term community; not mutually exclusive in usage. The first being of geographical nature and the second concerned with human relationships. The modern trend though, tends to develop communities around interests and skills more than around locality, according to Durheim (1964).

They continue their discussion with the Sense of Community Scale developed by Doolittle and MacDonald (1978). It was used to gain insight into the “behaviors and attitudes at the community level of social organization”, which led to 3 generalizations:

1. Inverse relationship between pro-urbanism and preference for neighboring.
2. Direct relationship between safety and preference for neighboring.
3. Pro-urbanism decreases as perception of safety increases.

They also found from work done by Glynn (1981), that there is a positive relationship between a sense of community and the ability to function competently in the community. “The strongest predictors of the actual sense of community were (a) expected length of community residency, (b) satisfaction with the community, and (c) the number of neighbors one could identify by first name.”

“Bachrach and Zautra (1985) ... found that a stronger sense of community led to problem-focused coping behaviors ... that attempt directly to alter or counter the threat ... [It] contributed strongly to the level of one’s community involvement ...”, and the authors concluded that [a] stronger sense of community may lead to a “greater sense of purpose and perceived control ... In a similar study, Chavis (1983) identified the process of empowerment, which occurs through the development of community. Others have reported consistent findings; Florin and Wandersman (1984) and Wandersman and Giamartino (1980) found high self-reported levels of sense of community to distinguish those who participated in block associations from those who did not.” (McMillan & Chavis George, 1986:7)

They proposed a definition with four elements:

1. Membership - the feeling of belonging and of sharing
2. Influence - a sense of mattering, of making a difference.
3. Reinforcement - the feeling that members’ needs will be met by the resources received through their membership in the group.
4. Shared emotional connection - the commitment and belief that members have shared and will share history.

Sense of Community Scale (SCS) 1978

The scale used the following five factors to class neighbourhoods from low to high:

1. Informal interaction (with neighbors)
2. Safety (having a good place to live)
3. Pro-urbanism (privacy, anonymity)
4. Neighboring preferences (preference for frequent neighbor interaction)
5. Localism (opinions and a desire to participate in neighborhood affairs).

“Sense of community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together.”
(McMillan, 1976)



Objective

The cosmopolitan nature of the urban environment will produce varied perceptions; making it impossible to share values, unless the opportunity is provided for people to exchange their different worldviews. Arriving at a place of mutual respect and acceptance, people learn to live and let live, being gracious to others and oneself.

By participating in the decisionmaking process they will be more inclined to abide by the choices taken. They need to believe though that whatever input they give, big or small, will make a difference. It is also very important that the citizens are empowered by being able to hold public servants accountable.

There thus exist the need for a forum, of which the authority is recognized by both local government and the broad community. One that is not manipulated by anyone; where an environment of trust has been created.

The objective is to create a civic building that establishes a forum for the people of Tshwane, to realize a shared value system that is respected and upheld by all. This will foster a sense of ownership and community. Through this they will be able to optimize all the resources available to them, resulting in a people that enjoy the everyday life of the city.

To find the means to establish this objective, these questions will be investigated in the following pages.

Why is a value system important?

Finding common ground among people of diverse backgrounds; something that will bring them together.

What is the factors that comprise a successful community?

Achieving that feeling that members have of belonging, that they matter to one another and to the group, and a shared faith that their needs will be met through their commitment to be together.

What gives rise to participation within a community?

The sphere in which public opinion is given the necessary acknowledgement, where it actually is the people that decide on how they want to be governed.

Do we understand each other?

Focusing on effective communication across cultures that enables awareness and respect for each other's differences.

Is democracy possible?

There are commonalities which makes it a value system accepted throughout the world. Incorporating principles such as equality, majority rule, freedom of speech, freedom of association, rule of law, etc.

"Come now, and let us reason together"

Yeshayahu 1:18, The Scriptures

Constitution of the Republic of South Africa
Article 195. Basic values and principles governing public administration

1. Public administration must be governed by the democratic values and principles enshrined in the Constitution, including the following principles:
 - a. A high standard of professional ethics must be promoted and maintained.
 - b. Efficient, economic and effective use of resources must be promoted.
 - c. Public administration must be development-oriented.
 - d. Services must be provided impartially, fairly, equitably and without bias.
 - e. People's needs must be responded to, and the public must be encouraged to participate in policy-making.
 - f. Public administration must be accountable.
 - g. Transparency must be fostered by providing the public with timely, accessible and accurate information.
 - h. Good human-resource management and career-development practices, to maximise human potential, must be cultivated.
 - i. Public administration must be broadly representative of the South African people, with employment and personnel management practices based on ability, objectivity, fairness, and the need to redress the imbalances of the past to achieve broad representation.

Problem

In the introduction we mentioned the main reason for urbanization, being the benefit of people working together for their common good. Unfortunately this did not hold to be true, as most citizens are now disempowered, mostly through the loss of a community that looks after their well-being. Both the former and current national mottos of South Africa incorporated the central idea of unity. But ... we require unity, not uniformity.

In order for unity to exist, especially in a very diverse group of people, they need to share a common set of values that places worth on individuals, without it undermining the community. Values that are respected and adhered to by the whole community. Such is the purpose of the Constitution of our country.

This dissertation will focus on article 152(1), namely the manner in which the Municipality of Tshwane serves its citizens. In the past the system allowed for individual government officials to disregard the wishes of the people and then not being held accountable for their actions. 'Red tape' further smothers citizens who wish to be involved, which eventually results in apathy.

I believe the biggest problem to be, that we all lose sight of the fact that government officials are public servants.

However, "A city is not happy owing just to prosperity or economic opportunity. It is happy in the hope and business of human and meaningful things, in whatever sphere of endeavour; and art is about highlighting every sphere of endeavour, until the "artistic" is seen as a way of life, ...but if the daily life is not artistic, inspired by intimacy, zest and sociality, the passion is missing, and a city without passion is a city just of artistic events. ... the purpose of the arts in a city is to make a city fall in love with itself; by that I mean the seeing of passion at its own source, the joy of seeing what it has made, and the impulse to regenerate that joy in an atmosphere of risk, adventure and trust." (Di Cicco, 2004)

Perhaps one could rather replace the concept of art with that of creativity in a broader context. The result of people putting their skills together.

Da Costa (2007:30) reiterates the view of Ntuli (2002) on the problem that permeates African cities, which are overshadowed by globalization and the colonial past: the perception of having to be on par with Western society's ideologies. Struggling in "re-claiming their identities of a valid African urban expression", the values then should not only incorporate good governance, but also a way of thinking about life, and how we will live it together.



National Motto of South Africa

Former: Ex Unitate Vires (Latin)
From unity, strength,
(1910-2000)

Current: Ile e: /xarra //ke (//Xam)
Diverse people unite or
Unity in Diversity

Constitution of the Republic of
South Africa

Article 152. Objects of local government

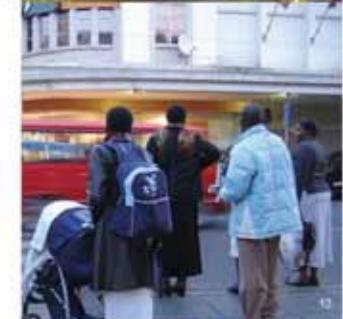
1. The objects of local government are –

- a. to provide democratic and accountable government for local communities;
- b. to ensure the provision of services to communities in a sustainable manner;
- c. to promote social and economic development;
- d. to promote a safe and healthy environment; and
- e. to encourage the involvement of communities and community organisations in the matters of local government.



**Ubuntu ungamuntu
ngabanye abantu**

(people are people
through other people)
Xhosa proverb





Conclusion

There lies great strength in people that are unified. To accomplish it is not an easy task though. It comes with great effort; and to achieve it, there needs to be something that binds everyone together. A common value system.

Most people often share the same values, but due to miscommunication they are led to believe otherwise. On the other hand they may just not see eye to eye. It then becomes important that people need to reason together to find a suitable compromise.

The Metropolitan Municipality of Tshwane will greatly benefit from establishing a point of contact where its citizens can, together, find the best way forward through resolving differences to the benefit of all. This can be achieved through a civic building that facilitates the following broad process:

- | | |
|--------------|----------------|
| 1. Awareness | 4. Conclusion |
| 2. Education | 5. Decision |
| 3. Debate | 6. Enforcement |

Change can only be affected through people that are aware of problems and which then get involved in meaningful discussions; once they have gained insight into all aspects of the matter. Through this process they will come to conclusions that inform their decision making. And given the authority, they can ensure that these decisions are carried out.

A life that is well lived could perhaps be best summarized in this maxim: 'To treat others as if it was yourself'. Accepting that things can't always be as we want it, neither always what others want. It is about give and take.

CONTEXT PART B

Design Context

What influences architectural design today?

Global inequalities in total consumption:

Richest Fifth:
86% of private consumption expenditures
58% of total energy,
87% of the world's vehicle fleet

Poorest Fifth:
1.3% of private consumption expenditures
4% of total energy,
1% of the world's vehicle fleet

"... estimates show that the world's 225 richest people have a combined wealth of over \$1 trillion, equal to the annual income of the poorest 47% (2.5 billion) of the world's people."

"The real issue is not consumption itself but its patterns and effects."

Human Development Report 1998 Overview, United Nations Development Programme
<http://www.hdev.un.org/Trade/Global/Consumption.asp>

"Most of the environmental issues we see today can be linked to consumption," said Gary Gardner, director of research for Worldwatch. (Mayell, 2004)

"Junkspace is like being condemned to a perpetual jacuzzi with millions of your best friends." - Rem Koolhaas
Benedikt (2002)

In his article *Consumerism As A Social Disease*, Dowd confirms Smith's opinion that capitalism had no need for consumerism until the 20th century: "There was, of course, "consumption," but that is as different from consumerism as eating is from gluttony: we must eat to survive; gluttony is self-destructive."

Shah(2005) questions whether we as modern man have the ability to distinguish between the needs of necessity and that of luxury. He also raises another interesting point by quoting Robbins (Allyn & Bacon, 1999): "The single most important measure of economic growth is, after all, the gross national product ..., the sum total of goods and services produced by a given society in a given year."

Engberg and Styhre (2003:116) reiterates the dependant co-existence between production and consumption. They refer to Marx and Engels that said: "production is simultaneously consumption as well" and "consumption is simultaneously also production".

What effect did this have on the built environment? According to Engberg and Styhre the spaces of consumption no longer only existed in-between other mainly living and production-spaces through arcade architecture,

but has rather become the primary focus, spaces that are celebrated – as can be seen from the late modern shopping mall. "Consumption becomes an aesthetic experience; space and consumption are merged in the spatial practice producing spaces of consumption ..." (2003:116-117).

Koolhaas coined the term 'Junkspace' - too much of too little: "Junkspace is the sum total of our current architecture: we have built more than all previous history together, but we hardly register on the same scales. . . . It substitutes accumulation for hierarchy, addition for composition. More and more, more is more. Junkspace is overripe and undernourishing at the same time ..." (Benedikt, 2002)

From an interview by Whiting (1999) with Koolhaas:

SW: What about the contemporary corporation's impact on the public realm? ... and how is it affecting urbanism?

RK: ... Shopping has become the main ingredient of any new urban substance. The shift is colossal. The city used to be free; now you have to pay for it. We are witnessing the birth of the postpublic, the private city. It affects everything -- program, architecture, events. ...



Space has become a consumer commodity.

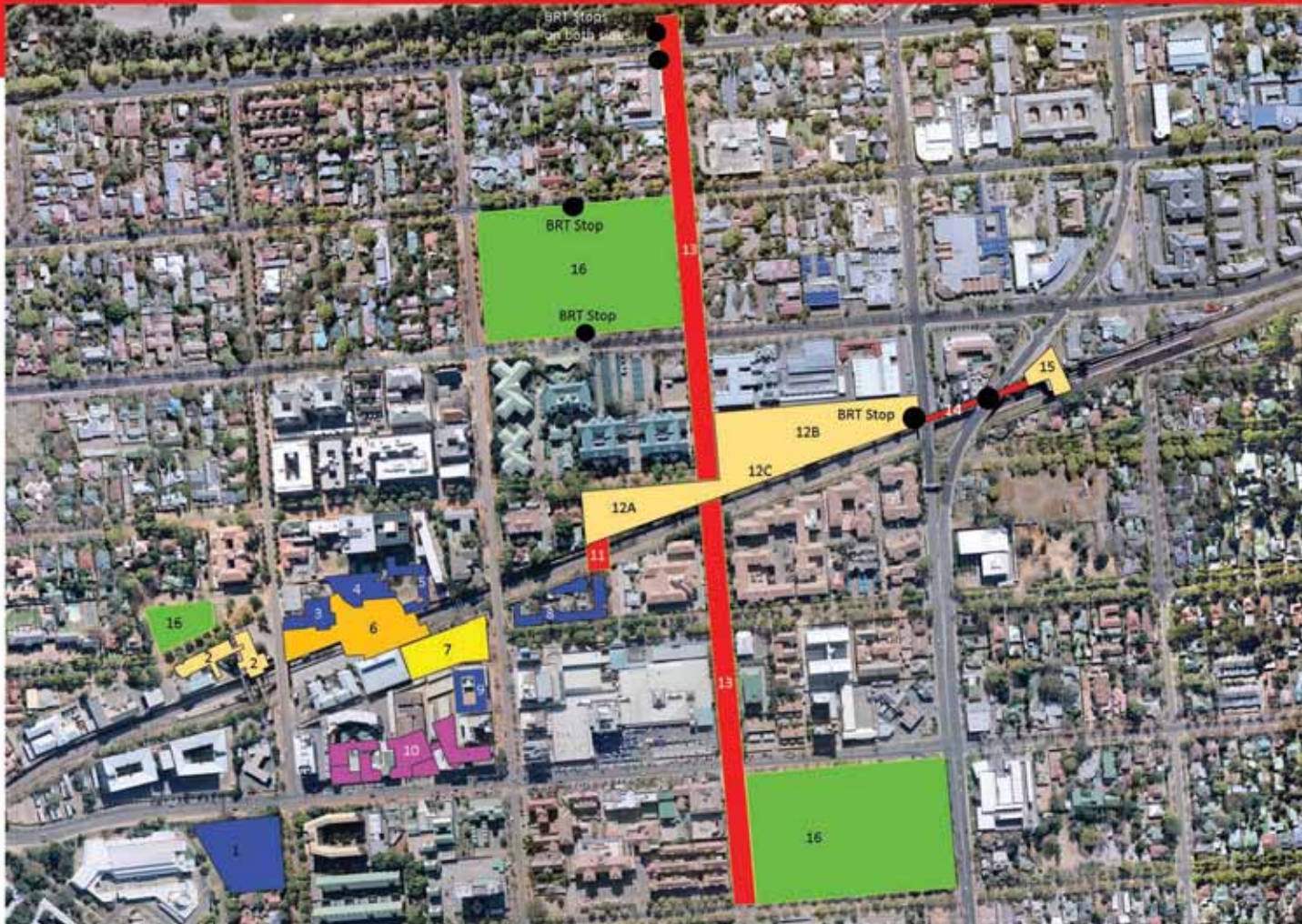
Context

Civic Spine
Spatial Development Framework

April 2008

MArch (Prof) group of students

- 1 **The Bridge (proposed)**
Establishes a link between Hatfield and the University of Pretoria, to facilitate the eventual merging.
- 2 **Metro Rail Rissik Station (proposed)**
The adaptive reuse of historic Rissik Station to address future needs and uses.
- 3 **Visual Arts Centre (proposed)**
Establishing art workshops to expose people to art through user participation.
- 4 **Music Performance Lab (proposed)**
Creating an awareness of the different disciplines within the music industry.
- 5 **K N O O P: (proposed)**
UP Fashion and Craft School Design
Creating a resource rich South African environment where design consultants will aid artisans to achieve viable careers in design. Done in collaboration with TEKQ – a Scandinavian Fashion and Textile School of Design that is co-operating with South African tertiary institutions.
- 6 **Public square (proposed)**
Centrally located in the heart of the precinct, providing a place for people to meet.
- 7 **Indabox Civic Centre**
A forum for the people of Tshwane, to realize a shared value system that is respected and upheld by all, fostering a sense of ownership and community. Enabling them to optimize all the resources available to them.



- 8 **African Dialogue Centre (proposed)**
Creating understanding between African nations, through the means of performances, exhibitions and conferences.
- 9 **The Tower (proposed)**
High-rise with mixed uses - commercial, office, hotel and residential
- 10 **The Fields (newly built)**
High density residential complex
- 11 **Pedestrian Link (proposed)**
Enable Gautrain users to cross the railway track
- 12 **Gautrain RRL**
Hatfield Station (proposed)
A Bus Terminal
B Vehicle Parking Garage
C Train Terminal
- 13 **Pedestrian bridge (proposed)**
Providing a safe link for pedestrians and bicycles to cross the busy roads in order to reach the BRT stop points
- 14 **Pedestrian walkway (proposed)**
Enabling commuters to cross underneath busy roads
- 15 **Metro Rail Station**
- 16 **Green open spaces**
Offering commuters an oasis when getting on/off at transit stop, which activates these under-utilized spaces. IT system notifies them in advance of next bus/train

Context

Hatfield Precinct
Identity Development Framework

March 2008
MArch (Prof) group of students

"FOR THE PEOPLE"

The Hatfield precinct must become a place for the people; a place for all.

