



LYF [TAAL]

SPORT + DEVELOPMENT

[SPORT HAS THE ABILITY TO UNITE A NATION]

NELSON MANDELA, 1995

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ABSTRACT__

This project is a response to the author's passion for sport and his curiosity about the architectural process that is necessary to understand and facilitate the interrelation of body, mind and soul.

The potential influence of physical exercise; its correlation with the metaphysical aspects of the individual and how this influence spills over into the larger context of society is investigated.

This dissertation attempts to form an architectural response that is indigenous to the local population, the climate and the existing urban condition. The investigation ranges from a thorough understanding of the community to the effective contribution that architecture can offer, based on the concept of 'sport for development'¹ in South Africa.

The primary objective of the architectural response is to amplify the potential of sport as a means of building peace and self-actualisation within a society that suffers from the effects of crime and violence.

Although popular culture reinforces the belief in the potential of sport, Spaaij (2009:1109) identifies factors and conditions that must be met if the positive value of sport is to be achieved.

The dissertation incorporates these factors and conditions into a multipurpose 'sport for development' community complex. This complex aims to augment the existing 'sport for development' programmes in South Africa and serve as a prototype for future 'sport for development' centres, which ultimately includes everyone in the process of reconciliation.

'STRONG LIMITATIONS OFFER AN OPPORTUNITY FOR STRONG ARCHITECTURAL INTERPRETATION, IF YOU ARE CAPABLE OF SENSING THE SPIRIT OF YOUR EARTH AND SKIES.'

(VON MEISS 1997:7)

¹ It is common to mistake 'sport for development' as 'sport development'. The latter implies the development and diffusion of sport itself, whereas the former implies using sport as a tool in development assistance, poverty reduction and peace building. According to the UNOSDP (www.un.org) its antecedents can be traced back to antiquity, when the Olympic truce was used to establish temporary peace between warring states.



fig 2. soccer player



fig 3. Basketball hoop at school

“ONE OF THE CRUELEST LEGACIES OF APARTHEID IS
ITS DISTORTION OF SPORT AND RECREATION IN OUR
SOCIETY, THE ENFORCED SEGREGATION OF THESE
ACTIVITIES AND THE GROSS NEGLECT IN PROVIDING
FACILITIES FOR THE MAJORITY OF SOUTH AFRICA’S
PEOPLE. THIS HAS DENIED MILLIONS OF PEOPLE AND
PARTICULARLY OUR YOUTH THE RIGHT TO A NORMAL
AND HEALTHY LIFE.”

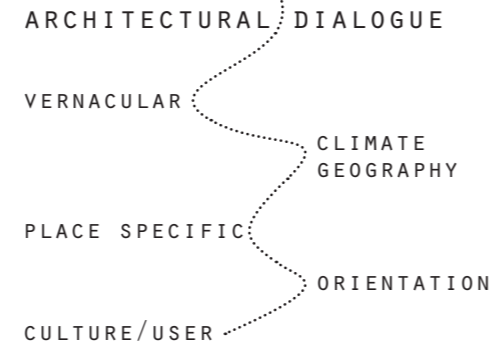
(African National Congress 1994)

THEORETICAL APPROACH

00

NORMATIVE STANCE TOWARD ARCHITECTURE

LYF [TAAL]



“IT IS THE THEORY THAT DETERMINES WHAT WE OBSERVE.” ALBERT EINSTEIN

The Norwegian architect, Norberg-Schultz (1926-2000) writes: "There are not different types of architecture, but rather different situations that require different solutions in order to satisfy humanity's physical [and emotional] need" (1980: 5).

The problem that architects in South Africa are faced with is to be able to respond to these different situations and to still somehow attempt to create an architectural language that is indigenous to a larger South African context.

This problem of architectural language gave rise to the concept of "Lyf[Taal]". Architecture is a creative interpretation and reinterpretation of ever-changing elements that ultimately produce space and place. These spaces should then be able to

continually communicate with the ever-changing morphologies of society. In order for this communication to take place, architecture needs to be a living, breathing, seeing and nurturing process and product that protects the people who use it. It is the opinion of the author that there should be harmony between architecture and the user- a symbiotic relationship that benefits both.

The well-being of people is a fundamental aspect architects should aim to address. Without the user, buildings do not communicate. Without users, architecture is irrelevant and lifeless. It is thus of utmost importance that the language of architecture is clear and understandable. Only then will architecture enable a building to require no justification for its existence.

Skins and Screens

The building's envelope or skin not only contributes to its aesthetic appeal but it is a tool for architectural communication. The building responds to surrounding structures and creates spaces in-between. These in-between spaces form the introduction of every building and in most cases carry more value for the general public than the intramural. This carries significant importance to the building itself as well as the identity of its users. Finally, the architecture must communicate in a 'local tongue'¹.

The South African architect Gawie Fagan (1983:50) wrote that "context and relation to the environment in the widest sense [is] the first rule of his architectural language."

This dissertation strives toward the development of a vernacular² language with a regional dialect. Vernacular architecture and the search thereof are examples of a native architectural language, or 'taal'. Apart from developing an architectural language, other nonnegotiable elements such as sustainability and resource efficient design are an integrated part of good vernacular buildings.

The aim of this dissertation is to respond to the social and physical demands of people by creating vibrant flexible spaces that are not limited to their functional program but also representative of good architectural dialogue within its context.

¹ A description of an architectural language that is born within its local context. It is often familiar and came into being as a response to the immediate limitations in terms of technology, skill and material.

² The language or dialect spoken by the ordinary people in a particular country or region.

“AN APPROPRIATE SOUTHERN AFRICAN ARCHITECTURE WILL THUS BY ITS VERY DEFINITION, SHOW STRONG REGIONAL DIFFERENCES REFLECTING CULTURAL AND CLIMATIC VARIANTS.

(FAGAN 1983:1)

SPORT IN SOCIETY__

RAMON SPAAIJ



fig 4. Ramon Spaaij (Google images 2012)

Cultures, Commerce, Media, Politics

Ramón Spaaij is a Senior Researcher in the School of Social Sciences at La Trobe University, Melbourne, Australia, and at the Amsterdam Institute for Social Science Research, University of Amsterdam, the Netherlands.

Spaaij acknowledges the widespread belief that sport has the power to make a society more equal, socially cohesive and peaceful. The proof of which is in the public-private partnerships and in the ever-expanding efforts of organisations on local, national and international levels (Spaaij 2009: 1108).

He stresses the fact that the heralding status of sport as an agent of personal and social change has not gone unchallenged and warns

that social development through sport should not be imposed on disadvantaged communities in a 'top-down' manner. One should rather focus primarily on community engagement and shared ownership. 'Sport for development' programmes should be voluntary and promote rather than enforce self-reliance and empowerment (Spaaij 2009: 1109).

It is important to establish an indigenous understanding of a place before taking an interest in the means and ends of the proposed development. One must understand ethical and moral issues as well as the practicalities of that particular region and not manufacture gross generalisations that might lead to prejudiced responses. Spaaij (2009: 1108) states that arguably, the main

limitation is the absence of an understanding of processes and mechanisms which either produce, or are assumed to produce, particular impacts and outcomes. In other words, we should understand what processes produce what effects, for which participants and in what circumstances.

Spaaij (2009: 1108) believes that sport as a programme needs to be designed. I concur with Spaaij and believe that there is a void in the above mentioned equation for social change through sport, that could be successfully filled by architecture.

“...AS PART OF THIS PROCESS, WE HAVE INCREASINGLY COME TO UNDERSTAND THAT SPORT AS A PROGRAM NEEDS TO BE CAREFULLY DESIGNED FOR SOCIAL BENEFITS TO ACCRUE.”

(SPAAIJ 2009:1110)

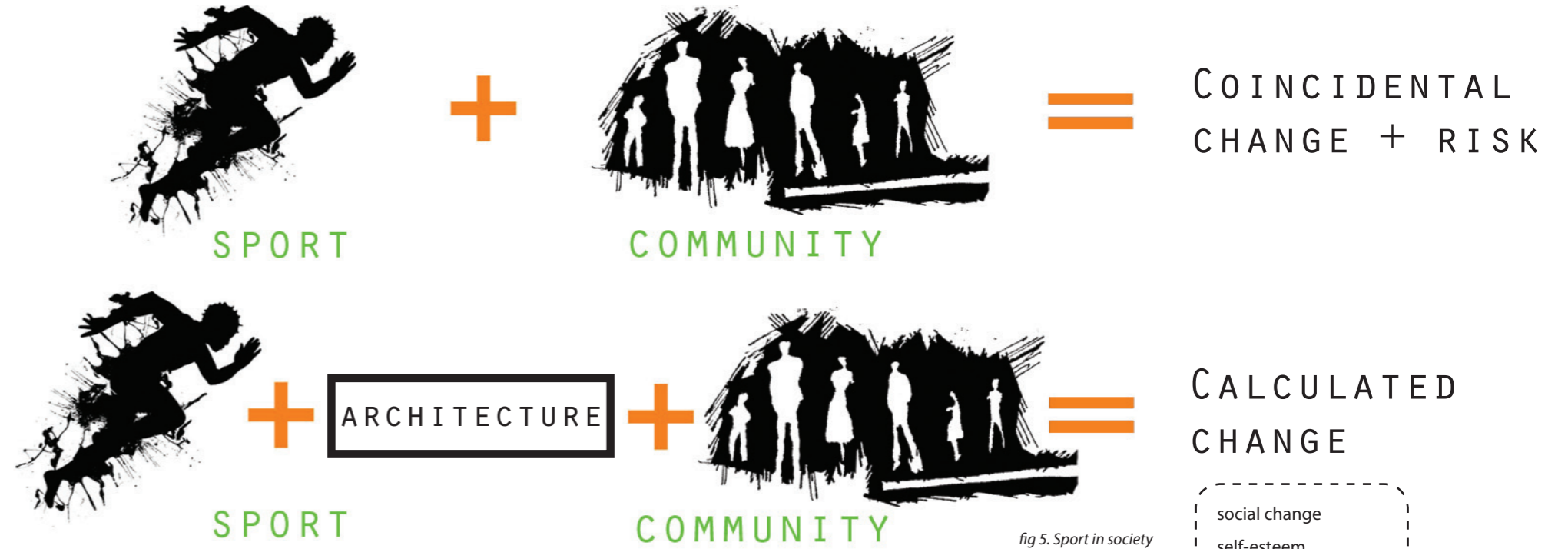


fig 5. Sport in society

SPORT AS OPPORTUNITY FOR COMMUNITY DEVELOPMENT AND PEACE BUILDING IN SOUTH AFRICA

MARION KEIM



fig 6. Marion Keim (Google images 2012).