Vision Statement

Integrating the University and Hatfield CBD precincts into one functioning network of innovation and social cohesion, amongst public, private and academic sectors. The transformation is a twofold interdependent proposal with the single vision as driving force:

UNI-R-CITY

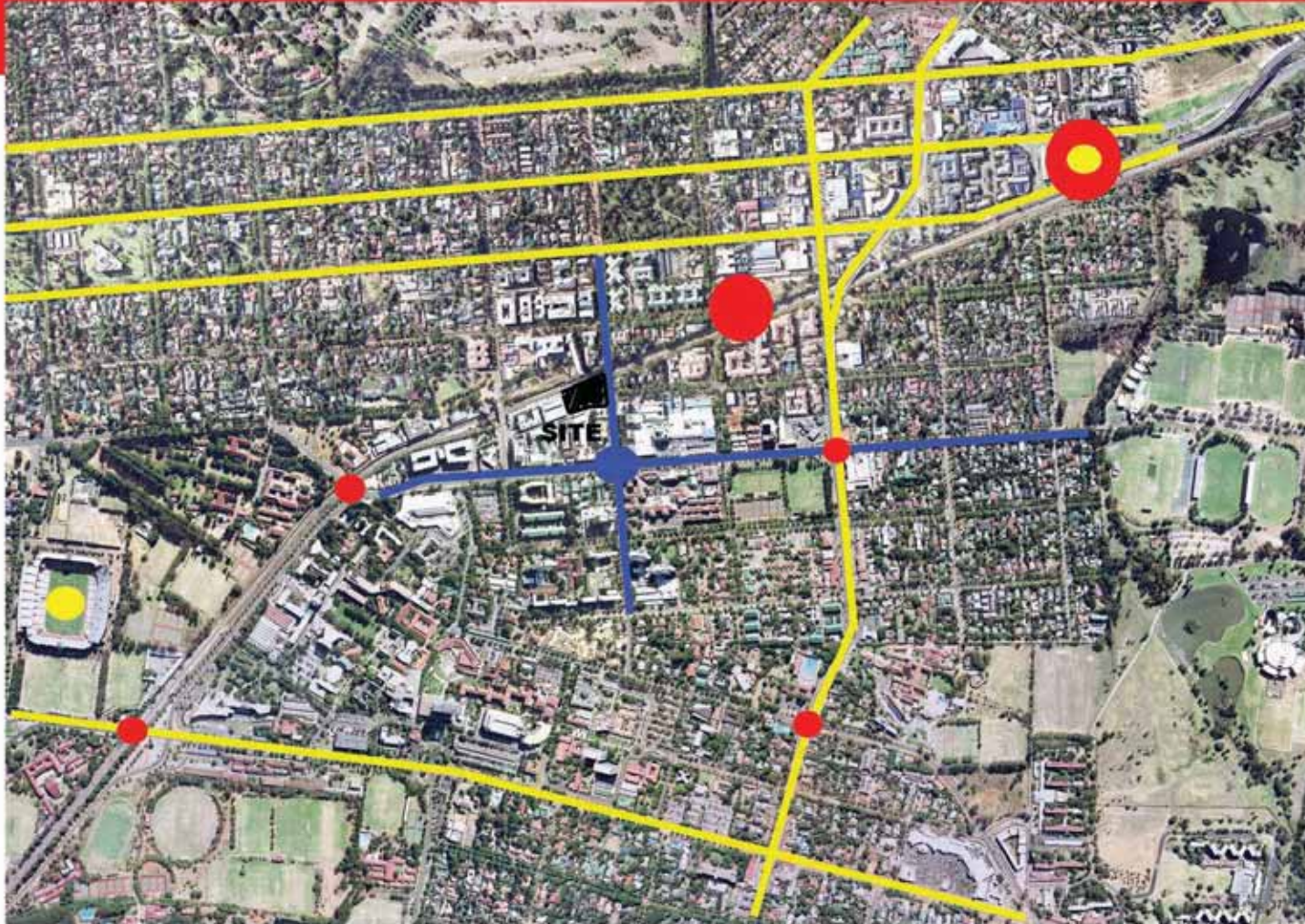
Unified Research City

The University of Pretoria's strategic objective is to become a world class research institute, developing a virtual world of spaces, lectures and libraries. Thus creating the need to pave the way for the community to fully utilise all the facilities that will become obsolete in the future.

S.T.A.R.T

Social Transition through Activating
Regeneration Techniques

Establishing the Hatfield precinct as a vibrant multi-dimensional node, with continues social, cultural and civic regeneration that is driven by the creation of interdependent mixed-use nodes that include transportation, cultural, commercial and political activities. This will present a dynamic interface for social expression.



Urban Development

- Landmark
- Node
- Path
- Gateway
- BRT Routes

Context

Hatfield Metropolitan Core
Urban Development Framework

Aug 2007

City of Tshwane Metropolitan Municipality

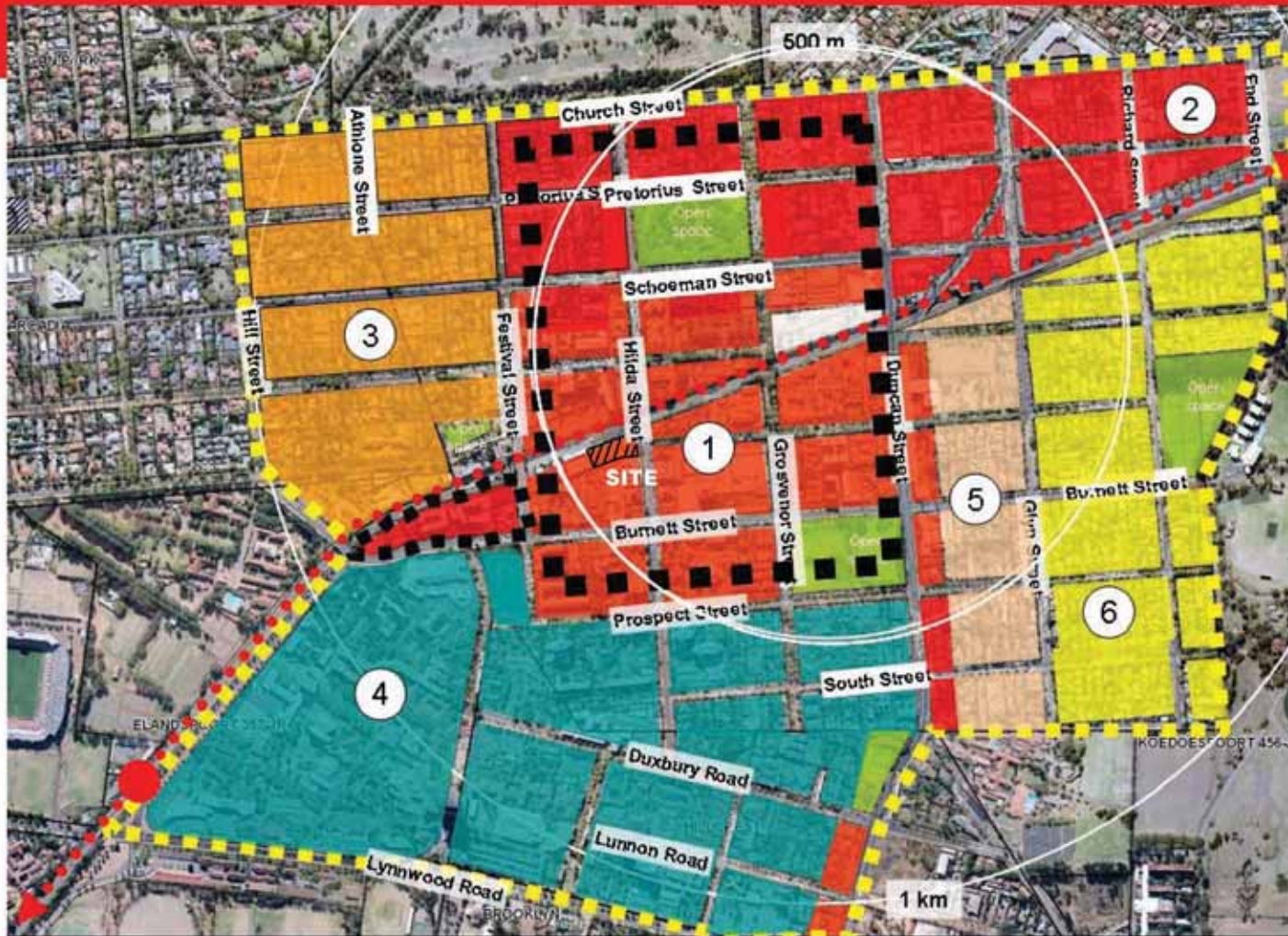
People draw people.

Critical look at future development in Hatfield for two reasons:

1. One of 6 Metropolitan Cores in the Tshwane Metropolitan Spatial Development Framework.
2. One of the three Gautrain Stations to be constructed in Tshwane.

Critical Requirements:

1. Clear identity and image.
2. Quality architecture.
3. Upgrading of the public domain and the integration of private developments with public space.
4. Intensification of development.
5. Mixed land use on site level.
6. Land use and transport integration.
7. Links for pedestrians and cyclists.
8. Service Infrastructure to support development.
9. Sound Urban Management.
 - a. Expansion of Hatfield CID to include Hatfield Metropolitan Core:
 - Safety and Security.
 - Cleanliness.
 - Liaison
 - Development Management
 - Partnerships
 - b. Bulk Rezoning of Land
 - c. Land Assembly



Focus on Transit Oriented Design:

1. Walkable design with pedestrian as the highest priority.
2. Train station as prominent feature of town center.
3. Regional node containing a mixture of uses in close proximity. (office, residential, retail and civic)
4. High density, high-quality development within 10-minute walking radius of train station.
5. Collector support transit systems
6. Designed to include the easy use of bicycles, scooters and walking as daily support transportation systems.
7. Reduced and managed parking inside 10-minute walking radius of town center/train station.

Legend

- 1 – Urban Core
- 2 – Mixed Use (motor related)
- 3 – Office / Residential
- 4 – University
- 5 – Mixed Use
- 6 – Residential

Image prepared by the City of Tshwane Metropolitan Municipality

Context

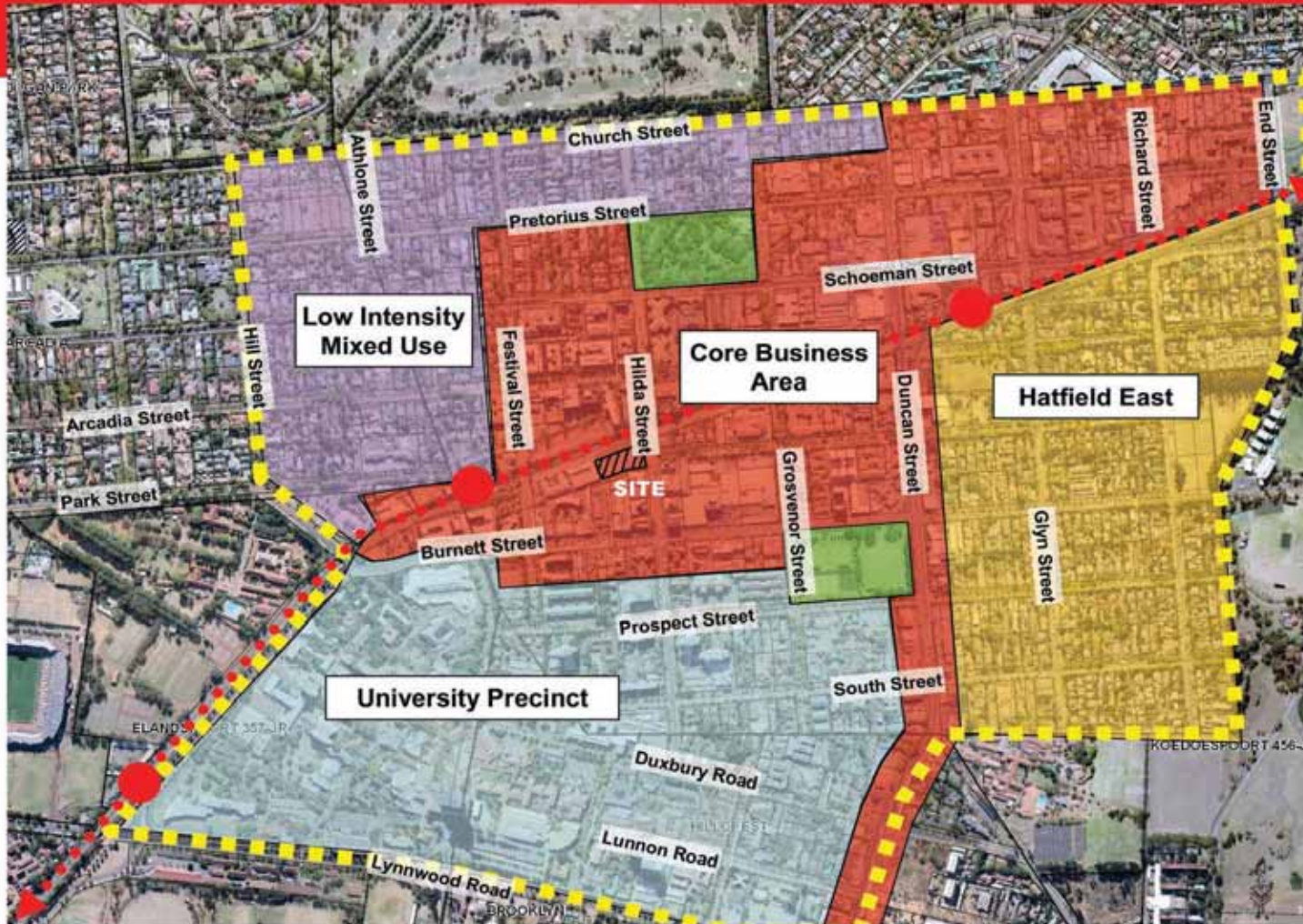
Current Hatfield Area

Strengths

- High density population enabling economic opportunities for small/medium enterprises that rely on passing trade
- Tree-lined walkways along Park
- Presence of buildings with heritage and cultural value
- Zones of tranquility and energy
- Few derelict areas
- Moderately developed infrastructure
- Services available
- Formal and informal economic activity
- High volume of pedestrian movement
- Variety of building uses
- Regular build-to lines to create defined urban space
- Permeability through blocks in core business area
- Night time activities along Burnett
- *The Fields* development increases passive surveillance along Burnett and Hilda and open area along rail track
- Variation in income groups
- Privatization assure maintenance
- UP provides constant source of new residents and users.

Weaknesses

- During vacation times business, especially food and beverage, have slow-down
- Very little civic space, hard open spaces are privatized
- Lack of safe public green space
- Security at night
- Spaces around bridges crossing the railway track are not properly defined
- Only perimeter movement around UP, no permeability



Opportunities

- Gautrain station will bring more people to area, thus increasing economic possibilities
- Growth in middle income group
- Residential buildings that take advantage of proximity to station that will connect with office environments along Gautrain route
- Permeability of blocks increased
- Spine development create civic space
- Integration of formal / informal trading
- Diversity of spaces and activities
- Co-existence of opposites is enhancement of variety
- Densification of area
 - greater volume residential buildings
 - increased pedestrian movement
 - better public transport, wider usage
 - walk-about city possible
- UP will likely keep on expanding as need for education grows. This will bring even more people to area.

Threats

- Private developments that goes unchecked might endanger civic space
- Green spaces could diminish further
- Increased population draws organised crime

Image prepared by the City of Tshwane Metropolitan Municipality

Context

Position of the Hatfield Precinct within the Transit Framework

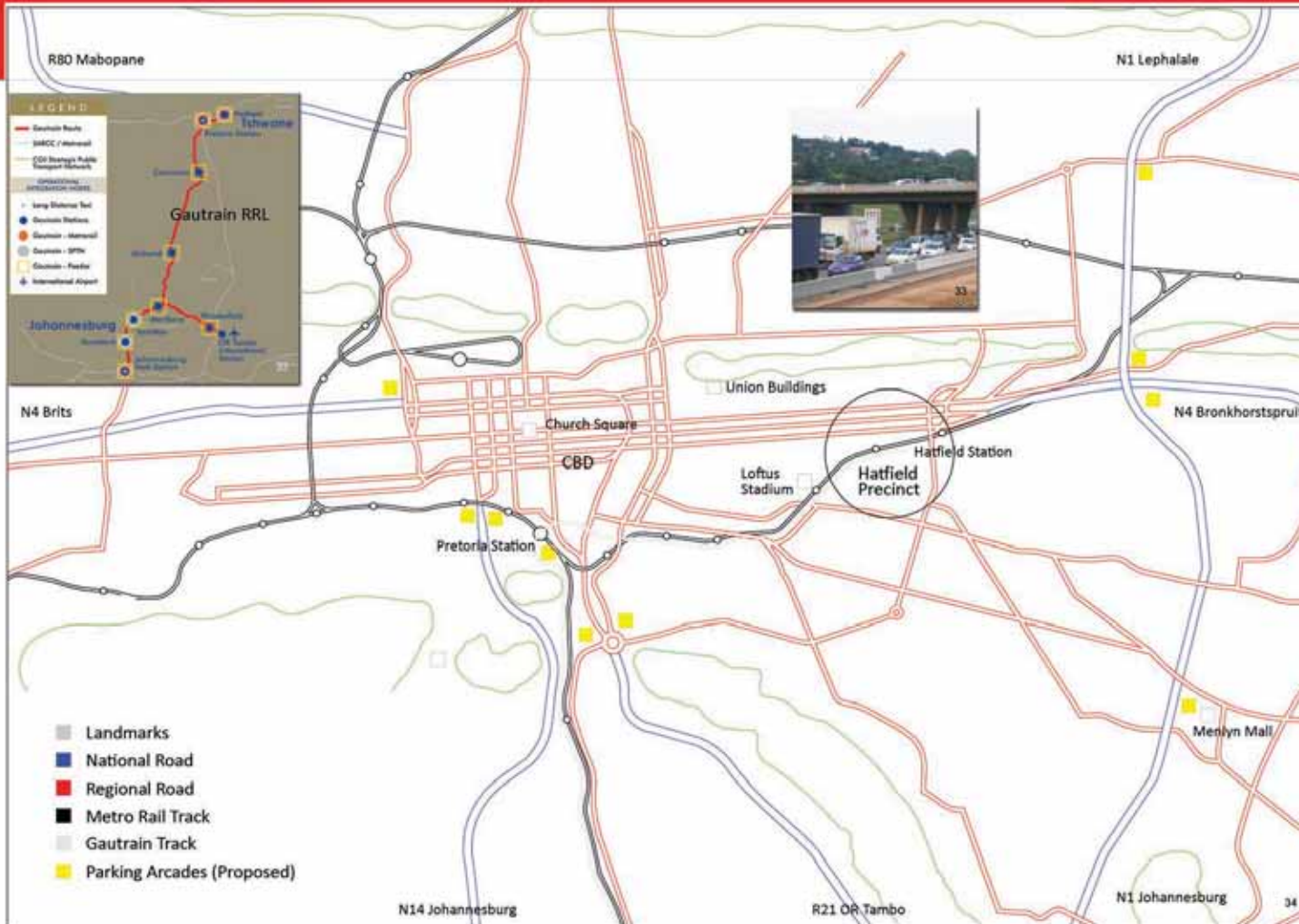
"Transport energy consumption increased by 22 % between 1990 and 2000. It is the largest energy-consuming sector, being responsible for about 35 % of total energy consumption in 2000. ... and road transport is the biggest, consuming around 72 % of transport energy"

European Environment Agency (EEA) Report: Energy consumption (2003)

"In recent years an academic and public discourse has led to this use of the word sustainability ... the challenging emphasis has been on human systems and anthropogenic problems, such as anthropogenic climate change, or the depletion of fossil fuel reserves ..."

(<http://en.wikipedia.org/wiki/Sustainability>)

In a scientific study done by the International Road Transport Union (IRU), it was noted that "... environmental efficiency of transport will be measured mainly in terms of primary energy consumption and CO2 emissions." The whole of the world's economy depends on the transport of goods and people, to and from market places. Being the single most important activity of the economy, it is the biggest consumer of energy and would thus be the biggest polluter as well. The deduction is thus that a more efficient transport system would be more sustainable.



From its humble beginnings as the capital of the ZAR in 1860, Pretoria expanded over the years; but did not follow 'traditional' growth from the center outwards. Due to *apartheid* principles followed by previous government city planners, townships were created (for non-white people) that were great distances from the CBD where they could only work and not live - the legacy of daily distance commuting. Eventually people could live where they wanted to.

The poor, seeking opportunities, moved to the city center, which resulted in the middle and high income population to move from the CBD to settle in suburbs in the north and east of Pretoria. As both Pretoria and Johannesburg grew, more people started commuting between these two cities, mainly along the N1 highway, which also connects the country from the north in Musina to the south in Cape Town, making it a very busy artery, especially in Gauteng (which generates 36% of the country's GDP) where it has resulted in heavy traffic congestion.

These factors prompted the Gauteng Provincial Government to develop the Gautrain RRL.



Design Context

Can we as architects make a difference?

"Building is a fundamental human activity, and yet our relationship to the built environment has gone way off course. This is due, in large part, to people's disconnectedness from the natural process of building, and instead turning over the responsibility for housing themselves to highly industrialized mass building practices. These practices have had catastrophic ecological consequences, are responsible for high rates of homelessness, and their social and psychological costs are devastating and incalculable."

Ann V. Edminster

http://www.earthlearning.com/earthlearning_admin.html

In terms of the *Triple Bottomline* principle, economic, social and environmental aspects have to be considered to ensure comprehensive sustainability. And many a time these aspects overlap. The scope of this document will deal mainly with the environmental effects resulting from the resources we consume to build with.

Several systems have been developed the world over to measure the sustainability of architectural interventions. The following two pages reflect the views of the *Canadian Architect* website.

http://www.canadianarchitect.com/ast/perspective_sustainability/measure_of_sustainability/measure_of_sustainability_intro.htm

At present the most commonly available simple (less complex) measures include:

- Embodied Energy
- Operating Energy
- Exergy (Absolute Energy Efficiency)
- Durability
- Externalities

These five measures provide valuable insights into the environmental impacts associated with human activities, and become useful components in the following multidimensional measures of sustainability:

- Ecological Footprint
- Eco-Labeling
- Life Cycle Assessment (LCA)²⁹

Embodied energy

Initial

Non-renewable energy consumed in the acquisition of raw materials

Direct energy

Transport products to site
Construct the building

Indirect energy

Acquire, process, and manufacture of materials, including transport

Recurring

Non-renewable energy consumed to maintain, repair, restore, refurbish or replace materials, components or systems during the life of the building.

MATERIAL	EMBODED ENERGY	
	MJ/kg	MJ/m ³
Aggregate	0.10	150
Straw bale	0.24	31
Soil-cement	0.42	819
Stone (local)	0.79	2036
Concrete block	0.94	2360
Concrete (30 Mpa)	1.3	3180
Concrete precast	2.0	2790
Lumber	2.5	1380
Brick	2.5	5170
Cellulose insulation	3.3	112
Gypsum wallboard	6.1	5890
Particle board	8.0	4400
Aluminum (recycled)	8.1	31870
Steel (recycled)	8.9	37230
Shingles (asphalt)	9.0	4930
Plywood	10.4	5720
Mineral wool insulation	14.6	139
Glass	15.9	37560
Fiberglass insulation	30.3	970
Steel	32.0	251200
Zinc	51.0	371280
Brass	62.0	519960
PVC	70.0	93620
Copper	70.6	631164
Paint	92.3	117300
Lithium	116	150030
Polystyrene insulation	117	3770
Carpet (synthetic)	148	84900
Aluminum	227	515700

29 NOTE: Embodied energy values based on several international sources - local values may vary.

Operating energy

Consumption of energy for heating, cooling, ventilation, lighting, equipment and appliances. Passive systems rely on the building envelope to take advantage of natural energy sources such as sunlight, wind, water, and the surrounding soil.

Active energy systems represent mechanical, electrical and/or chemical processes. Occupants of buildings can also contribute to the heating of buildings by virtue of metabolic processes.

Exergy - Absolute Energy Efficiency

Combination of energy quantity (which is conserved according to the first law of thermodynamics) and energy quality (which is consumed according to the second law of thermodynamics).

Exergy = Energy Quantity X Energy Quality
Energy is efficiently used when the quality of the source is matched to the quality demanded by the task. Are we using a 'chainsaw to cut butter'?

Durability

From a sustainability perspective, a material, component or system may be considered durable when its useful service life is fairly comparable to the time required for related impacts on the environment to be absorbed by the ecosystem. Non-durable components e.g. services and envelope, result in high life cycle costs due to maintenance, repair and premature replacement. It is often compromised when confusing it with the issue of first costs. It implies the need to contextualize the forces and phenomena impacting the building, thus envelopes will differ according to climatic zones and occupancies. Even different solar and wind orientations. An inflexible building which is not adaptive to evolving use could face demolition even though all of its components are durable and performing adequately.

Externalities

Environmental benefits or costs resulting as an unintended byproduct of an economic activity that accrue to someone other than the parties involved in the activity or economic transaction e.g. air pollution, Greenhouse gases, water pollution and land pollution. These are the costs that are not normally taken into account and at present, the environment is footing the bill for externalities.



Ecological Footprint

A measure of a community's demand on the global carrying capacity, which compares this with nature's available long-term carrying capacity. Unlike the previous measures of sustainability, ecological footprint is not confined to buildings and architecture, but holistically regards all human activities. Viewed from an architectural perspective though, it would be interesting to see if architects actually use more or less than one square metre of available ecological carrying capacity to deliver one square metre of building area, thereby demonstrating that less is more.

Durability Precedent:
Cedar Shake Clad Building,
Fruitvale, B.C. (circa 1900)



Eco-Labeling

Attempt to provide an indicator of how well a product is environmentally adapted. Typically, eco-labels are derived from programs having government, industry and consumer representation. Environmental standards and methods of assessing compliance to their requirements form the basis of eco-labels, which are normally issued by an independent certification organization. It attempts to encourage the manufacturing of products with a reduced impact on the environment, and to address public concerns about raw material scarcity, shrinking landfill space, and the impact of pollutants on the air and water. Eco-labeling is fundamentally different from the setting of minimum product standards or requirements in that it is intended to reward environmental leadership.

Life Cycle Assessment (LCA)

"Life Cycle Assessment is a process to evaluate the environmental burdens associated with a product, process, or activity by identifying and quantifying energy and materials used and wastes released to the environment; to assess the impact of those energy and materials used and releases to the environment; and to identify and evaluate opportunities to affect environmental improvements. The assessment includes the entire life cycle of the product, process or activity, encompassing, extracting and processing raw materials; manufacturing, transportation and distribution; use, re-use, maintenance; recycling, and final disposal"
(Guidelines for Life-Cycle Assessment: A Code of Practice, Society for Environmental Toxicology and Chemistry, SETAC, Brussels, 1993.)

Context
Site Orientation



Context

Site Analysis and Conclusions

Urban fabric

The building need to react to both the city grid and the angle of the railway track. The style of the surrounding buildings sets no particular trend, but is rather a 'hodgepodge' of architectural languages and activities. This particular city block is currently an obstacle because of its size and impermeability, but with the introduction of the plaza across the railway tracks, it will become much more permeable and can become the 'crossroads' of Hatfield. It is ambiguous in that it becomes a destiny because it provides a throughfare.

Prime Location

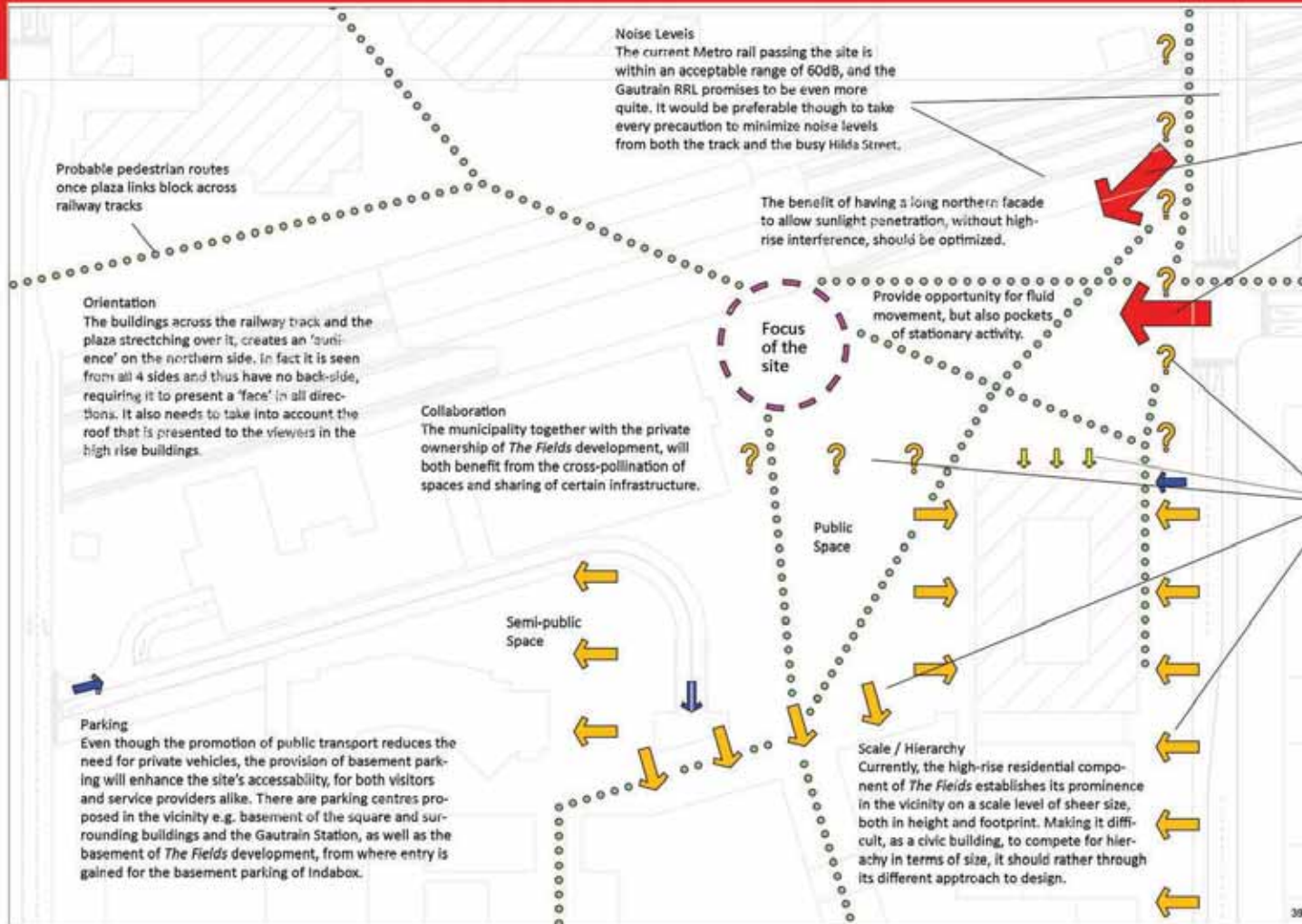
Being part of the urban core with its high densification, proximity of major public transport nodes, commercial activities, offices and residential areas, it creates a magnet for people. Providing a constant flux of people throughout the day and night, the area increases a sense of safety that enhances 24 hour activities. It can easily become the 'spill-out space' for the adjacent high density residential component. The site has the potential to become one of the well-known points of reference in the city. Making this the ideal location for civic functions.

Genius Loci

The building and its spaces needs to add to the vibrancy of both day and nighttime activities that are associated with this central urban hub that is infused with the energy of student life. It is an interesting place where people mix to 'see and be seen'.

Security

Even though the concentration of people tend to provide safety, the addition of visible security presence, especially the quite morning hours, will ensure peace of mind.



Moving down Hilda Street in a southern direction, the facade edge opens up and thus offers the corner of the site an opportunity to become a feature point.

The site is a focal point for people moving along Park Street in a westerly direction.

Spatial experience

Overall the character of the spaces in and around the building should reflect a quality of public realm that is inviting and embracing. The public space forming within *The Fields* development needs to be more defined. Currently it is 'leaking out' towards the railway track, where it blends in with the space created along Hilda Street that is also 'leaking out' where it crosses the railway line. It faces the challenge of defining the eastern street edge while at the same time:

presenting an 'invitation' for the public to pass through to the plaza on the other side
allow northern light into the proposed neighbouring building

Landscaping

The site will endure a lot of pedestrian traffic and is thus not suited for lawns. Enough trees should be added to minimize MRT from the hard surfaces. Water features should be considered to utilize the benefits of evaporative cooling. Encourage the use of indigenous trees and plants that are water efficient. Robust street furniture to handle high intensity use and possible vandalism.

Green Open Space

There is a significant absence of a green recreational space within the immediate area of the high density residential component.

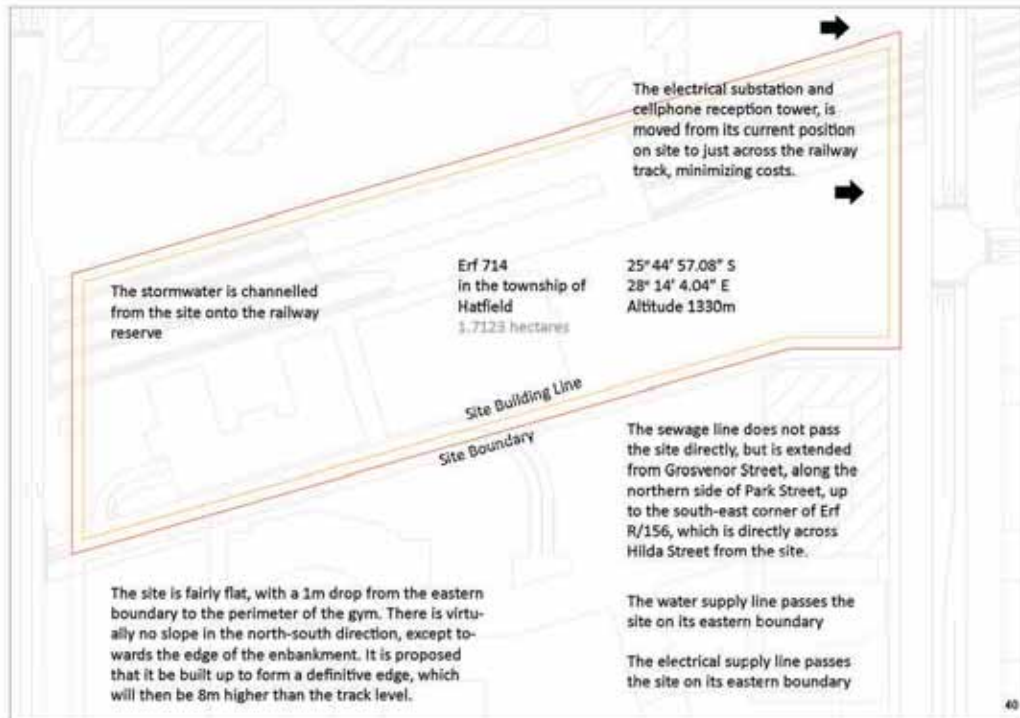
Context

Site Information

Owner:
Together with Erf 6/620 (north side of track) it forms part of the rail reserve, which is owned by the government (SARCC) and managed by Intersite.

Pretoria has a very mild climate, but extremes of -6°C and 36°C have been recorded. Temperatures are ranging from 14°C to 28°C on average in the summer and 4°C to 19°C in the winter with frost overnight during the coldest months of June and July. It falls within the summer rainfall area and precipitation is normally in the form of thunderstorms of which the biggest delivered 160mm in one hour. Normally the rainfall is 120mm/month during the peak season in December and January and 670mm annually, with an average of 87 days of rainfall per year. During the rainy season there is a moderate discomfort level experienced from the humidity.

According to information from the South African Weather Service



DESIGN DEVELOPMENT PART C

Precedents

The Indabox design project has a very distinct civic nature, namely that of being functional and filled with meaning at the same time, which has its own way of making spaces. For this reason I investigated the following projects.

As the site is one of the busiest transport nodes in South Africa, with nearly 70% of Sowetons using it, the government decided to formalize it through a design that would at the same time serve both as a gateway to Soweto and a well functioning terminus. A public catalyst for the development of urban spaces.

The design incorporates a promenade from which the observer experiences movement in both directions. Thus the arcade was created that provides the structural spine onto which all the functions are attached e.g. the street traders, ablution amenities and offices. It is these functions that spatially differentiate the arcade, which is essential as its length is vast. Added to this are the landmark structures positioned at main public entry points that ensures a sense of orientation and grants a center of attention for the artwork by locals. This also helps to foster a sense of identity and ownership by the users.

The arcade was formed by the use of sculpturally formed elements to avoid monotony, given the length and scale of the site. Concrete was the chosen material as it is virtually maintenance free and very robust, which is essential to any built structure that is totally exposed to harsh climatic elements and possible vandalizing of the structure. The empiricism evidently played a great role in the design process.

The functionality of the structure was unmistakably of paramount importance in the designing thereof. The question is just how functional is it?

The material used and the way it is manipulated does not relate to the everyday use of the structure, namely being an efficient shelter. There are very few concrete benches and it will be too cold to sit on them during winter and the structure does not provide adequate protection against cold winds. During the summer the roof overhang will not provide sufficient protection against rain, resulting in wet commuters and seeping benches. There is also a lack in the solar design, as the sun does not penetrate the inner courtyards during winter and yet will unwelcomingly penetrate along the arcade during the season between the two equinoxes when there is still a relatively warm climate. Furthermore the vendor facilities are accommodated in enclaves that is hidden away from passersby and for which they probably have to pay rent, rendering it ineffective to the users thereof as one can perceive from the fact that few of these stalls are open.

I was left with the impression that this building is not a fully successful attempt at a functional modern design.

The site was chosen for its intense symbolism of suffering during the Apartheid years. A legacy that left a city and its people fragmented and segregated. The new building was thus to bring healing to parts of the city, as to render it accessible, safe, amenable and dignified for the benefit of its entire people. Its location however seems to detract from its accessibility to the passerby and it thus becomes a place that has to be specifically visited, and not an everyday reminder of the message it encapsulates.

The focus of the hill is the Court itself. The building theoretically contradicts the inaccessible and offensive jail buildings of the previous autocratic state, of which remnants are juxtaposed with the new on the square and inside the foyer. The public foyer and Court Chamber located in the south wing is directly accessible from Constitution Square and leads further to the north wing, via the internal stairs that links these areas and functions as gallery space. The potential of the space leading to a climatic experience is however lost with the visitor finding himself at a dead-end at the supposedly public library, which is not inviting at all. You then have to turn back empty handed, and walking past the inaccessible offices, of those who are to protect us, you can not help but to feel as if salt is rubbed into your wounds of disappointment.

The 'openness' of the Court represents the transparent democratic society called for in the Constitution, and yet one wonders who will be the select few to actually attend these all important court cases, in view of the number of seats actually available.

The material used exists of a limited and basic palette borrowing forms and strategies of both modern and preceding – declaring the 'pastness' of both. The concrete is exposed and unanimated. The carcass of the building is of plastered brickwork and glazed curtain walling. The additional patina of in-situ work by artists and craftsmen adds to the detailing one finds throughout the building, responding to what seems to be an innate human desire for elaboration and the instinct to relate human size to building size. More is thus more in this very expressive building.

The whole design is loaded with meaning, as it intentionally promotes the values that should be upheld by all South Africans. Because the designers understood what they wanted to say, it guided their thinking in the use of semiology and semantics to uncover the meanings intended in the design. But perhaps much of the meaning is lost to the ordinary man on the street, except the very obvious? It could be that this building is just a monument for the benefit of the thinking man.