‘THERE IS A WIDESPREAD NOTION THAT LINGUISTIC AND CULTURAL BARRIERS ARE MORE EASILY OVERCOME IN SPORT THAN IN OTHER AREAS OF SOCIAL LIFE. FOR THIS REASON, SPORT IS OFTEN REFERRED TO AS THE “CONVEYOR OF CULTURE OF THE MOST ACCESSIBLE SYMBOLISM.”’

(GIEBHAIN 1995:167; HARMS 1985: 63)

‘IN FEW COUNTRIES COULD INSTITUTIONS OF CIVIL SOCIETY (SUCH AS SPORT) OUTFLANK AND MANIPULATE WHAT APPEARS TO BE A POWERFUL STATE IN THIS MANNER; IN NO OTHER COUNTRY, PERHAPS, COULD SPORTING INSTITUTIONS HAVE PLAYED SO LARGE A PART IN FORMING THE DIRECTION THAT [SOUTH AFRICA] WOULD TAKE.’

(ALLISON 2000:69)

Time, Politics, Society and Cultural Symbolic Capital

Marion Keim is an Associate Professor at the University of the Western Cape, South Africa and is world renowned for her research on community development through sport. The investigated theory by Keim centres around the role of sport in the development of South Africa and could be categorised into the past, the present and the future condition.

With regard to the past, Keim agrees with Allison that there are few countries in which sport have played such a formative role in the process of building a cohesive national character as South Africa. The very first democratic president of South Africa and world renowned humanitarian, Mr. Nelson Mandela said that sport has the potential to unite a nation. It wasn't long before these famous words of Mr. Mandela was proved to be correct when South Africa won the Rugby World Cup for the first time in 1995 and years of political strife momentarily seemed petty.

In the present condition Keim, with special reference to Harms (1982: 6), identified four aspects of sport that should be emphasised for sport to function as a tool of social integration and peace building processes between parties of different cultural backgrounds:

- 1.) Sport as non-verbal means of communication.
- 2.) Sports programmes as occasions for collective experience and direct physical contact.
- 3.) Sport as a medium which transcends divisions of class.
- 4.) Sport as an instrument of culture (Harms 1982:6).

In terms of the future, Keim identifies potential threats to the peace building process in South Africa. Ethnic prejudices, racism and xenophobia - attitudes ingrained by Apartheid- form obstacles from the past that might negatively influence the future.

Conclusion

The author concurs with Keim's theoretical argument by stating that the nature of our historic background has shown to withhold the positive influence of sport in our society. Despite this after a process of transformation, South Africa has first hand experience in the reconciliatory potential of sport and is the ideal host for a new 'sport for development' building prototype.

In conclusion, the representation of our past, present and future should become an integral part of the proposed building design. It should be a building that responds to a memory and projects towards a common communal goal.

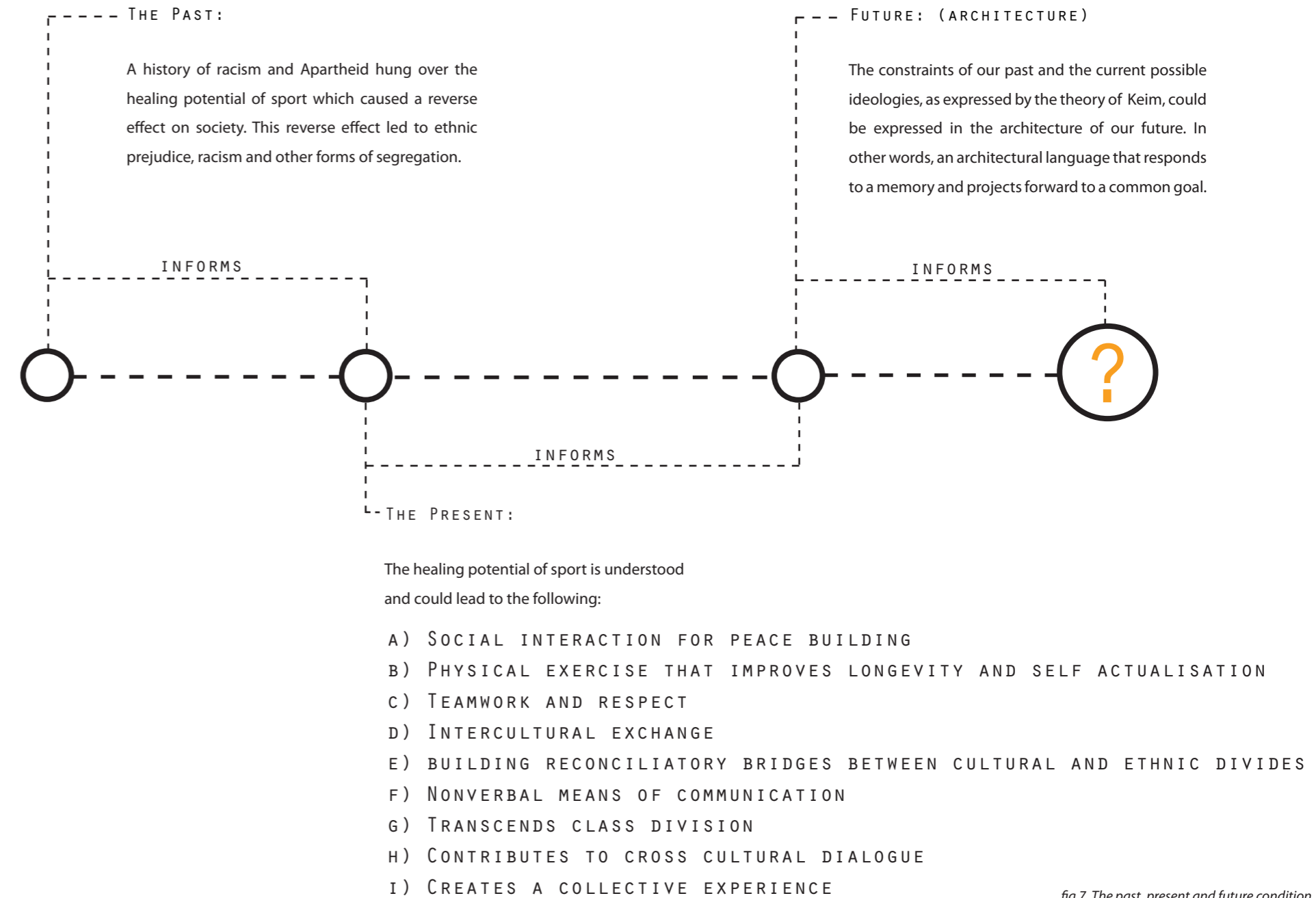


fig 7. The past, present and future condition

SPACE IS THE MACHINE__

A CONFIGURATIONAL THEORY OF ARCHITECTURE

BILL HILLIER - ARCHITECT

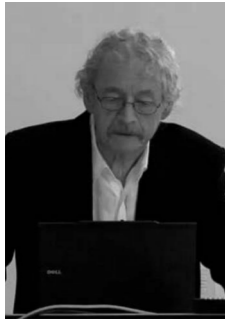


fig 8. Bill Hillier. (Google images 2012)

Space as Place Between Substance and Meaning

Bill Hillier (2007:305) equates the activity of building or space making as the meeting point of two worlds namely, our physical continuous material world of objects, which we occupy and move in and the metaphysical discontinuous world of expressive forms, signs and symbols that we occupy cognitively.

Hillier refers to the physical world as the 'real' world, and the metaphysical as the 'logical' world.

Space, as result of building, is thus where the 'real' meets the 'logical'. In architectural terms, 'real' refers to the physical built form and 'logical' refers to the social abstraction.

Hillier uses the example of a church that cannot be a church without a priest and congregation. We encounter a problem

when we separate social institutions from the buildings they occupy because the one defines the other.

Hillier further elaborates that a social abstraction¹ gives meaning to the building and the building² gives substance to a social abstraction (Hillier:2007). Consequently, the space and the meeting point of the two worlds is a place of substance and meaning.

Hillier uses terms more common to genetics and describes the social abstraction as the **genotype**, and the building as the **phenotype**.

"Genotype" refers to an organism's full hereditary information, even if not expressed- the genetic make-up of the organism.

"Phenotype" is an organism's actual observed properties, such as morphology, development and behaviour.

Conclusion

Buildings and social abstraction are respectively the phenotypes and genotypes that form the living organisms of our society. By using biology as metaphor, Hillier helps us to understand how humans and built spaces interrelate. The life of built space and the occupants depends on the crossing of these two worlds.

¹ The social abstraction refers to the metaphysical and logical word that gives meaning to the built form.

² Built form: the real continuous physical world that gives substance to a social abstraction.

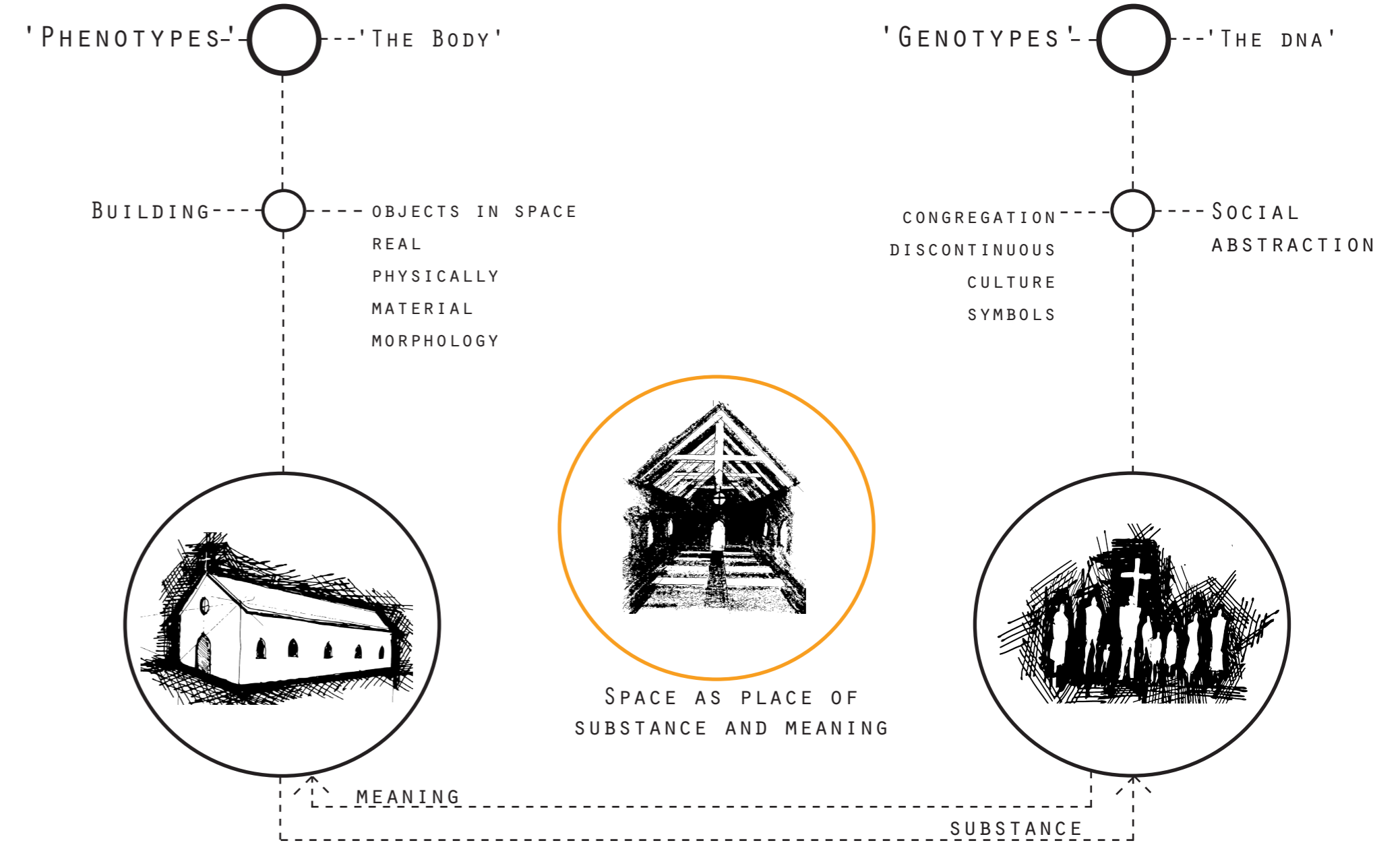


fig 9. Genotypes and phenotypes.