Baragwanath Public Transport Interchange and Traders Market
Soweto, Gauteng
Urban Solutions Architects and Urban Designers



Constitutional Court and Constitution Hill
Johannesburg, Gauteng
OMM Design Workshop & Urban Solutions Architects and Urban Designers

Design Approach

You employ stone, wood and concrete, and with these materials you build houses and palaces; that is construction. Ingenuity is at work. But suddenly you touch my heart, you do me good, I am happy and I say: "This is beautiful." That is Architecture. Art enters in.

Le Corbusier



Taking the examples of airplanes and automobiles, Le Corbusier attributed the beauty achieved in its design to its production as a solution to a clearly defined need. Hence, the house as a 'machine for living in'. On the other hand, he believed that neither the man in the street, nor even the architects themselves realized what architecture was truly all about; namely the ability of it to emotionally move a person, much more so than just a mere construction of elements. It is clear that humans design things to fulfill a need that is both physical and emotional - solving a practical problem in an aesthetically pleasing way.

In terms of architecture, Leupen et al (1997:13) states that the basic concern is with a given program and a location. Added to that would be the fixed precepts and demands of the culture or convention, and finally the design must satisfy conditions of usefulness and construction.

Glenn Murcutt (Beck and Cooper, 2002:11) is of the opinion that anyone can design; it is more a matter of investigating and understanding the issue, and pursuing the problem until you make an appropriate discovery. He believes that by being a perceptive observer each of us could learn and achieve much more.

"Nature does nothing in vain, and more is in vain when less will serve; for nature is pleased with simplicity, and affects not the pomp and superfluous causes."

Sir Isaac Newton's Principia

The words of Mies van der Rohe, "beinahe nichts", reverberates down the passage of time. These words seem to have been birthed from a long struggle with the design process and reducing it until ...

almost nothing remains,
except the essentials,
the beauty of complexity.



Design Concept

"A soapbox is a raised platform on which one stands to make an impromptu speech, often about a political subject. It is also used to express concerns or to release frustration. The term originates from when speakers would stand on a wooden box meant for holding soap. Hyde Park, London is known for its Sunday soapbox orators, who have assembled at Speaker's Corner since 1872 to discuss religion, politics, and other topics. A modern form of the soapbox is a [website] blog ..."

<https://en.wikipedia.org/wiki/Soapbox>

The 'soapbox', or timber crate, is easy to recognise. You immediately know that it is used for storing and carrying a variety of things. It has other uses too. You can stand and sit on it, use it as a table, all the while turning it around on its sides for different effects. It is so simple, even a child can use it without ever having seen one before - it is thus not intimidating. And it is also easy to make one yourself. Even though just an unpretentious 'simple old box', it is very effective and strangely beautiful.

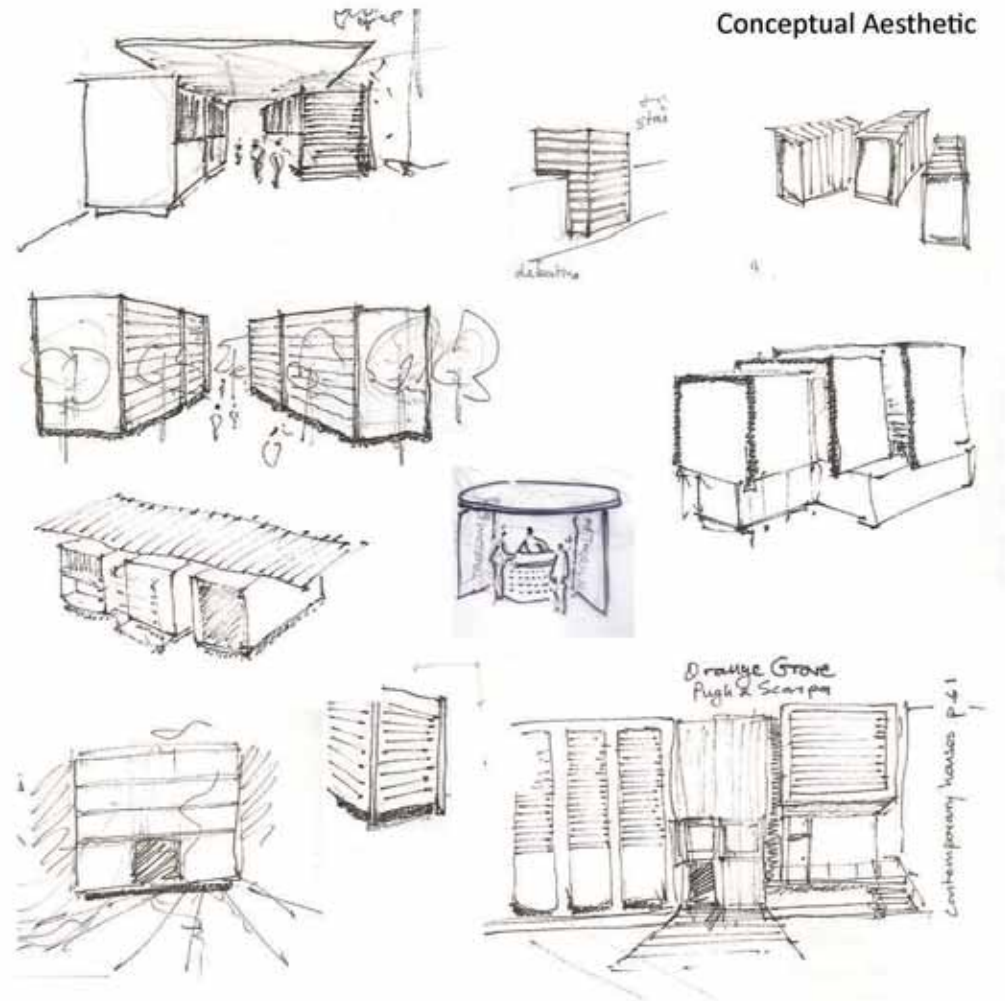
SIMPLICITY FUNCTIONALITY HUMILITY

It is especially true for a civic building, that legibility (aesthetically and functionally) would enhance the user's experience of it as 'friendly' and encourage future interaction. The normal 'behaviour' of civic buildings reflect a superior attitude of indifference. Perhaps it is time to rather reflect humility.

The simpler the construction method and materials, the more cost-effective the building will be, which is always a factor. It increases the availability of materials and labour, which can rather focus on mastering simpler skills. The more natural the materials are, the less humans have interfered and produced polluting waste by-products. Furthermore, it can be dismantled and erected at another location. Alternatively the materials can be used again in a different manner with the least amount of modifications, as it is standardized. Once it has lost its usefulness altogether, the material can be recycled into other forms. The material choice also influences the user's emotions and most people relate timber with something comfortable and approachable. Aesthetically the eye should follow lines without disturbances, casually considering the building, and finding it more interesting as time passes.





Conceptual Aesthetic



Programme Allocation

A Information Exchange	196m ²
Occupancy Class C2 - Population 40	
B Social Pub (smoking)	69m ²
Occupancy Class A1 - Population 40	
C Social Pub (non-smoking)	69m ²
Occupancy Class A1 - Population 40	
D Social Pub - Open air deck	86m ²
Occupancy Class A1 - Population 80	
E Discussion Room 1	46m ²
Occupancy Class G1 - Population 20	
F Cafeteria Kitchen	92m ²
Occupancy Class B2 - Population 15	
G Cafeteria Seating (non-smoke)	92m ²
Occupancy Class A1 - Population 80	
H Cafeteria Seating - Open air deck	104m ²
Occupancy Class A1 - Population 40	
J Open air Pavillion	78m ²
Occupancy Class A5 - Population 90	
K Radio Station	156m ²
Occupancy Class G1 - Population 13	
L PC Training / Subject Testing	40m ²
Occupancy Class A3 - Population 11	
MPC Training / Subject Testing	40m ²
Occupancy Class A3 - Population 11	
N Subject Training	173m ²
Occupancy Class A3 - Population 32	
O Discussion Room 2	46m ²
Occupancy Class G1 - Population 20	
P Discussion Room 3	23m ²
Occupancy Class G1 - Population 10	



-  Access onto exterior threshold
-  Access into building
-  Access from basement
-  Circulation space
-  Lift shaft
-  Stairs
-  Balcony
-  Ablutions - 56m² on each floor

Q Discussion Room 4	23m ²
Occupancy Class G1 - Population 10	
R Auditorium 1	104m ²
Occupancy Class A3 - Population 90	
S Auditorium 2	104m ²
Occupancy Class A3 - Population 90	
T Video Productions	156m ²
Occupancy Class G1 - Population 12	
V Subject Training	173m ²
Occupancy Class A3 - Population 32	
W Discussion Room 5	46m ²
Occupancy Class G1 - Population 20	
X Discussion Room 6	46m ²
Occupancy Class G1 - Population 20	
Y Discussion Room 7	46m ²
Occupancy Class G1 - Population 20	
Z Video Productions	39m ²
Occupancy Class G1 - Population 6	

Total Area
Total Population

AA Open Air Rooftop Balcony	357m ²
Occupancy Class A1 - Population 80	
BB Open Air Rooftop Balcony	156m ²
Occupancy Class A1 - Population 60	

Programme

Awareness

A **24 Hour Cafeteria** and **Social Pub** provides space for the public to sit and have meals together, for the sake of informal interaction between regular patrons, and in the process become aware of what is going on around them and to become involved with their 'neighbours'.

Citizens will be given the opportunity to proclaim their opinions on the **Informal Soapbox**, where they can literally reserve a wooden box on which to stand and address the public, as well as using the **Graffiti Wall**. A **Radio Station** promotes awareness among citizens of current issues on a continuous basis. **Exhibitions** in and around the building will inform the passerby of matters that might otherwise have gone unnoticed. The **Information Exchange** with hi-tech interface makes info available in paper and electronic format regarding local government issues, together with tourism and public transport information. Citizens will also be able to deposit authorized info.

Education

The **Information Exchange** will offer maps, documents, **Audio and Video Productions** and people to contact; as well as archives of all the facts and debates of the past. It will also house a scale model of Pretoria to give people a 3D view on the city's development.

Before the public can take part in the rest of the process, they will be subjected to an education procedure, to avoid time wasted by uninformed participants.



Social Pub



Radio Station



Exhibitions

Initial Voter Registration will ensure, through a testing procedure, that people are on the same page when beginning their journey as voters. They would thus first have to go through a training process, as access to information requires a basic level of literacy. In order to increase accessibility, **English Language Training** and **IT Training** will be made available to citizens. The **Body Language Training** and **Cultural Education** will also be necessitated to increase understanding among those taking part in debates.

Thereafter the more specific **Subject Education** is paramount, as it is aimed at informing participants of the specific matter under discussion.

Debate

in the beginning phases everyone will be encouraged to comment, using the newspaper columns, **Informal Soapbox**, **Internet Blogging** and **Radio Station** phone-in programs. Once the debate has gathered momentum though, the public will choose which advocates' informed proposals will be heard via the **Formal Soapbox**, **Information Exchange**, **Radio Station**, (played on all public transport) and official **Internet Website** with **Blogging** and **Webcasting**, as well as regular columns in newspapers.

For more locality specific matters, **Discussion Rooms** enable concerned parties to voice their opinions through the help of trained and well-informed facilitators. The use of audio-video technologies will aid participants to have meaningful sessions.



Formal Soapbox - Pavilion and Auditorium



Subject education



Discussion Rooms

Conclusion

As the allocated time for debates draw to a close, all the different opinions will be assimilated. Through a process of systematic reduction, the agreements and disagreements regarding the issues are identified and the public will be offered clear consolidated options from which to choose the way forward. These options will be made known through the use of the **Radio Station**, **Information Exchange**, **Exhibitions**, newspaper columns, and the official **Internet Website**.

Decision

Subject Voter Registration ensure that only those who are informed on the matter may take part in the decisionmaking. This will be done through a testing procedure. A hi-tech platform provide the basis for regular voting through **SMS** and **Internet Referendums**. Voting results will be made available through the **Radio Station**, **Information Exchange**, **Exhibitions**, newspaper columns, and the official **Internet Website**.

Enforcement

The citizens need to monitor whether public servants are executing their wishes and will thus be kept up to date on the implementation of their decisions through the use of the above mentioned media. An **Accountability Forum** will be held for public servants who fail to implement policies. These sessions will be open to the general public and decisions made will bear the necessary authority.



Information Exchange



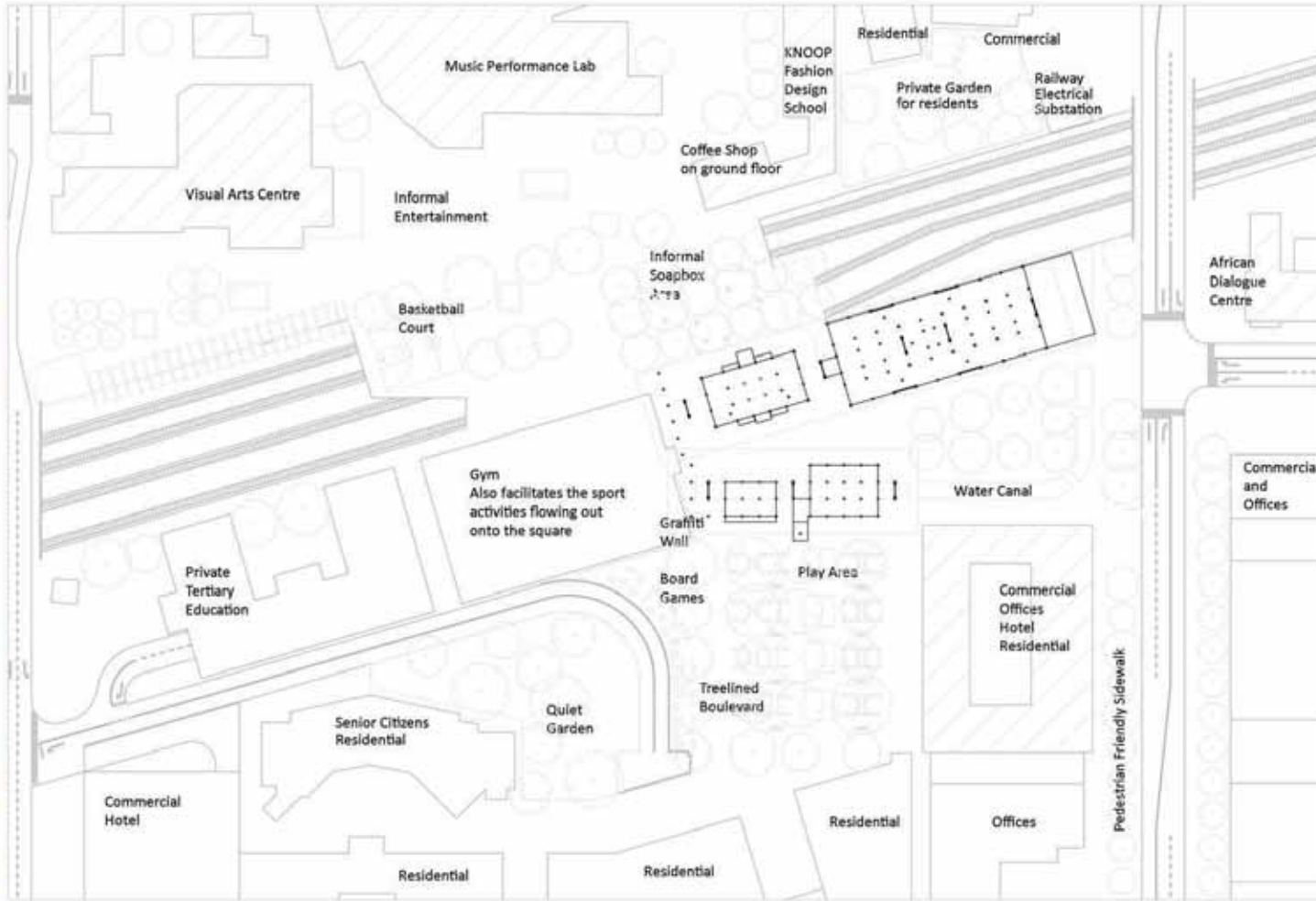
Accountability Forum



Information Exchange

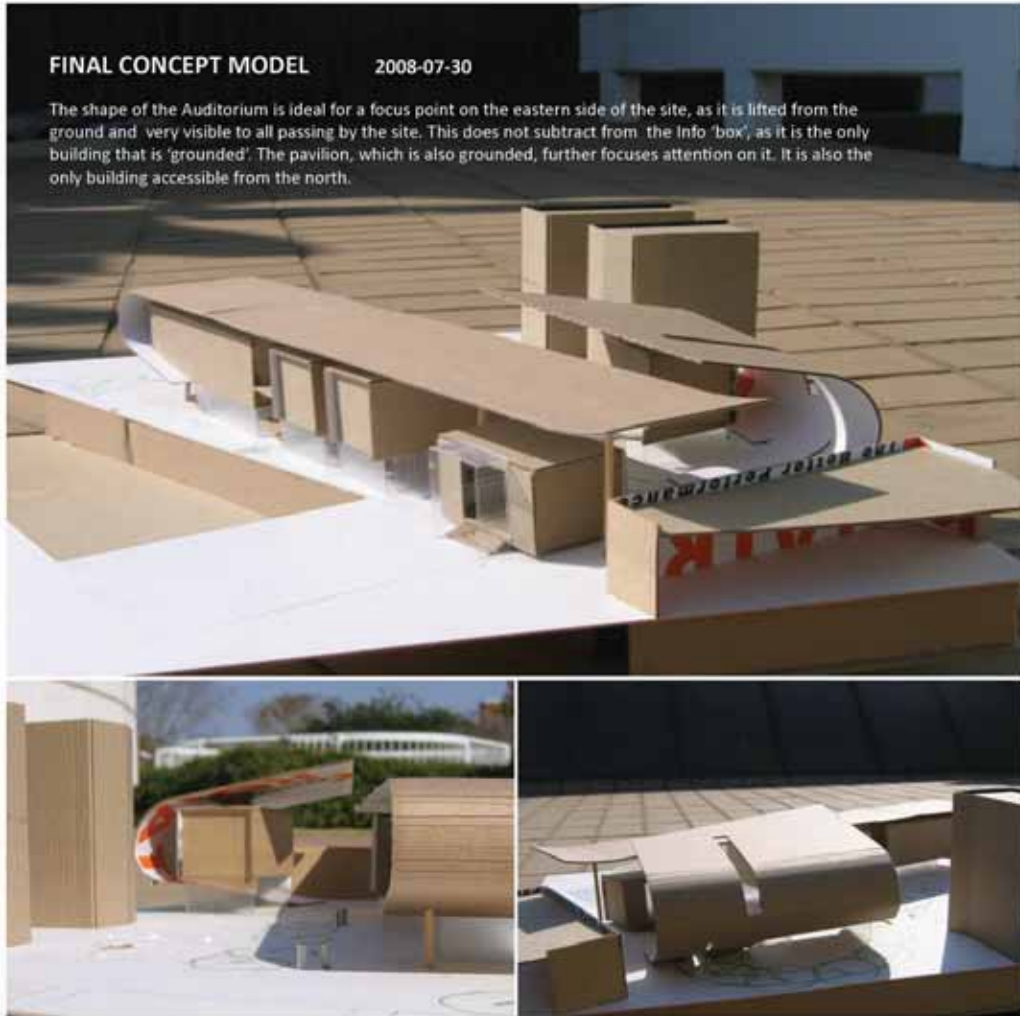
Proposed Context Development

1:1000



FINAL CONCEPT MODEL 2008-07-30

The shape of the Auditorium is ideal for a focus point on the eastern side of the site, as it is lifted from the ground and very visible to all passing by the site. This does not subtract from the Info 'box', as it is the only building that is 'grounded'. The pavilion, which is also grounded, further focuses attention on it. It is also the only building accessible from the north.



**DESIGN
RESOLUTION
PART D**



Negative

At this stage the design actually reflected the problem statement of the dissertation, instead of addressing it. Even though the programme consisted of diverse functions, it had to function as a whole. The two main buildings failed to 'communicate' with each other.

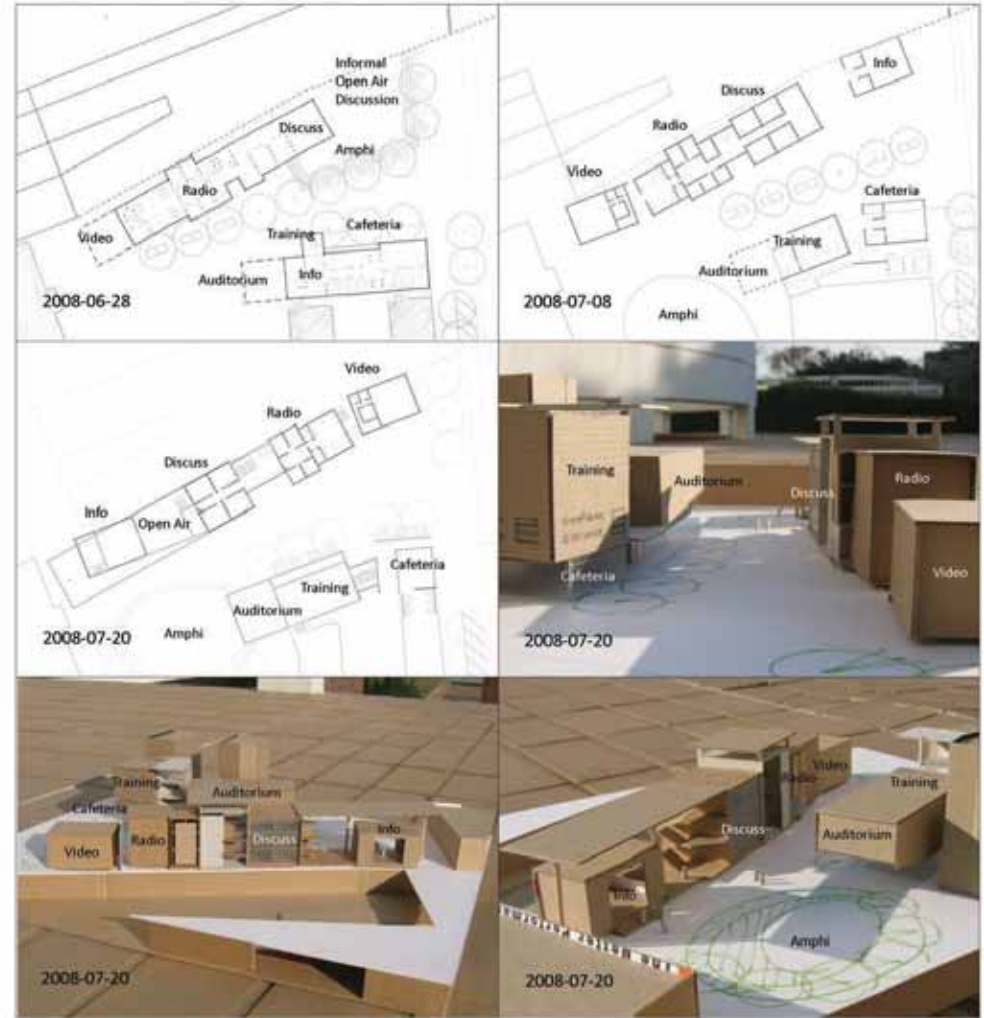
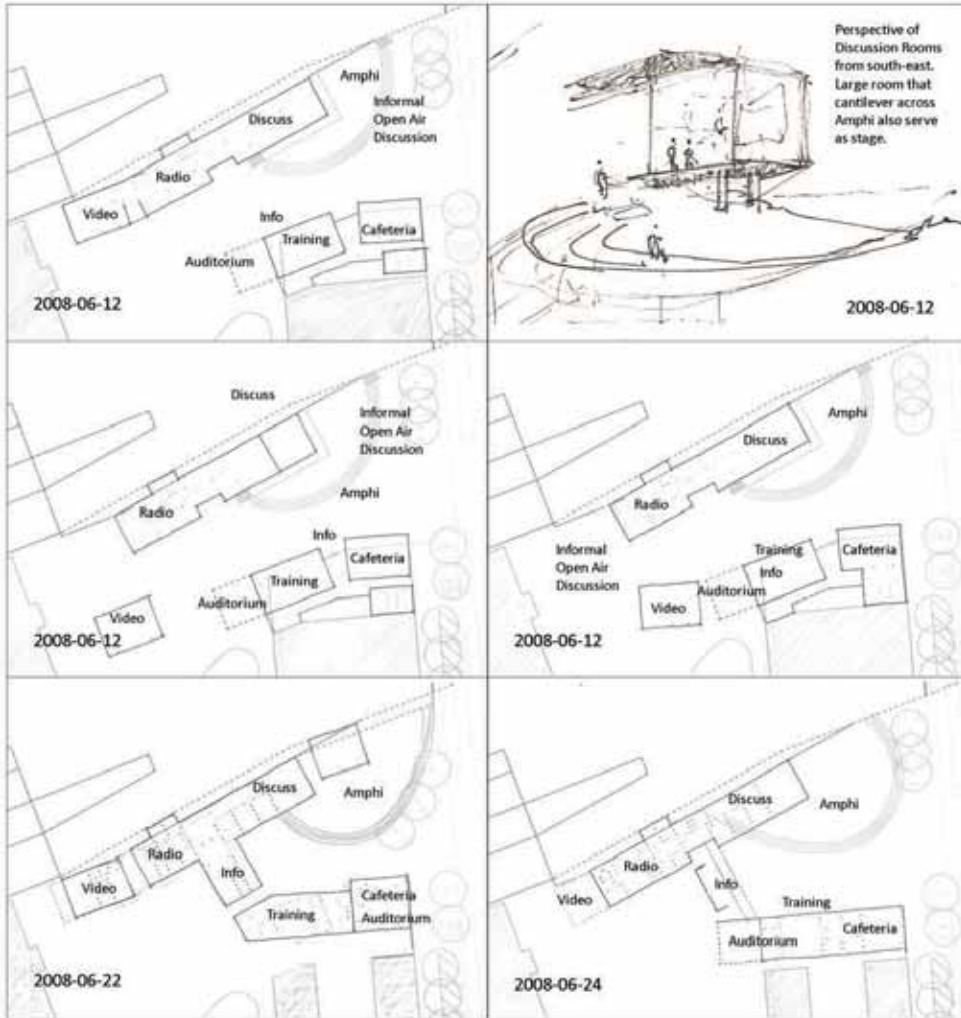
The complex on the northern side (along rail track) was too 'busy' and incoherent, destroying the legibility. The building is approached from three sides, requiring multiple access points, none of which should be 'monumental'. Yet it required a focus point, which was lacking.

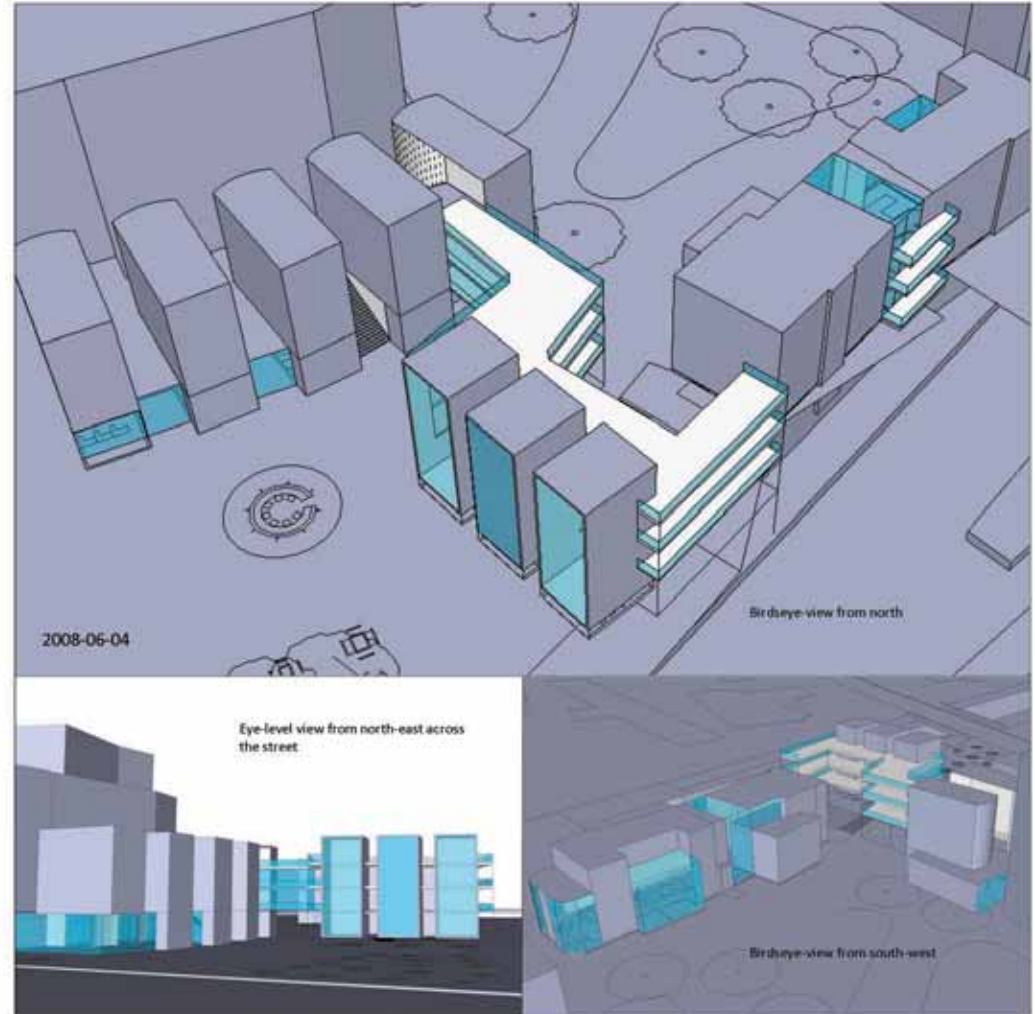
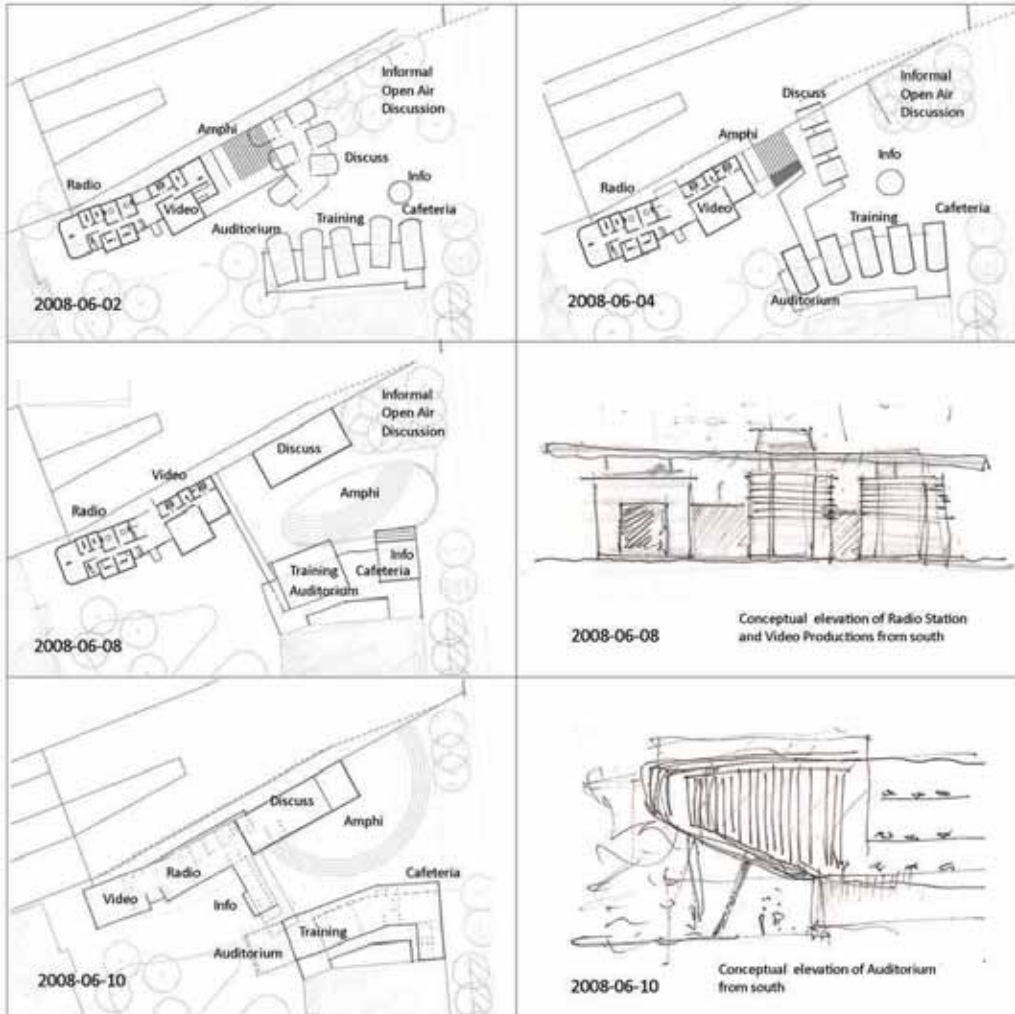
Positive

There existed two possibilities for a focus point, namely the Auditorium and the Info 'box'. I realised that the Info 'box' was positioned at the exact spot identified in the site analysis as the focus point of the site. Furthermore its programme required it to be the point of contact for the first-time visitor.

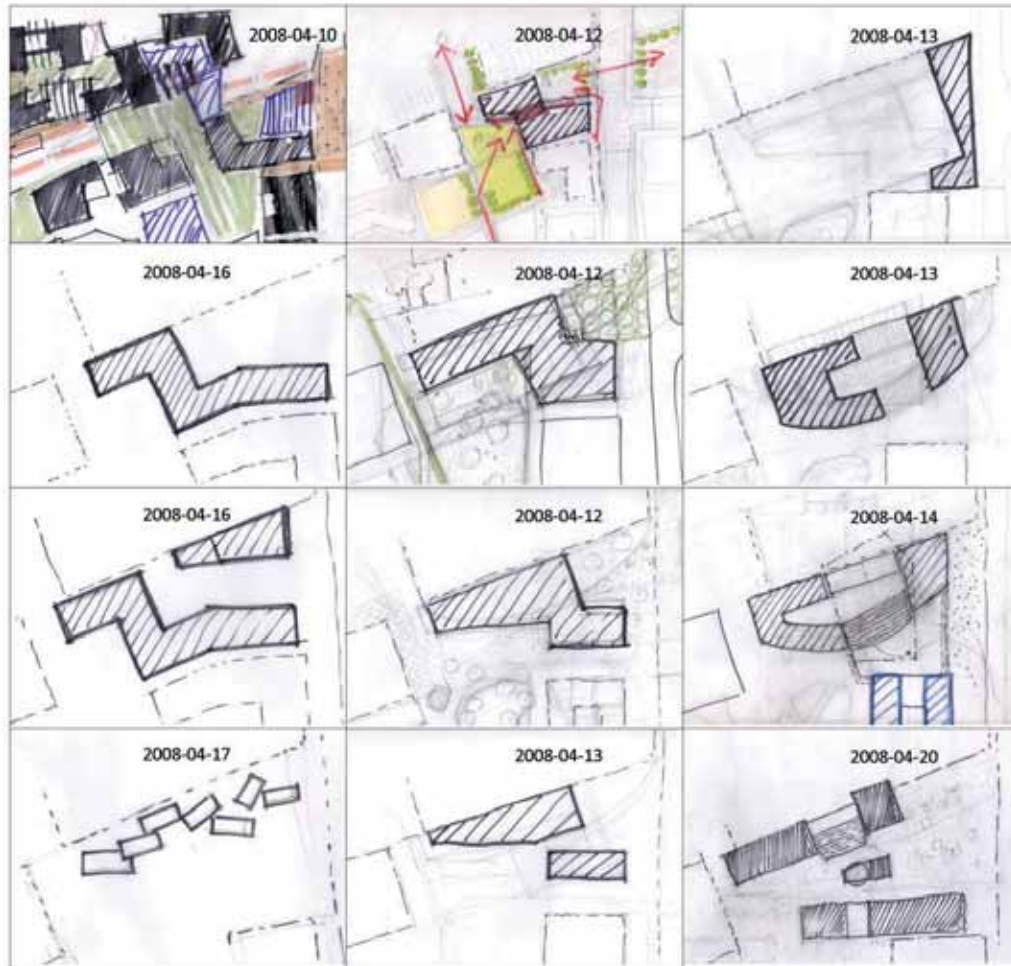
The buildings had to be separate to indicate the different programmes and to keep the scale approachable. However, it needed to share the same 'language' and be unified 'under one roof'.