THE BRIDGE AS DWELLING

MARTIN HEIDEGGER - GERMAN PHILOSOPHER

(SEPTEMBER 26, 1889 – MAY 26, 1976)

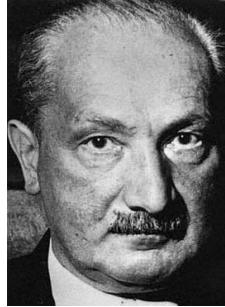


fig 10. Martin Heidegger (Google images 2012).

The Bridge as Dwelling

Heidegger contemplates the meaning of dwelling and its correlation with the idea of building. Heidegger raises two questions that does not categorise the view of building as art or technique of construction but traces building back to a domain to which everything that *is*, belongs:

1) What is it to dwell?

Heidegger states that mortal man must be of the understanding that even though man acts as though he is the shaper of language, language still remains the master of man. Heidegger thus borrows the descriptive potential of Old English, German, Old Saxon, Gothic and Greek to formulate a conclusion by means of linguistic reasoning.

To dwell is the simple unity of saving the Earth, receiving the sky, awaiting the divinities and initiating mortals. These four elements are described by Heidegger as the FOURFOLD.

2) In what way does building belong to dwelling?

To formulate an answer to this question, Heidegger uses an example of the bridge. The bridge becomes the personification of the question. "The bridge gathers to itself, in its own way, the earth and sky and divinities and mortals"(Heidegger 1971:151). Due to lack of a better modern word, gathering or assembling by linguistic research is translated as 'thing'.

Heidegger explains that people tend to think of the bridge as merely a bridge but beyond the obvious the bridge occasionally

"ALWAYS AND EVER DIFFERENTLY THE BRIDGE ESCORTS THE LINGERING AND HASTENING WAYS OF MEN TO AND FRO, SO THAT THEY MAY GET TO OTHER BANKS AND IN THE END, AS MORTALS, TO THE OTHER SIDE."

(HEIDEGGER 1971:152)

expresses something else and in essence becomes a symbol. However, being a only a symbol does not suffice. Therefore, what makes the bridge significant and how does it substantiate dwelling?

Heidegger answers that the bridge is indeed a **thing**- an object of gathering and assembling.-gathering and assembling the fourfold to distinguish a building from merely being a building and transform it into dwelling.



fig 10b. Bridge

THE BRIDGE - (HEIDEGGER 1971:152)

The bridge swings over the stream "with ease and power." It does not just connect banks that are already there. The banks emerge as banks only as the bridge crosses the stream. The bridge designedly causes them to lie across from each other. One side is set off against the other by the bridge. Nor do the banks stretch along the stream as indifferent border strips of the dry land. With the banks, the bridge brings to the stream the one and the other expanse of the landscape lying behind them. It brings stream and bank and land into each other's neighborhood.

The bridge gathers the earth as Landscape around the stream. Thus it guides and attends the stream through the meadows. Resting upright in the stream's bed, the bridge-piers bear the swing of the arches that leave the stream's waters to run their course. The waters may wander on quiet and gay, the sky's floods from storm or thaw may shoot past the piers in torrential waves-the bridge is ready for the sky's weather and its fickle nature. Even where the bridge covers the stream, it holds its flow up to the sly by taking it for a moment under the vaulted gateway and then setting it free once more.

The bridge lets the stream run its course and at the same time grants their way to mortals so that they may come and go from shore to shore. Bridges lead in many ways. The city bridge leads from the precincts of the castle to the cathedral square; the river bridge near the country town brings wagons and horse teams to the surrounding villages. The old stone bridge's humble brook crossing gives to the harvest wagon its passage from the fields into the village and carries the lumber cart from the field path to the road. The highway bridge is tied into the network of long-distance traffic, paced as calculated for maximum yield. Always and ever differently the bridge escorts the lingering and hastening ways of men to and fro, so that they may get to other banks and in the end, as mortals, to the other side.

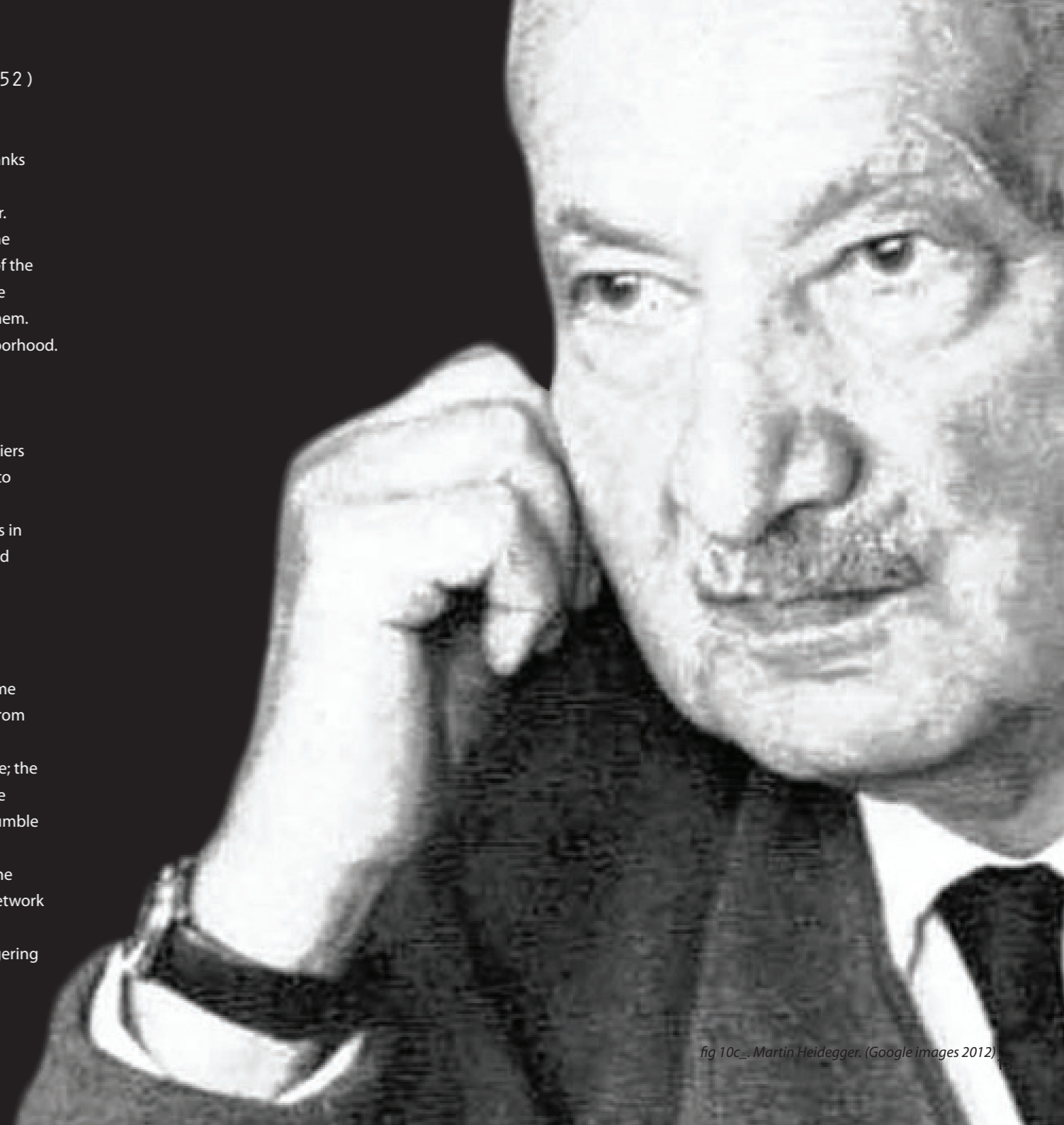


fig 10c. Martin Heidegger. (Google images 2012)

THE PROMENADE__

CHRISTOPHER ALEXANDER

AUSTRIAN BORN ARCHITECT



Fig 11. Christopher Alexander (Google Images 2012).

The Promenade

Christopher Alexander with Sarah Ishikawa and Murray Silverstein reasons that in most cases the user knows more than the architect does about what a building should be. This reasoning led Alexander to the development of a pattern language ('taal') in an attempt to empower the user to understand the various possibilities and experimental influences produced by different combinations of architectural elements.

This theory corresponds to the theory of Bill Hillier when the combination of the physical morphology allows the social abstraction (the people) to give an even deeper level of

substance to the building thus possibly creating the living and breathing architecture described earlier in the normative stance on architecture.

The main interest lies in Alexander's ideas on the promenade. He regards it as valuable because in the promenade lies the simple fact that people want to see other people and be seen. It is a place where people with a shared way of life gather together to rub shoulders and confirm their community. As a result, the promenade becomes a place where people can become the player (be seen) or the spectator (see others).

"PEOPLE GO THERE TO WALK UP AND DOWN, TO MEET THEIR FRIENDS, TO STARE AT STRANGERS, AND TO LET STRANGERS STARE AT THEM."

(ALEXANDER 1977: 169)

This theory is found to be especially appropriate to the area of investigation as it responds directly to the problem statement, the linear social patterns of the client and the programme of the proposed intervention.

The Promenade



fig 11b. Conceptual promenade.



Fig 11c. Christopher Alexander (Google Images 2012)



fig 12. Eskom power lines.

SUMMARY_

Although hermeneutic phenomenology and structuralism forms the basis of these ideas and the theorists are geographically and historically separated, these ideas are still relevant in the light of this project.