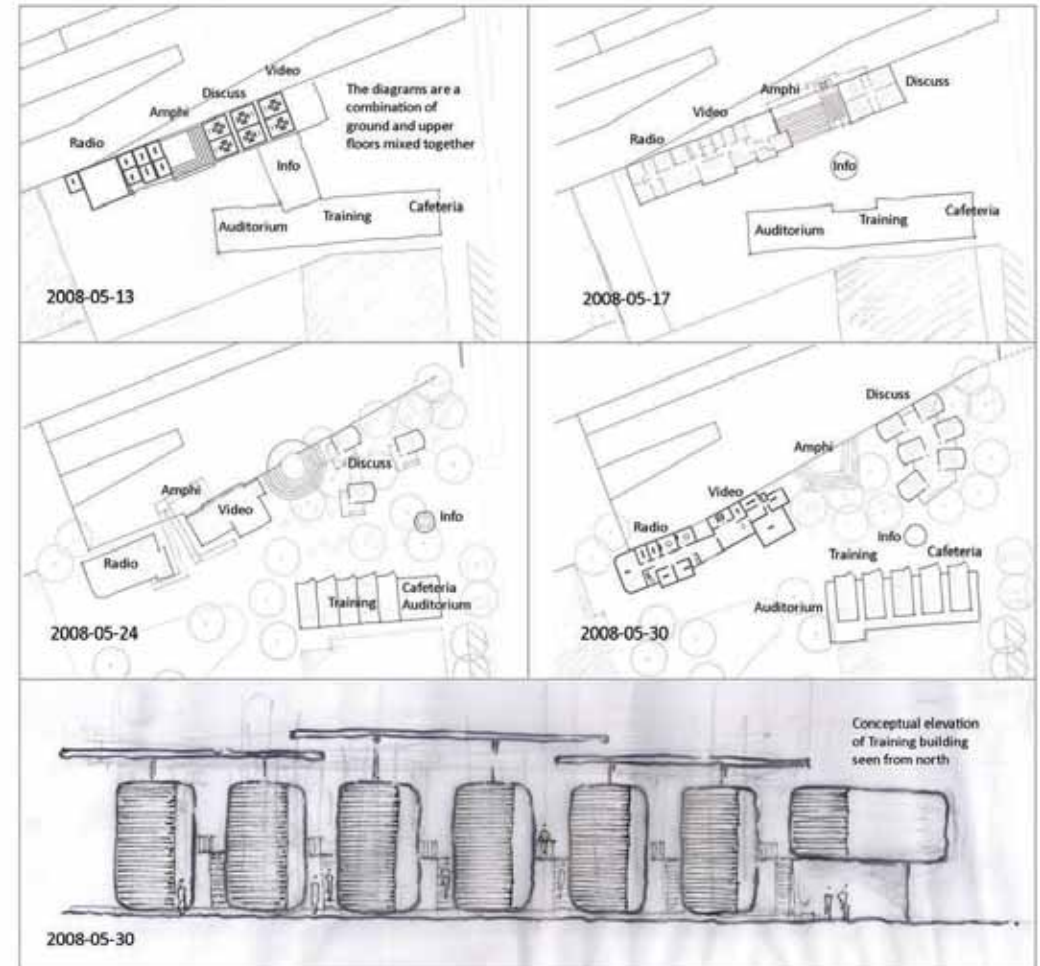




Building Footprint Development in order to define the exterior spaces



Building Volume Development after programme determination

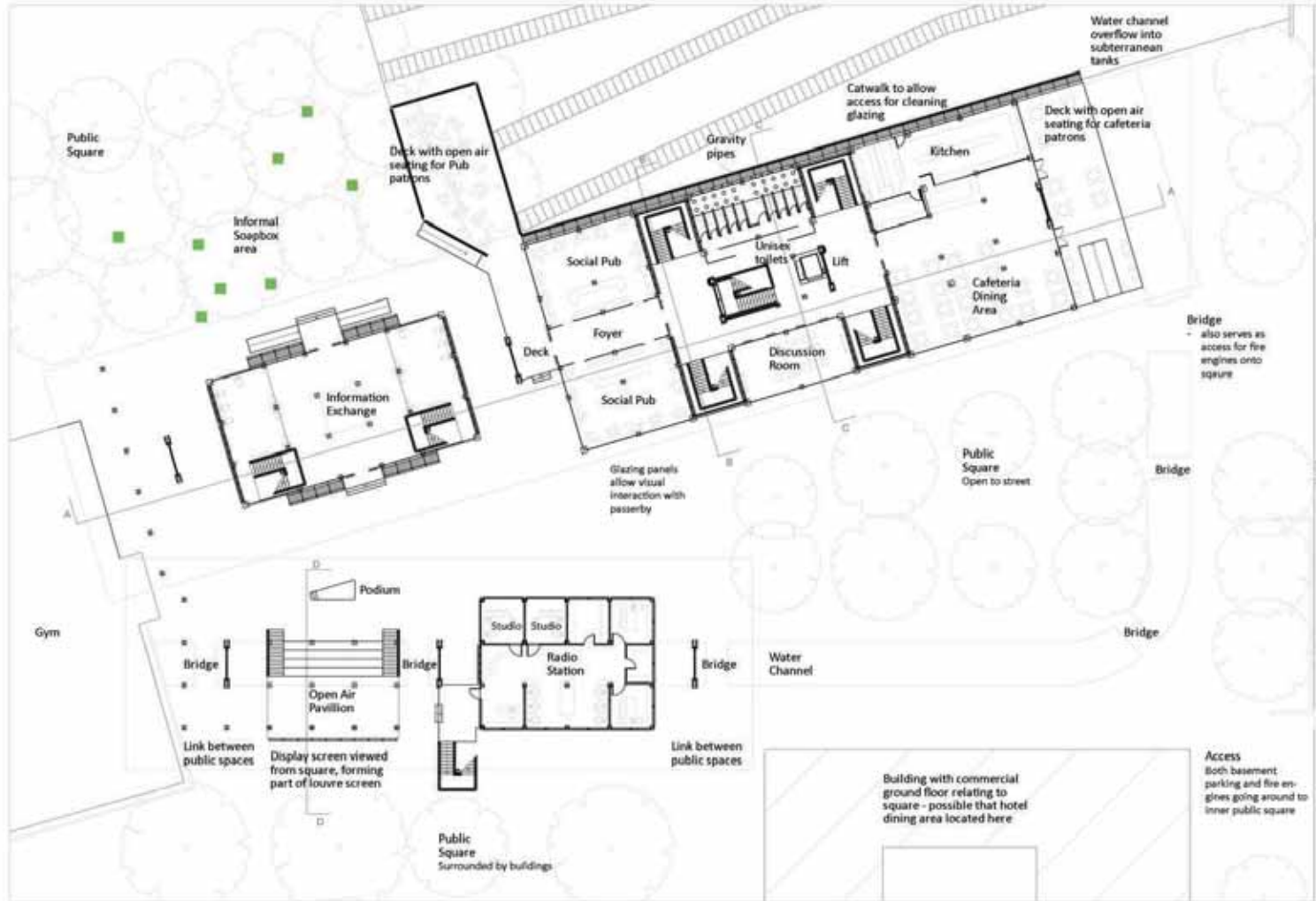


Plan - Ground Floor 1:400

For a civic building that encourages user interaction, it is essential that the building is legible, especially to the first time user. This does not mean that you grasp all of it in one take, but rather as you progress it just makes sense.

The focus point of the building is the Information Exchange, from where the public will be introduced to the programme and the rest of the facilities. It is placed where the different routes crossing the site converges. From all three directions it is hidden from plain view by the trees, and from the east and south the visitor first experiences other parts of the building before arriving there. These approaches are designed in such a way as to suggest that there is something more just a bit further. The curious nature of people are normally strong enough to pique their interest.

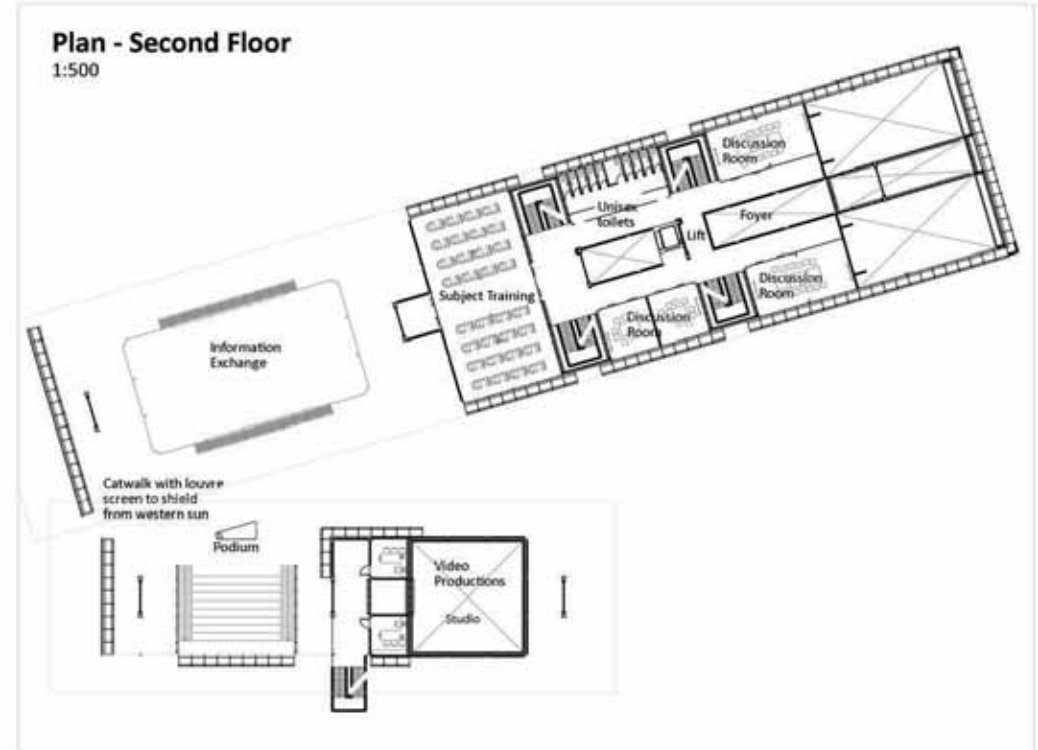
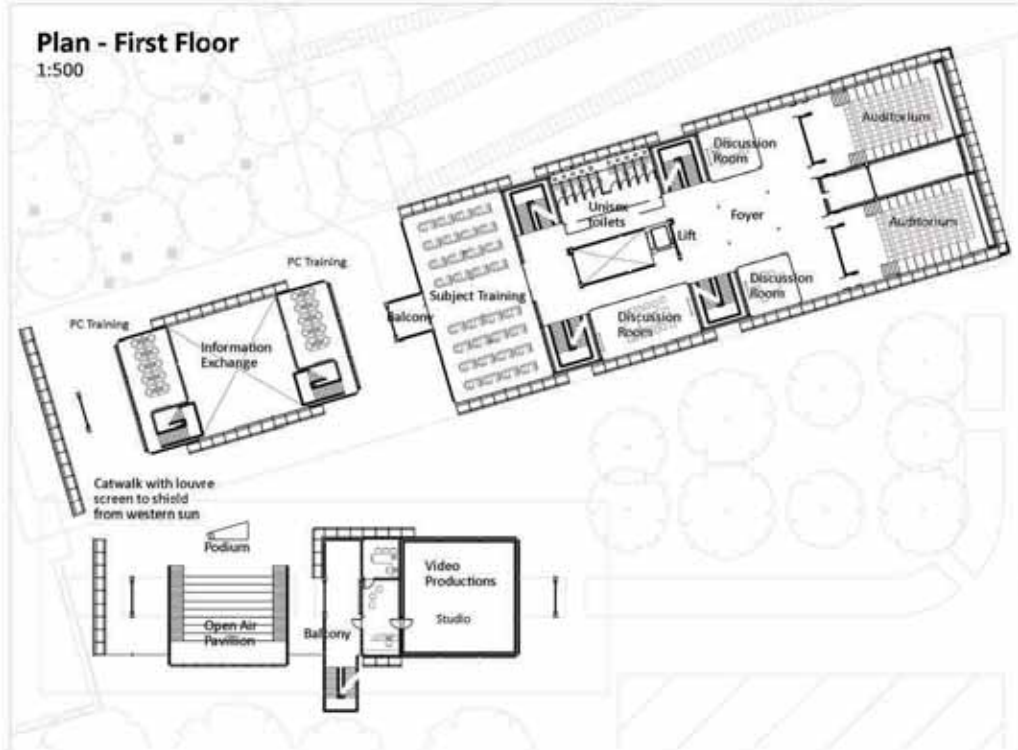
This 'crossroad' is designed to give the person, using it as a thoroughfare, a number of different options. This process builds a strong picture of the building into the user's mind. As with any kind of marketing, the stronger the picture, the better the recollection thereof.



The different activities on the ground floor has a somewhat odd combination, to evoke a 'double take' on a meeting held next to a pub. And being able to wave to the DJ on the radio as you walk past, puts a new 'spin' on interactive radio. Normally pavillions are deserted during the week, but here you have the opportunity to have your lunch 'samies', while enjoying the 'big event' of people walking past.

The Information exchange will have specialists assisting people to find what they are looking for on the system, which will be linked with all of the local government departments - making this their first point of contact, before being re-routed to the correct person. The staff does not have desks behind which they sit, but are rather encouraged to move around. There will be a scale model of the whole of Pretoria in the center of the double volume space.





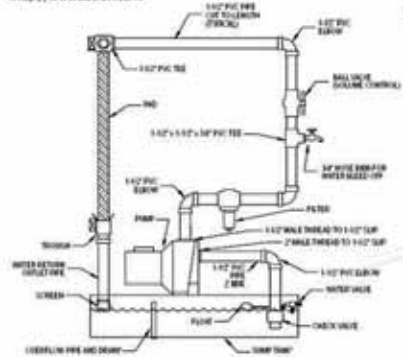


Evaporative Cooling Pads

Made of specially formulated cellulose paper, impregnated with insoluble anti-rot salts, stiffening saturants and wetting agents. It has cross fluted configuration that provides maximum cooling when warm air passes through the wet material.

- Natural way of cooling environment, water is not polluted in the process
- Pads will not sag, rot or develop holes
- Will last for 5 years with proper care and maintenance
- No carry-over of water droplets to enter the building
- Pads are self-supporting, and held in place by component parts of the system
- Pump and sump tanks situated in basement, only inlet and outlet pipes distributed along super-structure
- Pump supplies set of panels from ground to second floor. In event of breakdown, other sets of panels still working
- No central plant, no ducting required

<http://www.coolair.com>



Plan First Floor 1:400



**Warmcel® 500 Insulation Fibre
Soundcel® Acoustic Insulation**

It is damp spray applied onto open panel walls, sheathed with vapour permeable external sheathing. Once sprayed, it is levelled off to depth of the studs, ensuring wall is completely filled, with no air pockets or voids, even around obstructions. The internal panel then put into place to cover it. Moisture naturally dries out through the sheathing within a few days.

Benefits

- 100% recycled waste newspaper
- extremely low embodied energy
- zero ODP (Ozone Depletion Potential)
- contain no added formaldehyde and is free from CFCs, volatile organic compounds (VOCs) or other toxic substances
- reducing heating demand, reducing CO2 emissions.
- when removed from building, can be recycled at manufacturing facility or disposed of safely, without creating toxic waste or biodegradability problems.
- extremely resistant to fire (photograph). Performance achieved through addition of simple inorganic salts
- K value of 0.036 W/mK in walls
- Enhanced Vapour Transfer (EVT) - ensure natural moisture ingress always migrates safely and completely to the external atmosphere.
- Resistant to biological and fungal attack, treated against insects and unattractive to vermin.

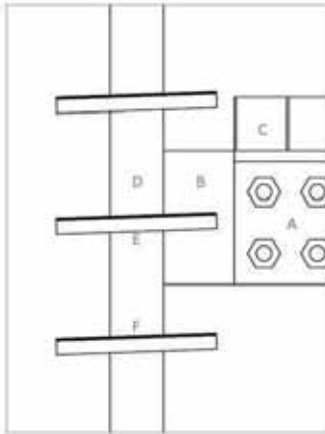
The sound absorption properties of Warmcel provide an effective solution to noise pollution and can be further enhanced by the Soundcel® product. Optimised sound absorption is achieved by engineering the fibre used in Soundcel and determining its degree of 'openness'. Properties, such as fibre length, density and the capacity for interweaving, all contribute in determining the final insulation performance of the material.

<http://www.excelFibre.com/downloads/files/Warmcel-brochure.pdf>

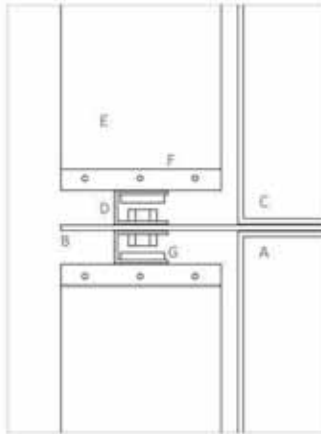


Control of Heat Gain and Heat Loss

Detail A
Section 1:5



Detail A
Plan 1:5



First a 10mm flat bar (B) is bolted between two 125x75x10 structural steel angles (A) that is bolted onto a structural steel bracket which is bolted onto the 203x102x25 structural steel I-section beam or column [where it coincides with the column grid]. This is not shown in this detail. Then the expanded metal grating (C) is bolted onto this support, stabilizing it horizontally. This support, that holds the grating and louvre screen in place, is spaced on 1200mm center lines.

Then a 3mm hot-rolled steel sheet (D) that is bent in a U-shape is bolted onto the flatbar (B). The steel sheet has 'slits' cut into it from the inside (showing to the building) at 106.5 center spacings and at a 2° angle to aid moisture run-off. The louvres are slid into these 'slits' from the 'inside' (between the screen and the glazing). The design facilitates easy removal of louvres for regular maintenance.

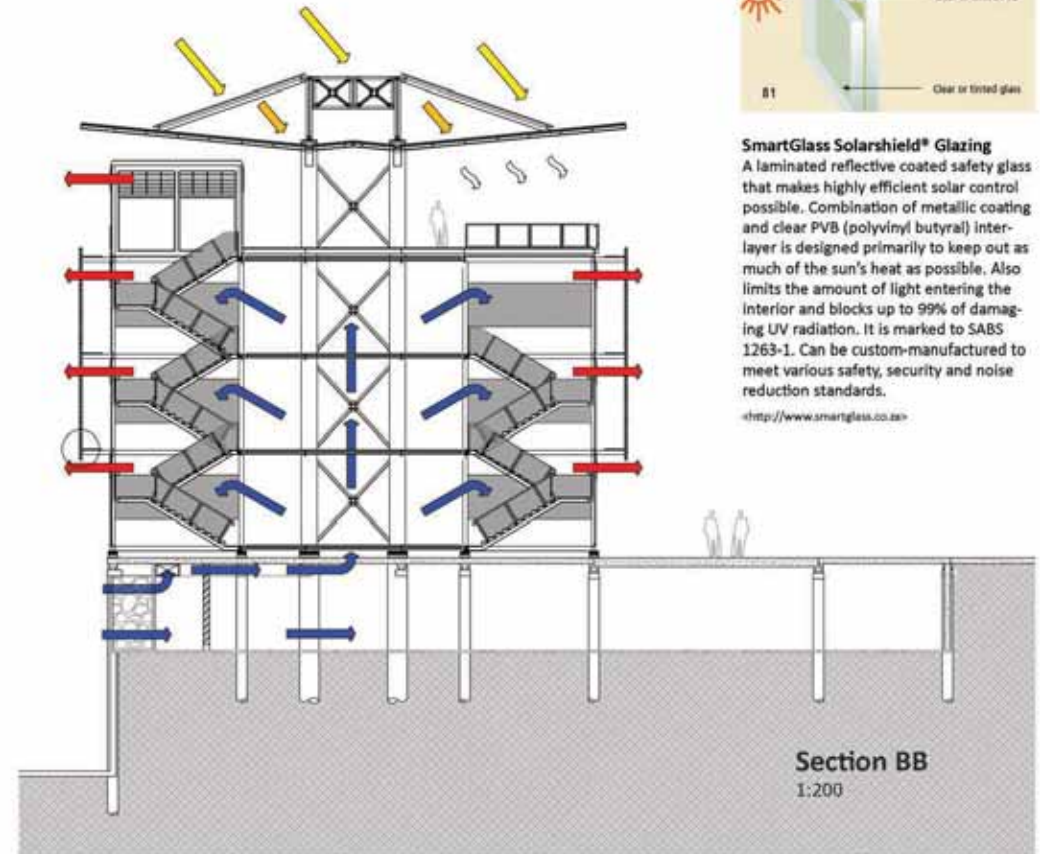
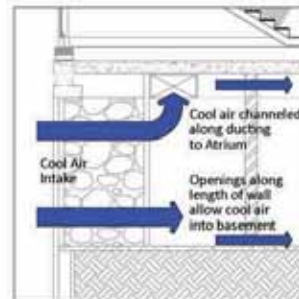
The louvre consists of a 13x144x1130 PAR timber plank (E) that has been treated with hemp seed oil to render it water resistant. A 20x13 L-shaped 1.6mm hot-rolled steel sheet bracket (F) is attached onto each end. A 10mm wide 1.6mm hot-rolled steel sheet (G) is welded onto this bracket to enable it to be slid into the U-shaped steel sheet (D).

According to Boutet (1987), the movement of air is caused by two reasons. The buoyancy of heated air and pressure differentials - both of which is used in this building. He further describes the three functions of air movement, namely:

- Air quality - reducing pollutants
- Energy - reducing heat loads from solar access and equipment
- Comfort - creating a comfortable interior environment

Cook (1989) notes that psychological elements also play a role in our perception of comfort. As an example he described how people (in an experiment) perceived two containers with same temperature, but different interior materials, as different in temperature. The timber interior were experienced as more comfortable.

Rock Bin
Section 1:100



SmartGlass Solarshield® Glazing
A laminated reflective coated safety glass that makes highly efficient solar control possible. Combination of metallic coating and clear PVB (polyvinyl butyral) inter-layer is designed primarily to keep out as much of the sun's heat as possible. Also limits the amount of light entering the interior and blocks up to 99% of damaging UV radiation. It is marked to SABS 1263-1. Can be custom-manufactured to meet various safety, security and noise reduction standards.

<http://www.smartglass.co.za>

Services



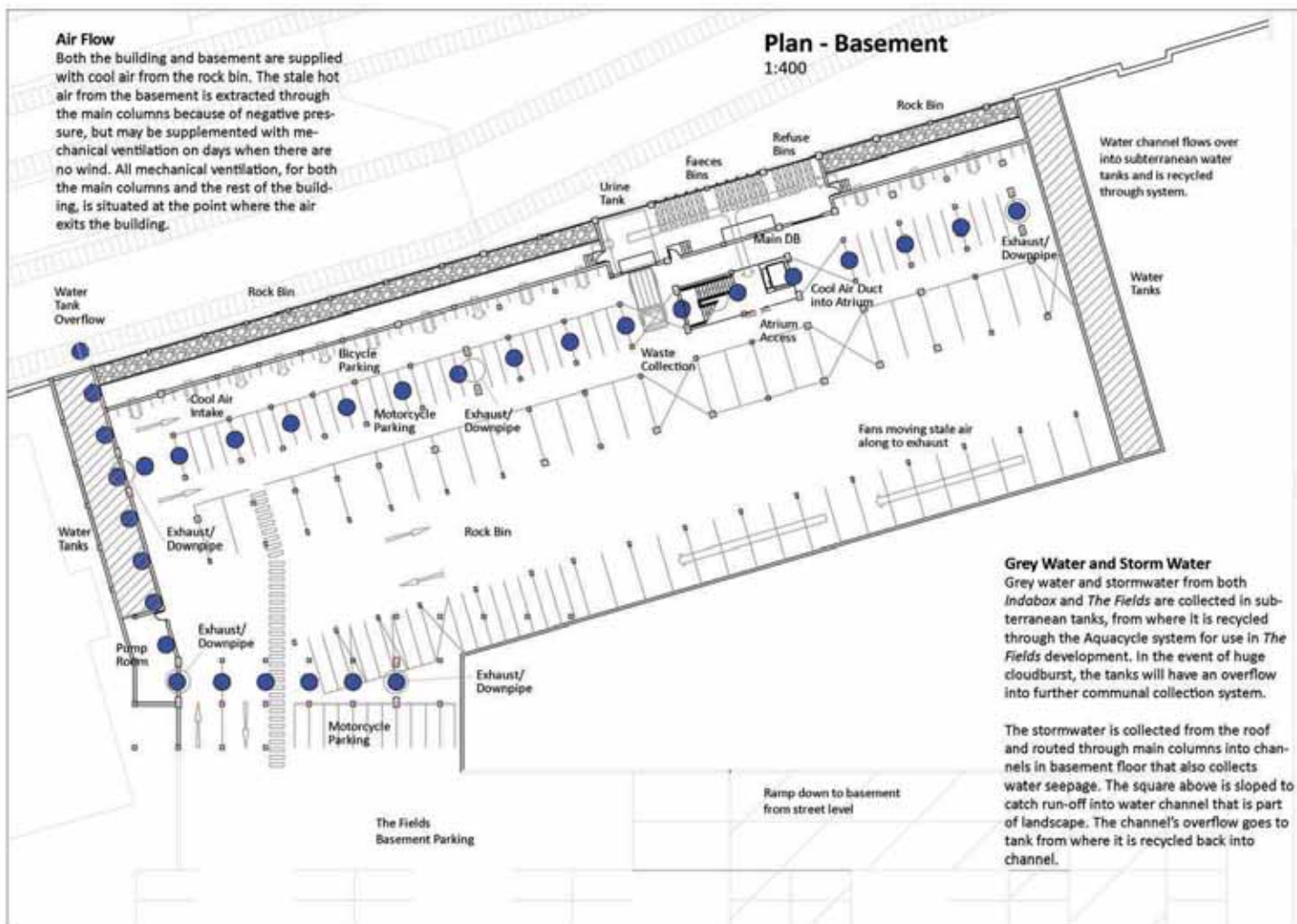
Dry Toilets

The faeces are collected without flushing water and fall straight down through gravity pipes of 200 mm diameter into individual ordinary plastic bins, and is replaced with another one when full. Urine is diverted to tanks in basement. A collection service empties the bins and transports the content to a central treatment facility. An extraction system draws air from the ventilation outlet of the bathrooms through the faeces collection area and to a vent pipe on the roof of the building. This keeps the faeces bins under negative pressure, improves their dehydration and removes odours even when the toilets are in use. The biggest obstacle to such a system is social acceptability.

Benefits

- As a sealed, properly managed, system it poses no negative impact to environment
- No introduction of pathogens into the water bodies due to the elimination of discharge of faecal material
- Only uses water during maintenance
- Faeces and urine used as compost after 12 month period on non-edible plants
- No chemicals needed to treat compost

<http://www.ecoconres.org/>



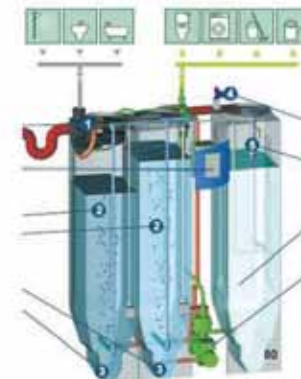
Air Flow

Both the building and basement are supplied with cool air from the rock bin. The stale hot air from the basement is extracted through the main columns because of negative pressure, but may be supplemented with mechanical ventilation on days when there are no wind. All mechanical ventilation, for both the main columns and the rest of the building, is situated at the point where the air exits the building.

Grey Water and Storm Water

Grey water and stormwater from both *Indobox* and *The Fields* are collected in subterranean tanks, from where it is recycled through the Aquacycle system for use in *The Fields* development. In the event of huge cloudburst, the tanks will have an overflow into further communal collection system.

The stormwater is collected from the roof and routed through main columns into channels in basement floor that also collects water seepage. The square above is sloped to catch run-off into water channel that is part of landscape. The channel's overflow goes to tank from where it is recycled back into channel.

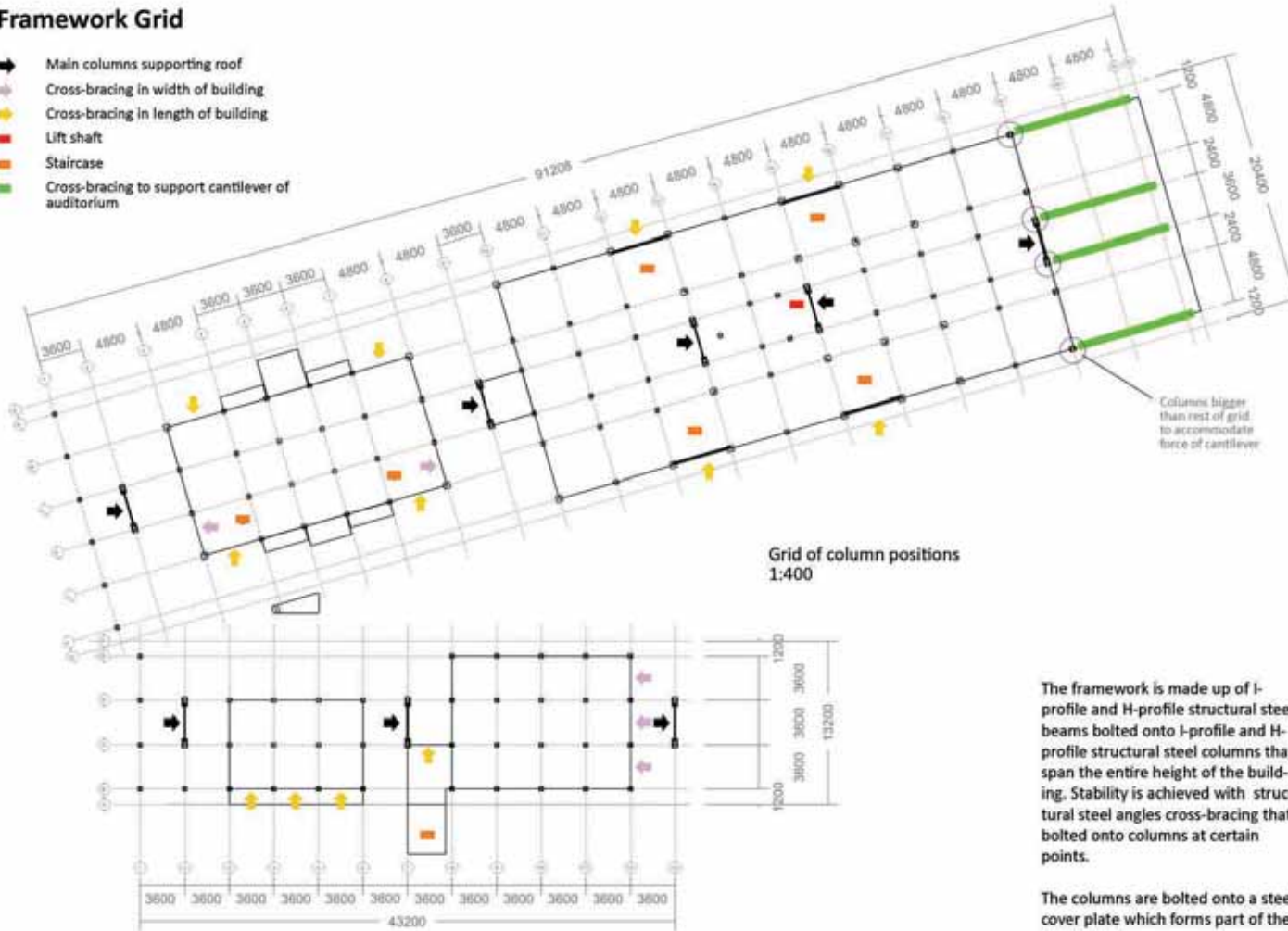


Aquacycle*

- 1 Pre-Filtration**
Larger particles are collected. Filter is automatically flushed by pump - sediments washed away into wastewater drain.
 - 2 Two-fold biological treatment**
In main and secondary recycling chambers, dirt particles are decomposed by bio-cultures. Water is pumped to next station in intervals.
 - 3 Sediment disposal**
Organic sediments produced during recycling process are regularly sucked from chambers and diverted into wastewater drain.
 - 4 UV-Stereilisation**
On way to storage chamber the recycled water flows through a UV-light lamp which disinfects it. The high quality of the water now conforms to the E.U. Directive for Recreational Water.
 - 5 Automatic freshwater feed**
Should supply in storage unit drop, will be automatic freshwater supply for flushing toilets.
- <http://www.ahwadoc.co.za/>

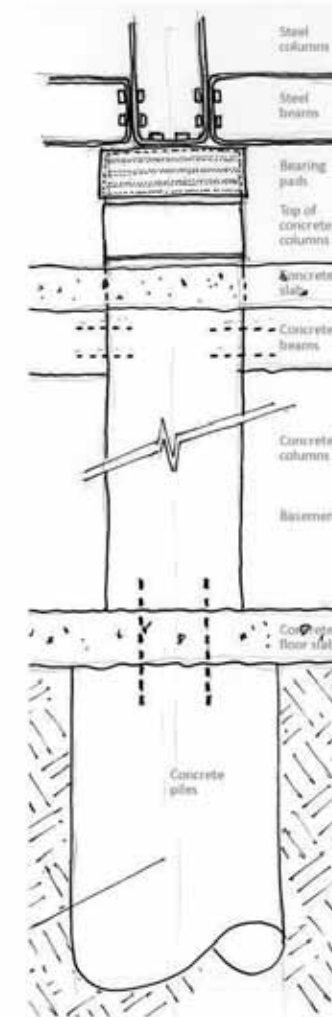
Framework Grid

- ➔ Main columns supporting roof
- ↔ Cross-bracing in width of building
- ↔ Cross-bracing in length of building
- Lift shaft
- Staircase
- Cross-bracing to support cantilever of auditorium



The framework is made up of I-profile and H-profile structural steel beams bolted onto I-profile and H-profile structural steel columns that span the entire height of the building. Stability is achieved with structural steel angles cross-bracing that is bolted onto columns at certain points.

The columns are bolted onto a steel cover plate which forms part of the bearing pad.



The Elastomeric Bearing Pads transfer vertical loads from the superstructure to the substructure, while allowing limited horizontal movement, to absorb the vibrations caused by the train track and to allow for thermal expansion and contraction. It is made up of alternative layers of recycled natural rubber and steel reinforcement plates (shims). Bridge design engineers can specify the size and configuration of a bearing to accommodate the specific load, shear, and rotational requirements at each point.
<http://www.scougallrubber.com/bearingPads.html>

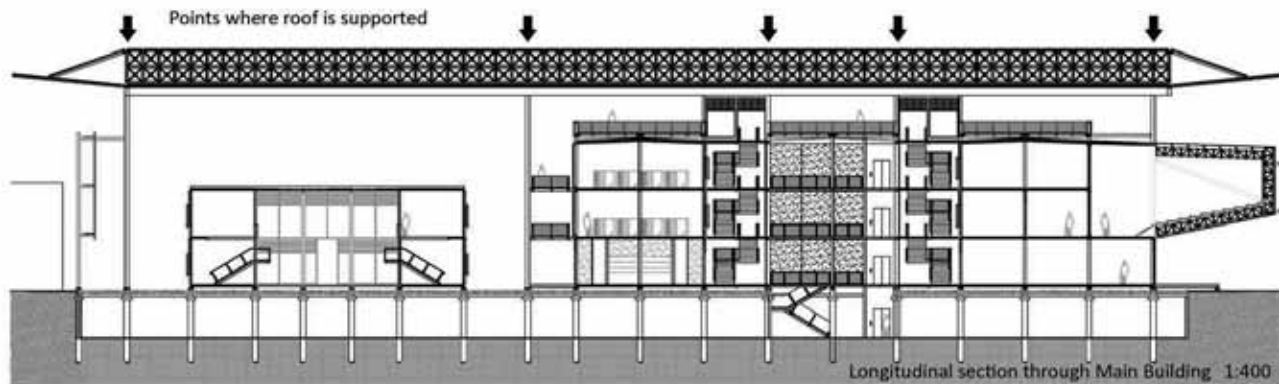
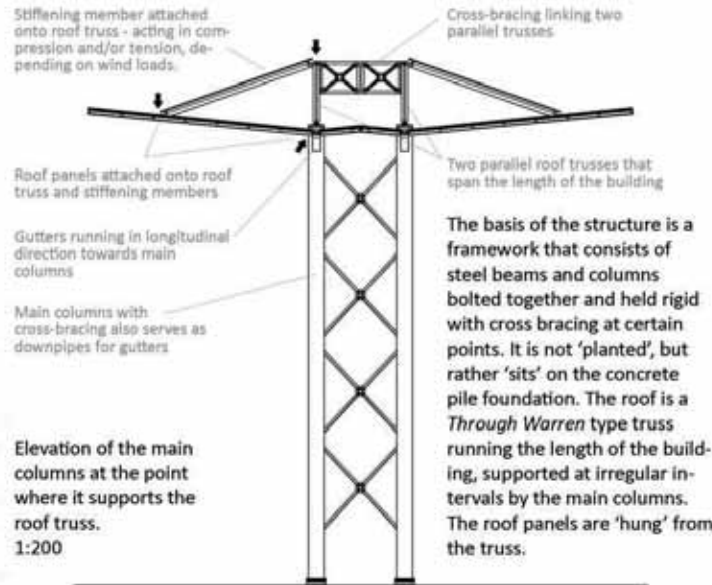
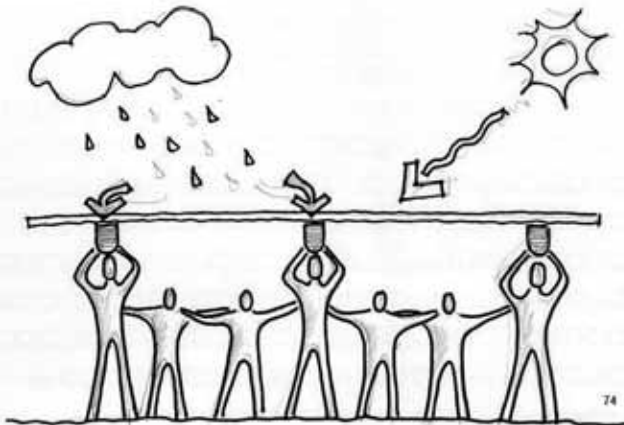
Bearing pads are attached with structural steel clamps onto the top of the concrete columns, which together with concrete beams form the substructure to carry both the building and the roof of the basement, which also serves as the floor surface of the square outside the building.

The roof of the basement (or floor of square) is made up of BubbleDeck pre-cast panels laid onto pre-cast concrete beams. They can thus be dismantled and re-used; leaving only the columns, basement floor and foundation piles as in-situ cast elements. These are reinforced with Helix Steel Fibres. The concrete columns are cast onto steel reinforcing protruding through the floor from the piles onto which the floor was cast.

All of the above structure will be designed according to engineer specifications.

Structural Concept

The following sketch is an analogy of the structure. The little guys help keep the big guys steady while the hold up the roof which protects all of them from the sun and rain. And the point where they hold the roof is also where they collect the water running down.



This photograph was taken in 2006 of the city block where the site is located. The structurally sound old buildings, had to make way for *The Fields* new development. Some of the embodied energy in the rubble might have been used for foundation fill, but most of it probably ended up as landfill. The demolition of 'outdated' buildings seems to be a prevailing trend in Pretoria, and is the main reason why the structure of *Indabax* was designed to enable dismantling for relocation or recycling of building parts.