One cannot assume that one theory or one era or genre of thought alone could be enough to answer to the complexities of a specific, though multivalent problem such as this project poses.

The hybrid nature of these ideas adds to the richness of the approach and it expresses both our quest to understand humanity and their relation with the world in a meaningful substantial manner in the contemporary South African context.

CLIENT + PROBLEM STATEMENT + BRIEF

_01

CLIENT__

United Nations High Commission of Refugees (UNHCR), Absa DevCo, The City of Tshwane and the Department of Sport.

PROBLEM STATEMENT__

Introduction

The name 'Olievenhoutbosch' is associated with graphic images of xenophobic attacks published in local media during December 2005 to February 2006. A streak of xenophobic violence was triggered by a fight between two men in a shebeen in the Choba informal settlement on the southern periphery of the township when a Zimbabwean man killed a SePedi speaking leader of the community.

Revenge was inevitable and after a two-week period of xenophobic violence during which 15 foreigners were killed and 36 South Africans arrested, Olievenhoutbosch was permanently branded as an area of unrest, crime, violence and murder.

Statistics

Olievenhoutbosch is a relatively new settlement area close to Centurion, previously known as Verwoerdburg, which until the late 1980's was an entirely white area. It wasn't until the mid-1990's with the relaxation of movement controls, that there was a sudden influx of black South Africans to the area.

What made and still makes Olievenhoutbosch so attractive, is the fact that it is conveniently located near several of the major urban and manufacturing hubs in Gauteng and is therefore an appealing environment for job seekers and people working in various industries in Pretoria, Centurion, Johannesburg and Midrand. Olievenhoutbosch was established in 1996 by

the municipality of Centurion but designated to be a transit area with few permanent services. As time went by and the expectancy of RDP houses rose, it quickly became a growing informal settlement even though it was partially on illegally occupied private land.

According to the national census of 2001, the 8 605 individual households in 1998 grew to a total of 20 500 in 2001 and is still growing. 60% of the residents are under the age of 30 years, 20,5% of which are unemployed and 24% self employed- making bricks, washing cars, selling second hand goods or basic forms of entrepreneurship. Only 23% of adults have matric and 67% of the population falls in the poverty income group.



[3257]_number of murders

13987 _total number of sexual crimes

16457 _total number of drug related crimes

46600 _assault with intent to inflict bodily harm

4104 _attempted murder cases

46600 _number of cases of assault with intent to inflict bodily harm

[54 476]_common assaults

18207 _common robbery
40 052 _robbery with agravating circumstances

[16 757]_burglaries at non-residential premises

[70794] _burglaries at residential premises
[32278] _car and motorcycle theft
[37443] _theft out of motor vehicle

3665 _illegal possession of fire arms and ammunition

[21417] _driving under the influence of alcohol or drugs

5936_ car jacking cases
1374_ kidnappings

234_ public violence

[24767] _ number of cases involving shoplifting

[2579]_total amount of culpable homicide cases

973

_cases involving neglect and ill treatment of children

Gauteng

● olievenhoutbosch

GAUTENG CRIME STATISTICS FOR 2011
fig 13. Crime statistics in Gauteng

"THE TOWNSHIPS ARE BURNING – AND FOREIGNERS MAY BE NEXT. AGAIN..."
(ELESEEV, ET AL. 2010)



fig 14 a_ Burning foreigner. (Eliseev 2005)



fig 14b. Police man (Eliseev 2005).



fig 14c. Police man with gun. (Eliseev 2005)

Diversity

'Olieven' (as the local residents refer to it) is a multilingual settlement, with many cross provincial migrants that speak isiZulu, SePedi, Tswana, Xhosa and Zulu, most of which, according to Mr. Clever Shikwambane (local school principal), have migrated here due to the lack of clean water and working opportunities in their places of origin. There are also significant numbers of foreign African migrants from Mozambique, Zimbabwe, Zambia and Malawi. Pakistani's and other East-Asian businessmen who run local spaza shops or other small retail stores have also settled in the area.

Crime

Current crime and violence statistics in Gauteng (March 2010 to April 2011) issued by the SAPD, confirm that Gauteng is notorious for more than 50% of the crime in South Africa. In a period of a year, there were 3 257 murders, 13 987 cases of reported sexual crimes, 4 104 attempted murders, 46 600 cases of assault with intent to inflict bodily harm, 54 476 common assaults, 18 207 cases of common robbery and 40 052 cases of robbery with aggravating circumstances (SAPS 2010). A major contributor to the high rate of crime and violence in Olievenhoutbosch is the abuse of alcohol. There are currently more shebeens in Olievenhoutbosch than any other social, spiritual or educational institutions. Given the very low employment rate, people suffer from boredom, which leads to alcohol abuse and consequently violence and crime.

In a study undertaken by the South African Police Service in the Western Cape in 1996, it was reported that in 64% of cases in which the motive was known and 24% of cases where the circumstances surrounding the murder was known, alcohol was involved (SAPS 1997). In a study by the Medical Research Council and the Institute of Security between 1999 and 2000, it was found that for 15% of crimes, the arrestees were under the influence of alcohol at the time of the arrest. For 25% of weapon-related cases, 22% of rapes, 17% of murders, 14% of assault and 10% of robberies the arrested were under the influence of alcohol. Levels of alcohol-related crime are particularly high for family violence offences at 49% (Parry *et al.* 2004).

OLIEVENHOUTBOSCH STATISTICS

[1665]:

_established in 1996 as a transit area with rudimentary services

_ number of households in 1998

8605 individual residents

Census

In 2000 olievenhoutbosch is officially recognised as an informal township

2001

22 500 individual residents

61% of the population under 30 years of age

20,5% of the population unemployed

24% of the population self employed

23% of the population that have matric

67% of the population that fall in the poverty income group.

2005

start of xenophobic unrest when a fight broke out where a SePedi speaking man (community leader and ANC representative) was killed by a Zimbabwian in a local shebeen.

[36] _ amount of South Africans arrested

[15] _ amount of foreigners killed in two weeks of xenophobic violence

2012

[2] community gravel soccer fields
[1] community centre with clinic
[4] "netball courts"
[1] community centre
[5] number of primary schools
[80] anumber of creshes
[0] athletics training facilities
[1] library

[40] amount of soccer teams
[0] doctors
[32] netball teams
[1] community hall
[3] number of secondary schools
[0] doctors
[2] parks
[0] gymnasiums

'STRONG LIMITATIONS OFFER AN OPPORTUNITY FOR STRONG ARCHITECTURAL INTERPRETATION, IF YOU ARE CAPABLE OF SENSING THE SPIRIT OF YOUR EARTH AND SKIES.'

(VON MEISS 1997:7)

Schools

According to a local school principal of Philena Primary School, Mr. Clever Shikwambane, in a personal interview on 1 March 2012, the exceptionally high level of 98% school attendance is primarily due to the constant provision of food at the school. It is also because school is seen as an escape from the realities at home. "At school, children can play, learn and feel safe," (Shikwambane). Unfortunately schools suffer to accommodate children after school due to non-existing and highly inadequate sport facilities and after school programs. Due to long work hours of parents or possibly the high rate of domestic violence, children are forced to entertain themselves at rudimentary gaming arcades in shebeens and it is there where these children are exposed to violence and alcohol at a young and important phase of their development.

Conclusion

Lauren Landau (2007), describes Olievenhoutbosch in a paper on forced migration, as a post democracy 'point-of-entry' township. However, it is of the opinion of the author that the above mentioned problems that correlate with Landau's definition of a 'point of entry' township should not be used as an excuse for the current rate of decay. It should rather influence the architectural response that will form a coalition with existing social efforts to shape the future of the people of Olievenhoutbosch from being a crime stricken township, to one that respects and cares for themselves, and one another- a community that sticks to the rules of the game.

'...COP WAS TOO DRUNK TO HELP!'

(ALLI, ET AL. 2008)



fig 16. Netball game.

RESPONSE__

When the problem statement is considered, it becomes evident that the unique community of Olievenhoutbosch is in direct need of a collective response toward reconciliation and peace building, both within and amongst themselves.

The author stresses the fact that a response possesses the most potential to be successful when it originates from local knowledge and skills - an indigenous response which develops from within the community. This ensures that any further development of a peace building program will have the community's consent rooted in it as the principle idea and promotes ownership that will deter vandalism and prolong the life and health of any built form, especially a public building.

A multifaceted problem cannot be addressed by a single, rigid and unadaptable response. The required response should involve NGO's, government and other statutory bodies to form an alliance with appropriate architectural design and ultimately build upon an existing established effort from the community.

In Olievenhoutbosch the established effort came into being by businessmen and sport enthusiasts of the local community whom decided to take matters into their own hands. Their approach was to harness the community's love for a communal activity that endorses respect and discipline- they found it in sport.

PROJECT AIM__

The aim of this project is to invest in the positive potential of sport as a tool for peace building and reconciliation in a conflict and crime stricken society. Furthermore, the project aims to give substance to the social abstraction of this society and to allow the community to give meaning to a proposed physical structure.



fig 17a. Local soccer team



fig 17b. Local netball team

'CURRENTLY, THERE ARE EIGHT SOCCER TEAMS AND EIGHT NETBALL TEAMS WITHIN OLIEVEN. WE PLAY AT UNDER 13, UNDER 15, UNDER 17, AND UNDER 19 LEVEL AGAINST TEAMS FROM DIEPSLOOT, ALEXANDRA AND ATTRIDGEVILLE.'

(MAROBELA 2012)
(LOCAL FOOTBALL ORGANISER)

SUMMARY__

Problems

1. Unnatural development
 - History
 - Diversity
 - Refugee status
2. Crime & Violence
 - Xenophobia
 - Alcohol abuse
 - Shebeens
3. Lack of positive
 - Social infrastructure
4. After school programmes and Youth development
5. Food and physical health.

Proposed Facility

Visitors participate in sport as non-verbal means of communication that transcends racial and cultural barriers.

Visitors experience the potential of architecture and sport on the fourth dimension (time), to establish a continual routine in the process of reconciliation.

Visitors engage in routine, also expressed in ritual and routes in the landscape. Ritual then further expressed in progression of experience through physical space.

Visitors engage in positive physical social interaction and attempt to overthrow the dominance of shebeens as primary social gathering.

The facility provides infrastructure for the development of a community through sport, but also the development of

individual esteem and self-worth. The building will become a beacon of growth and achievement and reflect the achievement of the community back onto itself.

Areas of play will eliminate the boredom factor and social interaction will draw children away from shebeens and keep them off the streets. These elements of play will be integrated in the landscape to foster integration.

Food has always been a catalyst for gathering in African cultures. The facility will provide space for social gathering by means of spaces for eating and educate the participants on nutrition. The facility will incorporate fruit trees and vegetable gardens in the landscape to emphasise the importance of healthy nutrition.

The facility will have a medical clinic that attends to physical injury, relieving the pressure of a currently over crowded medical clinic.

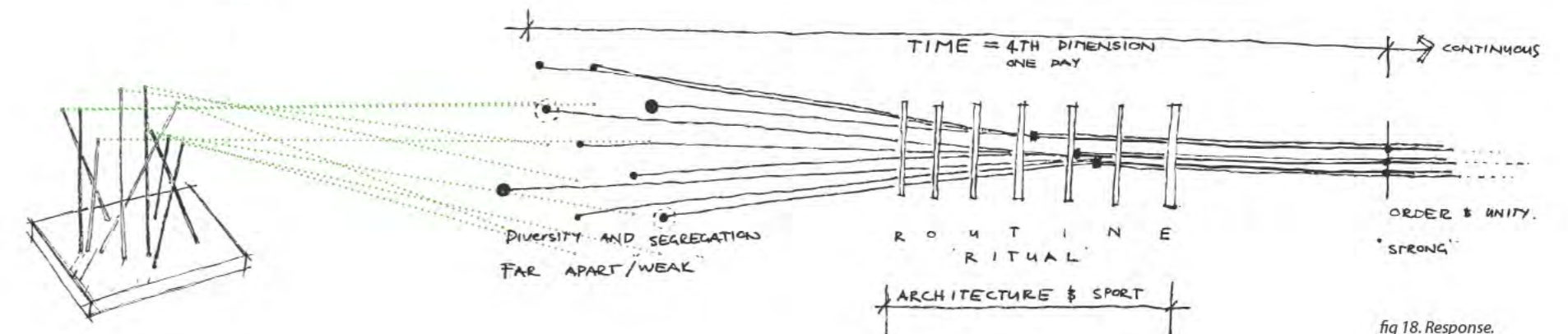


fig 18. Response.

BRIEF__

PROPOSED PROGRAMME__

1

The role of the architect is to assist the clients in selecting an appropriate site and designing a multi-purpose 'sport for development' community centre for the community of Olievenhoutbosch.

2

The architectural intervention must provide a platform for participation, integration and reconciliation and facilitate the development of sport.

3

The intervention should respond to the existing urban condition, the climate and the socioeconomic circumstances as well as involve the community from design process to construction phase.

4

The proposed design should allow for spontaneous growth and future development to ultimately become a place that the community can share and call their own.



fig 19. Soccer ball (Google images).



fig 20. Lace up Africa.



fig 21. Boxing gloves (Google images 2012)



fig 22. Peas. (Google images 2012)



fig 23. Wax model of football player.

1. Sports and Recreation

The aim is to create a facility that responds to the problem of high demand of positive social interaction and low infrastructure to supply it.

This facility will provide the community with a structured and multifunctional space where they can play social sport. It will also provide facilities where people can learn new skills, like swimming, which will improve their physical health.

The sport and recreational aspect will also include multipurpose sport facilities that can be accessed freely by all members of the public for recreational purposes and formal sport meetings.

2. Education

The educational field focuses on integration programmes between schools within the area and the education of coaches and trainers that will enforce mutual respect between all cultures and races.

The facility will create a platform for the development of physical education for all primary and high school students. The physical education program will incorporate sex education, including HIV and Aids, and life skills.

3. Professional Training and Competition

The goal is to provide a facility that can host formal sport meetings within the community and uphold a world class standard in terms of quality.

The facility is within 35 minutes by bus from Oliver Tambo International Airport and should be utilised to accommodate touring international teams in warm-up games or competition against local talent.

The proposed design will also facilitate any individual sportsman or woman in his or her efforts to become a professional athlete.

4. Personal Health and Nutrition

Personal healthcare will be provided on the premises in the form of physiotherapy, biokinetics and other related disciplines. This will relieve pressure from the current local clinic within Olievenhoutbosch and provide the community with an intermediate source of medical attention with regard to physical injury.

A secondary layer focusing on healthy nutrition will not only cater for the provision and retailing of healthy food but also enlighten the community of the necessity of a healthy balanced diet.

Conclusion

These four programs have been designed to develop roots within the community and result in the systematic burgeoning of a community's potential to create new programmes that are not directly related to sport but creates employment opportunities, potential realisation and contributes to a healthier community.

Ultimately, every program must have the ability to be addressed from within the community and aim to expand into a new set of opportunities which will build peace and reconcile a broken and unhealthy community.

PRECEDENT STUDY 1

NIKE FOOTBALL TRAINING CENTRE
SOWETO, SOUTH AFRICA
14 - 03 - 2012



fig 24 a. Locally sourced timber clad facade.



fig 24 b. Locally sourced timber louvres

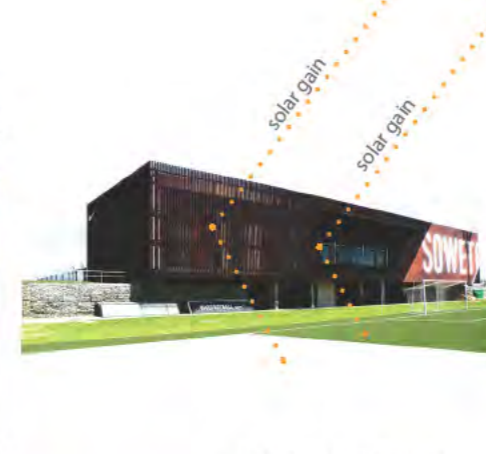


fig 24 c. View from field



fig 24 d. Urban condition



fig 24 e. Wayfinding



fig 24 f. Western facade.



fig 24 g. Interior view



fig 24 h. Sketch of Northern Facade

Introduction

The Nike Football Training Facility, situated in Soweto, was designed by a Canadian firm, RUFproject in collaboration with the Nike Global Football Brand Design over a period of only six months. RUFproject worked in close collaboration with South African firms such as SIP Project Management, MMA Architects, AKI Engineering and Spoomaker & Partners. The construction company was Rainbow Construction, and the graphic production company was Grid Worldwide.

The facility, currently owned by Nike provides football training for 200 000 aspiring young soccer players and in collaboration with 'Grassroots soccer' creates valuable awareness about HIV and Aids.

Strengths

Location: The buildings is ideally situated between community housing, schools and transportation nodes. This makes the investigation particularly relevant, as it responds to a similar context than the proposed 'sport for development' intervention in Olievenhoutbosch.

Architectural Promenade: The building is designed to provide a rich progression of experience. Certain views are hidden or revealed as one moves from one space to another.

Optimisation of Space: Besides the general function of protecting the inhabitants from the elements, the roof structure doubles as an accessible elevated viewing platform for spectators.

Sustainability: Due to the project's tight turn around time, RUFproject decided to focus on the basic principles of heating and cooling by means of sun shading, natural ventilation and reduced energy loads. The rectangular, three-story building is constructed out of steel and features a double-walled air cavity covered with locally-sourced sandstone that acts as a rain screen.

The building is oriented East-West to take advantage of the northern sun. A locally-sourced timber louvre structure suspended from the steel, acts as a sun screen on the East, North and West facades, protecting the building from solar heat gain. The building is cantilevered over the edges of the two main fields, creating shade that keeps the gym and kitchen areas cool (figure 24h).

Aesthetic Richness and Simplicity: The structure is clad with Timber that provides an aesthetic quality. The simplistic design makes the building easy to understand and relate with and is accompanied by well executed wayfinding techniques (figure 24e).

Conclusion

The Nike Football Training Centre deserves a lot of merit, especially if one considers the short time in which it was completed. However, the robustness¹ and inclusivity² of the building toward the public remains a problem. It is the opinion of the author that this building fails to successfully communicate with its surrounds and the building will most probably be more successful in a more

developed area as there is a gap between the image that Nike needs to maintain and the ability of the community to relate with it. It is this 'gap' that ultimately leads to the misuse of the facilities in the building and the termination of daily access to the community of Soweto.

In conclusion, it remains to be said that the contribution of these high quality sport fields have given many potential stars the opportunity to turn their dreams into reality.

¹ The ability of the building to withstand or overcome adverse conditions without attaining major damage.

² Refers to the ability to include everyone to use the facilities that are provided without excessive control or security.



fig 24 i. Community of Soweto.

PRECEDENT STUDY 2

SIYATHEMBA SOCCER CLINIC
SOMKHELE, KWAZULU NATAL
SOUTH AFRICA (UNBUILT)

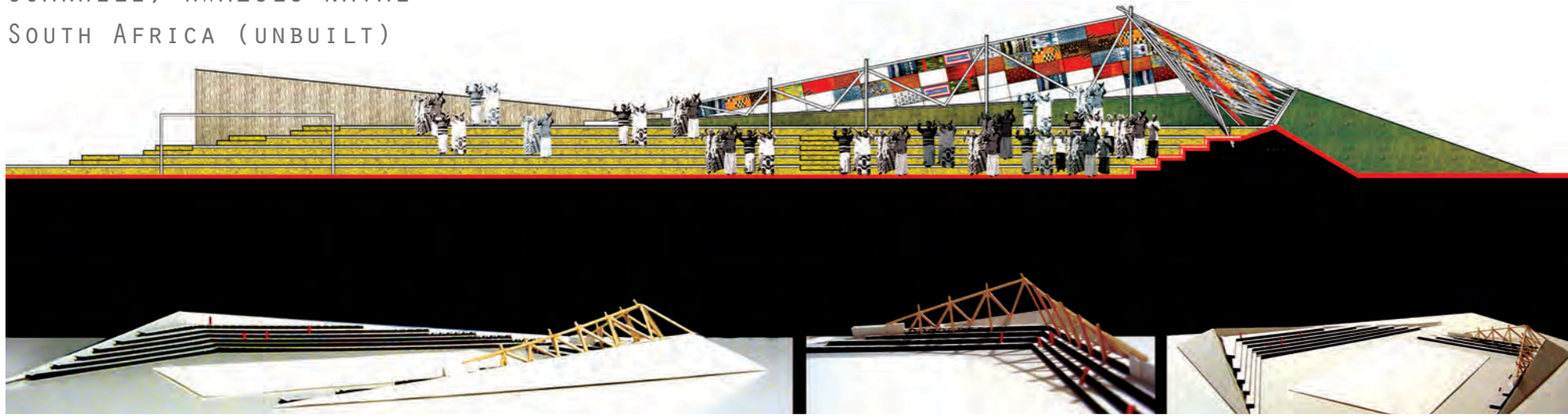


fig 25. Siyathemba soccer clinic (Swee Hong Ng 2012).

Background

Siyathemba soccer clinic, designed by Cameron Sinclair & Swee Ng, is a response on a competition hosted by Architecture for Humanity.

The design is a combined soccer field and health-care facility that focuses on disseminating information on HIV/AIDS prevention and treatment and eventually as a service point for mobile health care within the area of Somkhele- an area with one of the highest HIV/AIDS rates in the world. This facility is run by medical professionals from the Africa Centre for Health and Population Studies and will serve as a gathering place for young people between the ages of 9 and 14. It will serve as the home for the first ever girls football league in the area.