BubbleDeck® Pre-cast Concrete Slab

Consists of five layers 'sandwich':

- Concrete 'biscuit' [60mm]
- Steel reinforcing mesh
- Recycled plastic hollow 'Bubble' void
- Steel reinforcing mesh
- Concrete 'biscuit' [60mm]

Benefits:

- Eliminates concrete from middle of slab not performing structural function, 35% reduction in own weight.
- More efficient construction:
 - * Longer spans
 - * Lighter volume to transport
 - * Faster construction, no curing
- More sustainable product:
 - * Component can be re-used
 - * Absorbs recycled plastic
 - * Reduce concrete usage up to 50%
 - * Reduce carbon emissions

<http://www.BubbleDeck-UK.com>



Helix® Steel Reinforced Fiber

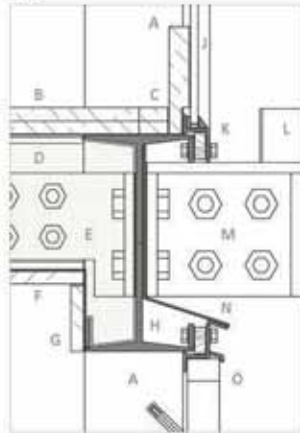
It is a high performance, optimized steel fiber for use in reinforcement of concrete. Helix fibers are short, twisted and polygonal shaped wires that are added to concrete during mixing. The shape and the twist maximize both the frictional and mechanical bonds between fiber and cement based matrix. The twist drives the fiber failure from a frictional pullout mechanism to a torsional or untwisting mode. Following the principle that a screw resists pullout far better than a nail.

Benefits:

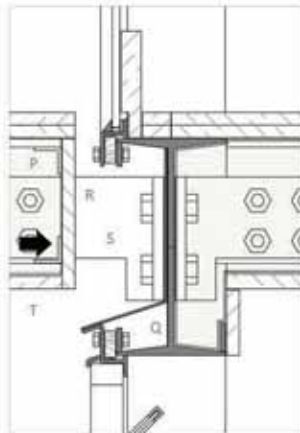
- Stronger and more ductile
- Crack prevention
- Post crack strength increase
- Overall cost reduction
- Weight reduction of slabs
- Eliminate rebar and mesh in virtually any reinforcement application.

<http://www.helixfiber.com/Info/DataSheet.pdf>

Detail A
1:5

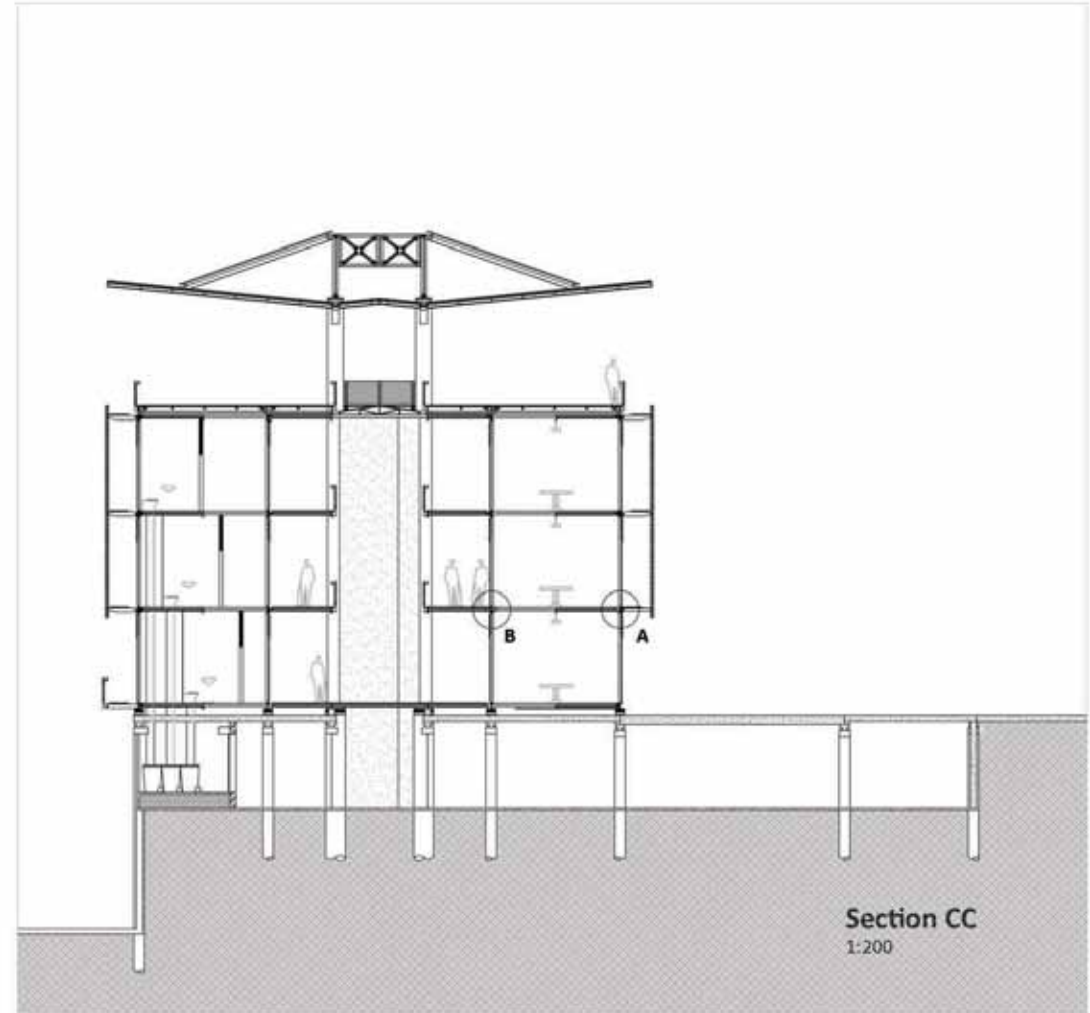


Detail B
1:5



First the 203x102x25 structural steel I-section column (A) is erected. Then the 203x102x25 structural steel I-section beam (H) is bolted onto column (A). Next the 127x76x13 structural steel I-section beam (D) is bolted onto a steel bracket (E), which is bolted onto beam (H) or onto the column (A) [where it coincides with the column grid]. One layer 12mm plywood (F) is fastened, with self-tapering screws, onto the bottom of beam (D). The ceiling is finished with 12mm plywood cornice (G) screwed onto 'lugs' welded onto beam (H) at 600mm intervals. The space between the beams is filled from the top with Warmcel 500 Insulation Fibre (dotted hatching), by way of damp spray application onto open floor panels sheathed with vapour permeable external sheathing. Once sprayed, it is levelled off with the top of the beams. Two layers of 12mm plywood (B) laid at right angles (to strengthen load capacity) are fastened with self-tapering screws directly onto I-section beams. The beams are connected at 1200mm intervals, enabling standard size plywood sheets to be laid in both directions. The plywood skirting (to protect glazing from scratching when sweeping floors) is screwed onto filler piece (C), which in turn is screwed onto I-section beam (H). The 6.76mm HPR Solarshield glazing (J) is fitted with putty into standard mild steel frame (K) which is bolted onto 'lugs' welded, at top and bottom, onto beam (H) with a rubber spacer inbetween. At the sides, the frame is bolted onto a flat steel bar that is welded onto column (A) for the entire height of frame. This is to grip the recycled rubber strip inbetween that prohibits water ingress. A steel metal sheet flashing is layered between the beam (H) and the steel bracket (M) that holds the catwalk (L) and louvre frame in place. The flashing protects the bottom window steel frame from water ingress. All welding work is done in the factory to enable construction on site to be done with bolting elements together.

Detail B assembly is similar except the following. After the beam (P) is bolted (via steel bracket) onto beam (Q), the 12mm plywood strip (R) is first cut to fit over steel bracket (S). It is then screwed into place from the arrow direction. Procedure is then repeated as above with one layer plywood (T) fastened to bottom of beam, etc.





Figures

- 1 The Iroquois people, 1914, <<http://www.crystalinks.com/iroquois.html>>
- 2 Streets of New York, <www.urbanity.50megs.com>
- 3 Omotesando Hills, Japan, Japan Architect No 64 p31
- 4 Lower Manhattan, 2008, <<http://en.wikipedia.org/wiki/Manhattan>>
- 5 Rainbow in the Cape Province, author (2008).
- 6 Architect students in the Vrededorf Dome area, author (2007).
- 7 Street scene in Visagie Street, Pretoria, author (2007).
- 8 Architect students in rural Mabopane, Korine Stegmann (2007).
- 9 Street scene in Van Der Walt Street, Pretoria, author (2007).
- 10 Street scene in Church Street, Pretoria, author (2007).
- 11 Public participation, L'Arch Magazine 368, p63.
- 12 Street scene in Van Der Walt Street, Pretoria, author (2007).
- 13 Street scene on Church Square, Pretoria, author (2007).
- 14 Community meeting, AD Magazine, vol 73 no 3 p86.
- 15 Public participation meeting, Architectural Record 10-06 p38.
- 16 Street theatre, AD Magazine vol 75 no 5 p 47.
- 17 Office cafeteria, Architectural Record 04-07, p98.
- 18 Public Participation, Volume Magazine No 10, p49.
- 19 Public Participation, Volume Magazine No 10, p49.
- 20 Public gathering, AD Magazine vol 75 no 5 p 48.
- 21 Group participation, L'Arch Magazine 368, p106.
- 22 Group discussion, L'Arch Magazine 368, p101.
- 23 Public gathering, L'Arch 368, p103.
- 24 Public gathering on Church Square, Nazly Chothia (2007)
- 25 Public participation meeting, Architectural Record 10-06 p38.
- 26 Social gathering, author (2007).

Figures

- 27 Photo of clouds over Pretoria, Nadia Strydom (2007)
- 28 Waste dumping site, Architecture Magazine Apr 2003 p96.
- 29 Embodied energy comparative table, 2008, <<http://www.canadianarchitect.com>>
- 30 Mining site, 2008, <<http://www.canadianarchitect.com>>
- 31 Old timber building, circa 1900, <<http://www.canadianarchitect.com>>
- 32 Gautrain route, (2008), <www.gautrain.co.za>
- 33 N1 Highway near Artterbury offramp, author (2008).
- 34 Main roads in Pretoria area, author (2008).
- 35 Hatfield Metropolitan Core Urban Development Framework (2007), City of Tshwane - Urban Research and Strategic Direction Department.
- 36 Hatfield precinct, author (2008).
- 37 Proposed Civic Spine Development, author (2008).
- 39 Site analysis, author (2008).
- 40 Site boundaries, author (2008).
- 41 Baragwanath Public Transport Interchange and Traders Market, author (2006).
- 42 Constitutional Court, author (2006).
- 43 Afrikaanse Taalmonument, Paarl, author (2008).
- 44 Timber crate, author (2008).
- 45 Pavilion Munster, Modulorbeat, AR 11-07, p52.
- 46 Laboratory, Randy Brown Architects, Architectural Review 05-08 p160.
- 47 55 Water Street Plaza, Rogers Marvel Architects and Ken Smith, Architectural Review 10-06, p72.
- 48 Private Residence, Nakayama Hideyuki, Japanese Architect Summer 2008 p54.
- 49 Wheatfield Courtyard, David McDowell, Royal Institute of British Architects 2005, Architecture 05 - The guide to the RIBA Awards, Merrel Publishers, London & New York, p195.
- 50 The Performance Academy, RMJM, Royal Institute of British Architects 2005, Architecture 05 - The guide to the RIBA Awards, Merrel Publishers, London & New York, p99.
- 51 Museum Pavillion - Light building, Atelier Kempe Thill, Architectural Review 12-07 p116.

Figures

- 52 St. Andrews Beach House, Sean Godsell, (2008), <<http://www.chiathenaem.org/intarch/2007/images/IA07-69.jpg>>
- 53 Salt Point House, Thomas Phifer, Architectural Review 01-08 p145.
- 54 Public theatre on Church Square, Nazly Chothia (2007).
- 55 Graffiti on wall, details unknown.
- 56 Chess Park, Rios Clementi Hale Studios, Architectural Review 03-05 p192.
- 57 Secret Garden, 2A+P, Domus 908, p56.
- 58 Private Garden, Katherine Spitz, Garden Design 07-05 p82.
- 59 Social gathering, author (2008).
- 60 Diana - Princess of Wales Memorial, Gustafson and Porter, Volume Magazine No 11 p39.
- 61 My Island Kindergarten, Technische Universitat Berlin, Domus 908, p110.
- 62 Sidewalk scene, details unknown.
- 63 Treelined boulevard in Cape Town, author (2008).
- 64 Café Riche, Church Square, Pretoria, author (2007).
- 65 Studio of TUKS FM, author (2008).
- 66 US Pavilion Parking Garage, Architectural Review 11-04 p94.
- 67 Piazza on campus of University of Pretoria, author (2008).
- 68 Library, Hachioji City, Toyo Ito & Ass, Architectural Review 07-08 cover.
- 69 Group discussion, L'Arch Magazine 368, p101.
- 70 Real Estate shop in Brooklyn Centre, Pretoria, author (2007).
- 71 Lecture room in Boukunde building, University of Pretoria, author (2008).
- 72 Young Centre for the Performing Arts, Kuwabara Payne McKenna Blumberg Architects, Architectural Review 11-07 p95.
- 73 Scale model of city block, AD Magazine vol 75 no 6 p 45.
- 74 Sketch of structural concept, author (2008).
- 75 Photo of demolition in Hatfield, Pretoria, author (2008).
- 76 BubbleDeck, <www.begtonginfo.no/index>
- 77 Helix steel reinforcing fiber, (2008), <www.helixfiber.com>
- 78 Elastomeric bearing pad, (2008), <www.scougalrubber.com>
- 79 Containers for faeces collection and dry toilet with urine diversion, (2008), <www.ecosanres.org>
- 80 Aquacycle, (2008), <www.akwadoc.co.za>
- 81 Smartglass Solarshield Glazing, <www.smartglass.co.za>
- 82 Evaporative cooling pads, (2008), <www.coolair.com>
- 83 Warmcel Insulation Fibre, (2008), <www.excelfiber.com>

Allyn & Bacon 1999, Richard Robbins - Global Problem and the Culture of Capitalism, pp. 209-210

Boutet, TS 1987, Controlling Air Movement – A Manual for Architects and Builders, R.R. Donnelley & Sons, United States.

City of Tshwane Metropolitan Municipality and Gautrain Project Team 2003, Gautrain Rapid Rail Link - Station Functional Area Guidelines, City of Tshwane Metropolitan Municipality, Pretoria.

Canadian Architect 2008, Measures of Sustainability - Overview, Business Information Group, viewed on 28 August, 2008, <http://www.canadianarchitect.com/asf/perspective_s_sustainability/measure_of_sustainability/measure_s_of_sustainability_intro.htm>

Da Costa, M 2007, Surfaces & Services - A Public space for Communication, Information and Discussion, MArch(Prof) Thesis, University of Pretoria, South Africa.

Dahl, RA 1991, Democracy and Its Critics, Part One, The Sources of Modern Democracy, Chapter 1, "The First Transformation: To the Democratic City-State," page 13

Department of Economic and Social Affairs of the United Nations Secretariat, European Environment Agency (EEA) 2003, European Environment Agency (EEA), 18 February, 2008, <http://themes.eea.europa.eu/Sectors_and_activities/transport/indicators/consequences/TERM01,2003>

Dowd, D 2005, Consumerism As A Social Disease, Z Magazine, viewed on 12 April, 2007, <<http://www.zmag.org/content/showarticle.cfm?itemId=8830>>

Downs, A 1957, An Economic Theory of Democracy, Harpercollins, College.

Engberg, T & Styhre, A 2003, Spaces of Consumption: From Margin to Centre, Ephemera, viewed 8 April, 2007, <<http://www.ephemeraweb.org/journal/3-2/3-2styhreandengberg.pdf>>

Edminster, A.V Straw Bale Construction—A Sustainable System For Ownership, by Ann V. 2007-03-21, greenbuilder.com <http://www.thelaststraw.org/bonus-articles/ann_edminster.html>

Fraser, N 1990, Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy, JStor, viewed on 11 April, 2008, <<http://0-www.jstor.org.innopac.up.ac.za:80/stable/466240>>

Habermas, J 1979, translated by McCarthy, T, Communication and the Evolution of Society, Heinemann, London.

Habermas, J 2006, The Public Sphere- An Encyclopedia Article, Google Book, viewed on 11 April, 2008, <http://books.google.co.za/books?hl=en&lr=&id=KfmTkKmEkiIC&oi=fnd&pg=PA73&dq=Jürgen+Habermas&ots=4Vk9uBP5zS&sig=_b3A2J0tWlyGpGFzoLkhA8D5g>

Holliday, A, Hyde, M & Kullman, J 2004, Intercultural communication - An advanced resource book, Routledge, London.

Institute for Scripture Research 1998, The Scriptures, Institute for Scripture Research, USA.

International Road Transport Union (IRU) 2002, International Road Transport Union (IRU), 18 February, 2008, <http://www.iru.org/index/cms-filesystem-action?file=en_Publications/co2e.pdf>

Leupen, B, et al 1997, Design and Analysis, 010 Publishers, Rotterdam.

Le Corbusier 1986, Towards a new architecture, New York, Dover.
Massachusetts Technology Collaborative 2008, Massachusetts Technology Collaborative, viewed on 17 October, 2008, <<http://www.masstech.org/cleanenergy/greenbuilding/overview.htm>>

McMillan, DW & Chavis George, DM 1986, Sense of Community: A Definition and Theory, Washington State University, viewed on 11 April, 2008, <<http://www.spokane.wsu.edu/academic/design/content/documents/McMillanChavis.pdf>>

Rowe, PG 1987, Design Thinking, Cambridge Mass, MIT Press.

Shah, A 2005, Behind Consumption and Consumerism, GlobalIssues.org, viewed 8 April, 2007, <<http://www.globalissues.org/TradeRelated/Consumption.asp>>

Wallace, RJ 2003, Practical Reason, The Metaphysics Research Lab, Center for the Study of Language and Information, Stanford University, Stanford, viewed on 17 April, 2008, <<http://plato.stanford.edu/entries/practical-reason/>>

Watt, JR 1986, Evaporative Air Conditioning Handbook, 2nd Edition, Chapman & Hall, New York.

Webster's Unabridged Dictionary 1999, Random House.

Wikipedia 2008, Democracy, Wikimedia Foundation, 31 January, 2008, <<http://en.wikipedia.org/wiki/Democracy>>

Wikipedia 2008, Sustainability, Wikimedia Foundation, 19 February, 2008, <<http://en.wikipedia.org/wiki/Sustainability>>

Whiting, S 1999, Spot Check, EBSCOhost, viewed on 8 April 2007, <<http://0-www.ebscohost.com.innopac.up.ac.za/ehost/detail?vid=1&hid=21&sid=bd0d83b0-01ed-4c6e-850b-2e0b2b92846c%40sessionmgr9>>

REFERENCE PART E