Remarks

Strengths: The Siyathemba project's strength lies in its duality¹. The project effectively harnesses the potential of playfulness and simultaneously provides education on HIV and AIDS. The duality becomes evident in the multifunctional design. Spaces respond in different ways to very different circumstances. The pavilion oscillates between being an expressive space of emotion during a football game to being a receptive space where people are being educated.

Location: The Siyathemba project is situated in the rural community of Somkhele. This limited resources influences the upkeep and life span of the building and ultimately the impact it has on the community.

Range²: The number of people impacted is limited. The project focuses on woman and children, which might lead to sexual discrimination from the local men. This places the structure at risk for vandalism and destructive behaviour from excluded members.

Conclusion

Siyathemba is an integrated multifunction design that responds effectively to a specific problem at a specific place. However, the duality of the building could have been explored further in terms of providing a wider range of facilities that incorporate all ages and race.

¹ Duality is the ability of the building to facilitate different programmatic requirements in a single space. These requirements are often separated.

² The range refers to the depth or scope of the project influence.

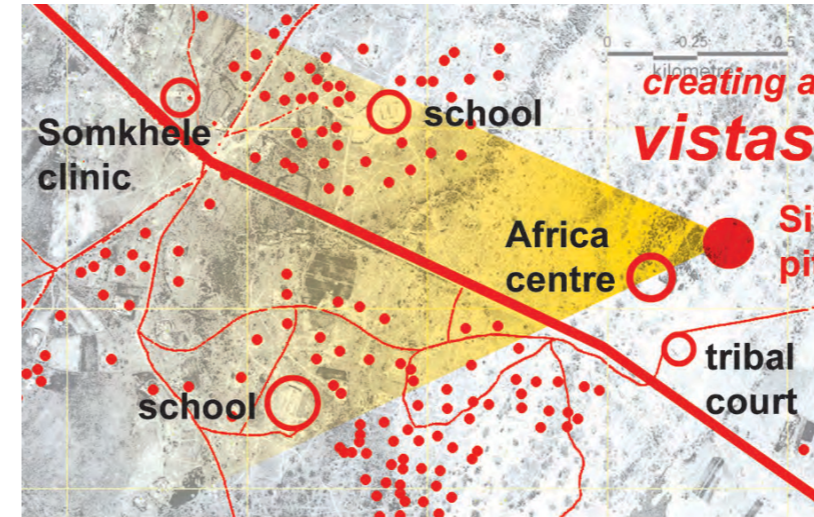


fig 25b. Siyathemba soccer clinic. (Swee Hong Ng 2012)

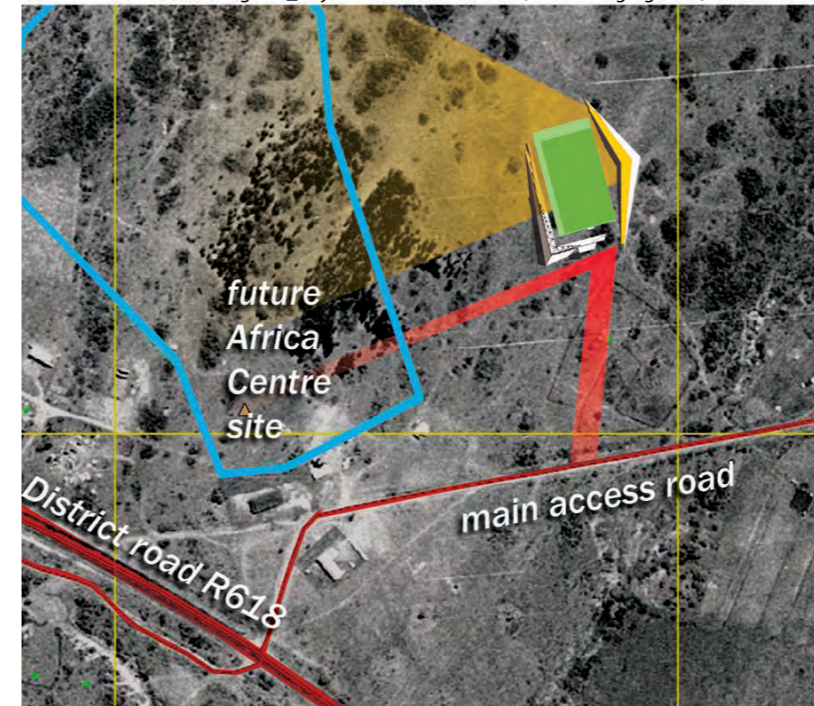


fig 25c. Siyathemba soccer clinic. (Swee Hong Ng 2012)

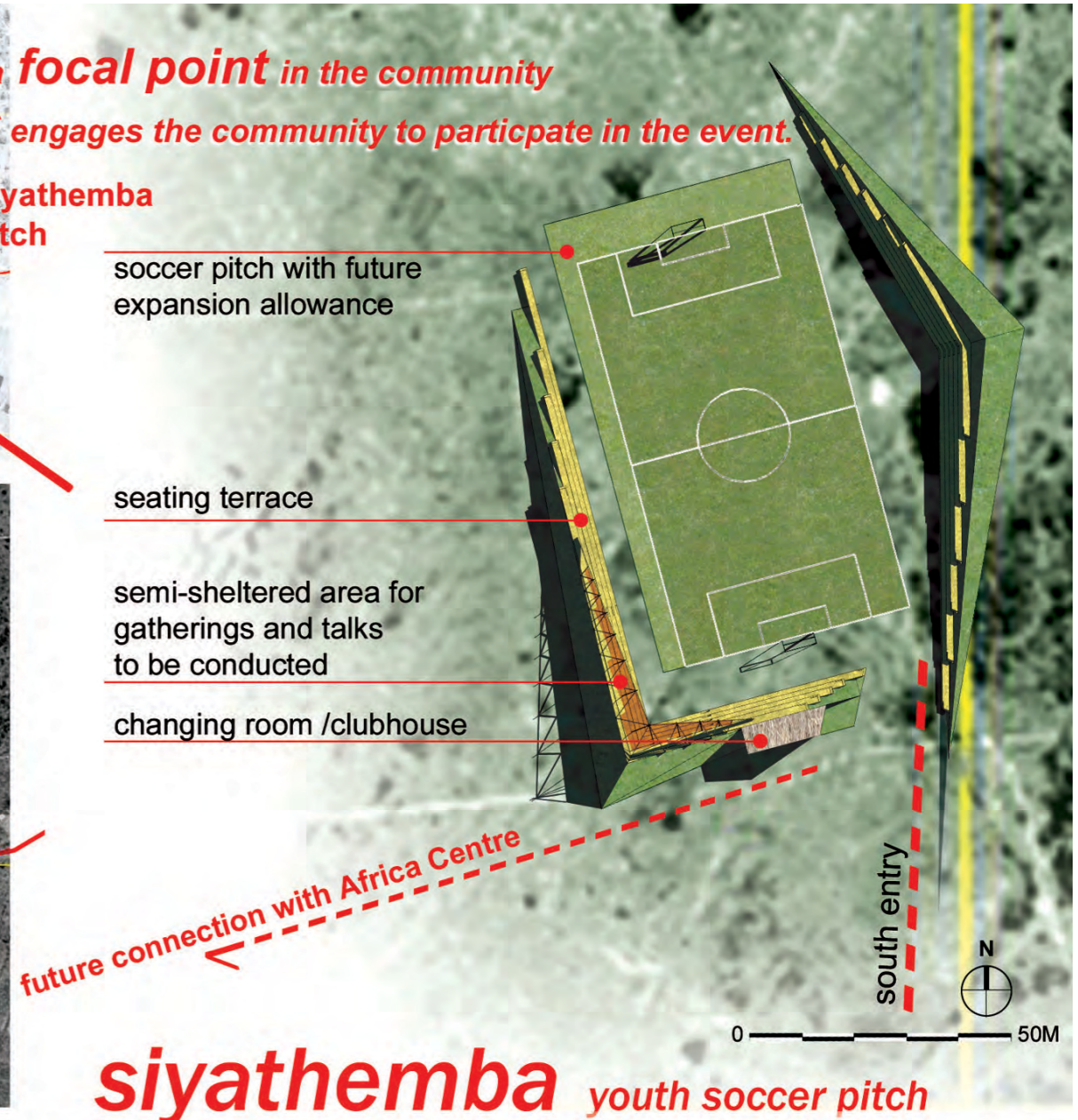


fig 25d. Siyathemba soccer clinic (Swee Hong Ng 2012).

PRECEDENT STUDY 3

FOOTBALL FOR HOPE
SEAM ARCHITECTS - KENYA



fig 26a. Section through site. (SEAM architects 2008)



fig 26b. Rendering (SEAM architects 2008).



fig 26c. Built form (SEAM architects 2008).

Summary

The architects of the proposed Football for Hope Centre, Steve Coombs, Victoria Ridge and Sam Austin aims to disrupt a rigid grid pattern and social divisions by creating a new social centre for the local community. The proposal is not only a single design but a strategy that produces different configurations from the specific conditions of each site allowing community involvement in its development and adaptation to changing requirements.

Their primary aim is to provide every person with access to clean water and a nutritional diet; only when these needs are met, will people benefit from new health, education and sports facilities. Indeed, helping HIV positive people produce their own fruit and vegetables is the most sustainable way to ensure the wholesome

diet so necessary for their immune systems. Public spaces are defined by community buildings which are developed around water points and the centrally-located pitch.

These spaces include a cinema and a public gathering or performance space, linear market, library, computer lab and health clinic. Recycling and sustainability also forms an integral part of the design. Drinking water is captured from roofs and grey water is used for irrigation. A power hub supplies electricity so that people can charge batteries, cell phones and other electronic devices.

Conclusion

Space, structure and form was developed by a series of processes or strategies. These processes started with an understanding of the macro urban fabric and identity. This was followed by a thorough analysis of the site, the daily rituals of the user and an understanding of their basic needs. The designers incorporated their knowledge of the above and strengthened their concept by giving it a layer of social interest, namely: football. The process of analysis and community engagement lead to an architectural response that engages with the community and provides a platform for the community to engage with itself. Finally, this platform manifests itself in space and the space informed the nature of the structural built form.

Strategy

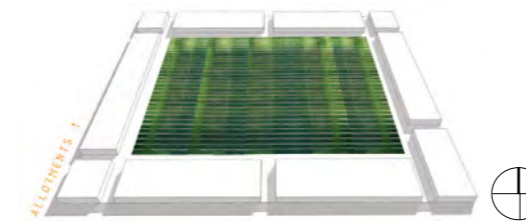


fig 26d. Allotments. (SEAM 2008)

1. ALLOTMENTS

Portioning up the site into community accessible lots using the existing grid pattern that is common in urban areas. The existing grid pattern was identified by analysing the existing urban fabric. See "streeks[TAAL]"¹ (Chapter 02).

¹ Streeks[Taal] refers to chapter 02 that further investigates regional and urban analysis.

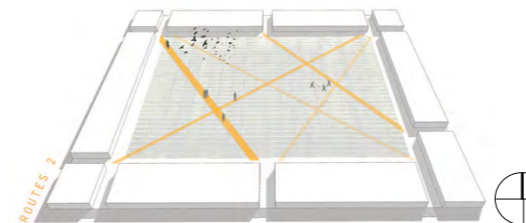


fig 26e. Routes. (SEAM 2008)

2. ROUTES

The existing informal footpaths that are naturally formed due to the reticulation pattern of the community was formalised to appose the existing grid pattern. This means that the designers incorporated the user's ritual into the design by investigating the language of the site. See "Werf[TAAL]"² (Chapter 03).

² Werf[Taal] refers to chapter 03 that further investigates the understanding of site language.

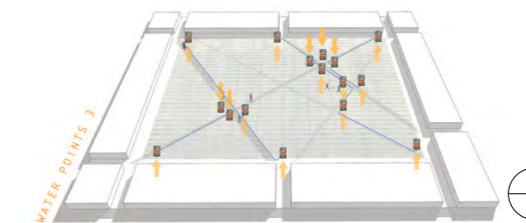


fig 26f. Water. (SEAM 2008)

3. WATER

Water is a basic human need and is especially relevant when dealing with sport. The strategic placement of water points at crossings near the borders of the site is an architectural response to this need. This informs space and structure.

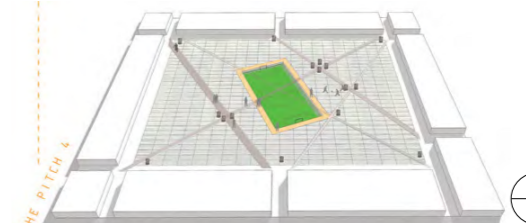


fig 26g. The pitch. (SEAM 2008)

4. THE PITCH

The football pitch is the catalyst in the process of creating this public space. The designers focussed on a communal interest to achieve and establish social interaction. The pitch is sunken one meter into the ground.

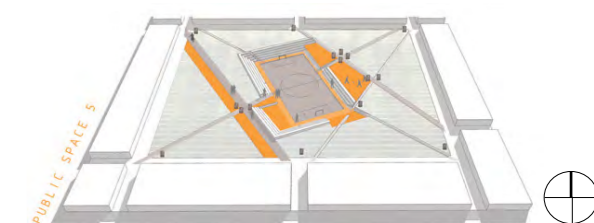


fig 26h. Public space. (SEAM 2008)

5. PUBLIC SPACES

Public spaces are located around water points. Thus, need leads to the creation of spaces.

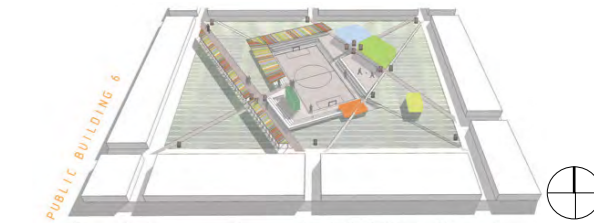


fig 26i. Buildings. (SEAM 2008)

6. PUBLIC BUILDINGS

The building sits within and around these public spaces forming the boundaries or thresholds between spaces.

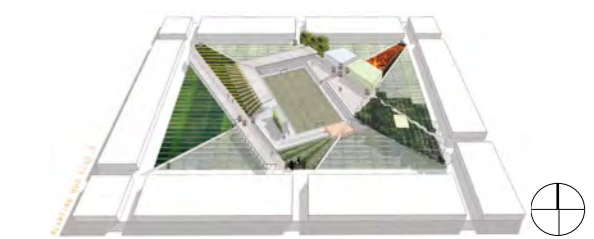


fig 26j. Fruit trees and vineyards. (SEAM 2008)

7. PLANTING OF FRUIT TREES AND VINYARDS

This binds the site together.

PRECEDENT STUDY 4

STEINKOPF COMMUNITY CENTRE
ARCHITECT: R. UITENBOGAARDT
1978

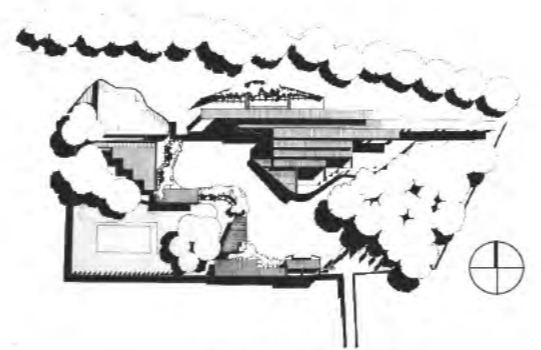


fig 27. Site plan. (Flicker 2012)

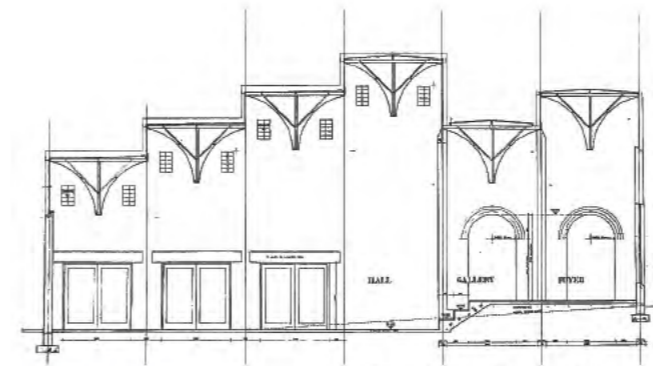


fig 29. Section. (Flicker 2012)

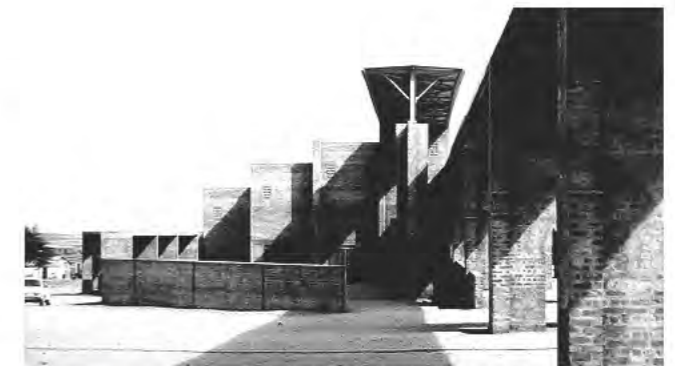


fig 30. View to hall. (Flicker 2012)

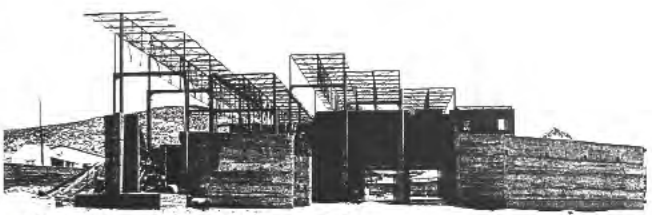


fig 31. Construction. (Flicker 2012)

Introduction

Today, the Community Centre at Steinkopf¹, designed by Roelof (Sarel) Uitenbogaardt² in 1978 lies in ruins. This is regardless of the fact that the Steinkopf Community centre was published internationally as a leading example of South African late 20th century. It is the opinion of the author that context played a very influential role in the systematic decay of the building. However, in its original state, the building responded to a series of criteria, very similar to that which is present in Olievenhoutbosch. As such it is relevant for further research. The Steinkopf project was conceived as a permeable place of shade, shelter and colour in a very arid landscape with very little built structure to respond to, a constraint and opportunity very similar to the proposed sport centre in Olievenhoutbosch.

The Roof

A second challenge that these two projects have in common, is the necessity for roofs to span large distances. In the case of Steinkopf, the structural roof system is separated from the enclosure system. The construction of the structural walls primarily made use of local construction teams and locally sourced materials but the roof required a specialist subcontractor to erect the large span roofing that was prefabricated in Cape Town. The roofs extend past the enclosed spaces to serve the dual purpose of binding internal spaces together as well as creating external circulation spaces that define the edge of the adjacent street. Uitenbogaardt also identified the underlying potential of the linear roofs and stepped them away from the sun to form a system of clerestory lighting.

The Floor

The floor of the community centre is stepped and terraced that allows for various parts of the building to be used in various ways.

Conclusion

Steinkopf lies in Ruins, but the architectural principles put in place by Uitenbogaardt serves as a very influential precedent for the development of the Olievenhoutbosch Sport for Development Community Centre.

¹ Steinkopf is a town in the Northern Cape, South Africa. Formerly known as Kookfontein, it was established as a mission station by the London Missionary Society, but was later taken over by the Rhenish Mission (Steinkopf, South Africa [sa]).

² South African Architect, urban planner and teacher (Roelof-Sarel-Uytenbogaardt 2012).

fig 28. View from street. (Flicker 2012)



VOORTREKKER MONUMENT

FORT SCHANSKOP

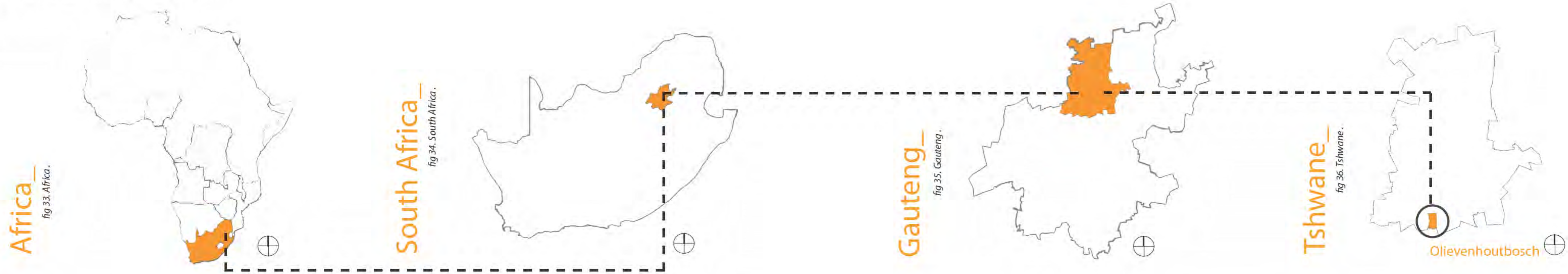
TELKOM TOWER

FORT KLAPPERKOP

STREEKS[TAAL]
URBAN ALYSIS + CONTEXT + FRAMEWORK

02

URBAN ANALYSIS



LOCATION



fig 37. Immigrants (UNHCR 2006)

According to the United Nations High Commission Of Refugees, the lack of structured and democratic governments, insufficient use of natural resources and low employment opportunities drives hundreds of immigrants over South African borders every day in the hope of finding a better livelihood (United Nations High Commission of Refugees 2012).

Currently, Olievenhoutbosch houses international immigrants from Nigeria, Malawi, Somalia, the Democratic Republic of the Congo, Zimbabwe and Mozambique (UNHCR 2012). This vast diversity of cultures partnered with a very high crime rate caused the xenophobic reaction in 2005 and 2006. However, it is not only the international immigrants that cause the diversity of cultures

within Olievenhoutbosch. A multitude of refugees from the East Coast of South Africa are currently living with family and friends within the township due to droughts in 2010 and 2011 (Shikwambane 2012).

According to Mr. Shikwambane, local school principal, this has particularly made the educational system very difficult. Schools have to tender for a variety of languages, including: isiZulu, siPedi, Tswana, Xhosa and Zulu. Also, children are not forced to play with one another across cultural boundaries. It is the opinion of the author that the lack of sport programs at schools could provoke prejudice between cultural groups. Sport is a language that transgresses cultural and linguistic barriers and it is of cardinal

importance to enforce intercultural exchange among scholars from a young age.

Olievenhoutbosch, in Tshwane, South Africa will be the ideal setting for the proposed sport-for-development architectural intervention. NGO's such as Telkom Learn to Swim, The United Nations High Commission of Refugees, Grassroots Soccer and Netball South Africa are all situated within Gauteng and within range of the proposed facility.

Touring international teams will be able to use the facilities for training and competing against local talent.

The proposed development will also tie into and where necessary adapt the Tshwane Municipality and Absa DevCo's proposed urban development framework, which recognises the need for formalised sport in Olievenhoutbosch.

HISTORIC SUMMARY

Pretoria CBD



fig 38 a. Nolli map of Pretoria CBD. (Pienaar, M 2002)



Olievenhoutbosch



fig 38 b. Nolli map of Olievenhoutbosch.



fig 39. 2005 map.



fig 39 b. 2007 map.



fig 39 c. 2009 map.

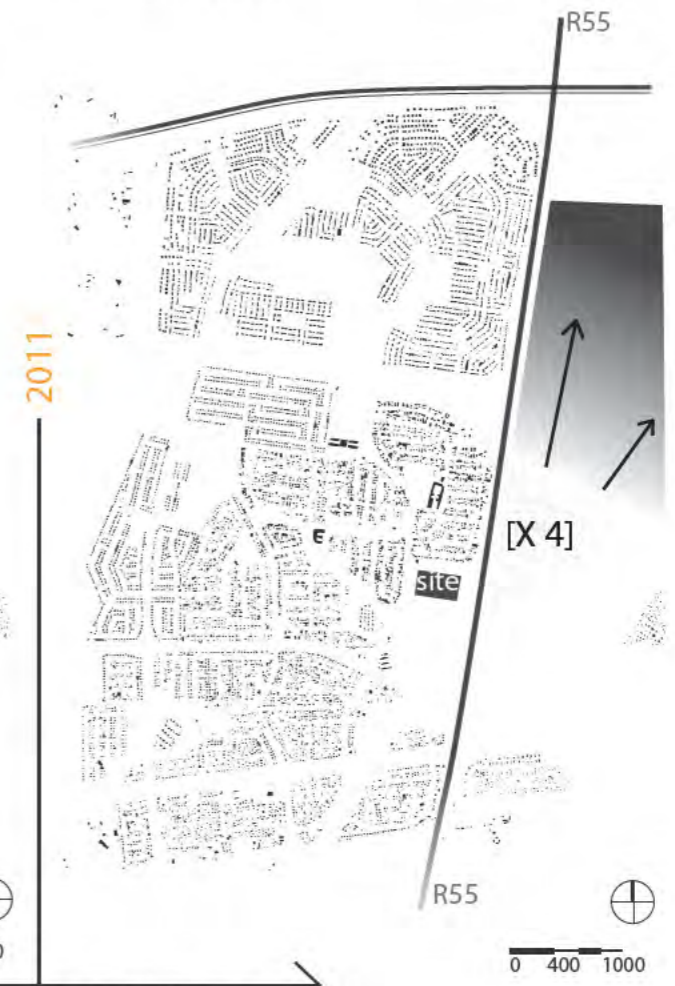


fig 39 d. 2011 map.

EXPANSION + DEVELOPMENT

The illustration clearly depicts the morphological nature of Olievenhoutbosch from 2005 to 2011. This is due to the sudden development of informal housing on the western side of the R55 in 2007 to 2009 followed by the relocation of those residents to RDP houses on the Eastern side of the R55 between 2009

and 2011. Currently, the only permanent residential area on the Western side of the R 55 is Extension 4, as indicated.

For further analysis, the author will focus on the developing areas and their influence on the proposed site for intervention and architectural response.

HERITAGE



fig 40 a. First house in Choba.



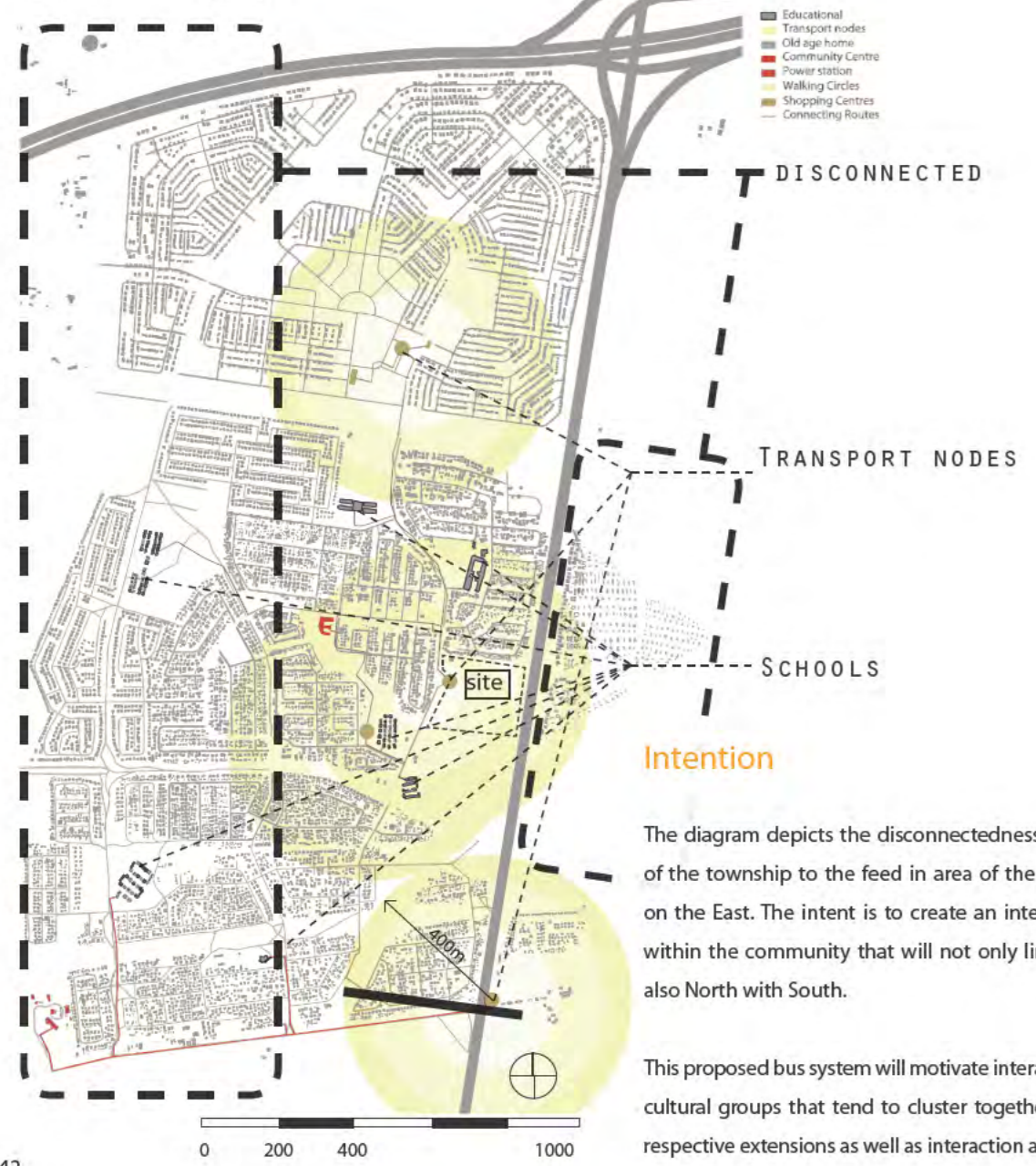
fig 40 b. Ruins of old tabaco store.



fig 40 c. Ruins of old tabaco store.

TRANSPORT AND SCHOOLS

fig 41. Transport mapping.



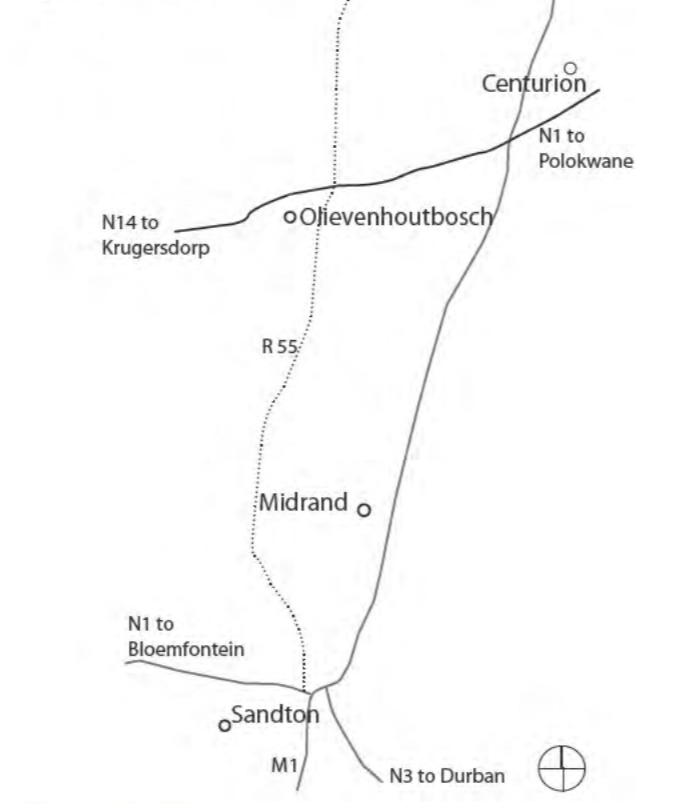
Intention

The diagram depicts the disconnectedness of the western areas of the township to the feed in area of the transportation nodes on the East. The intent is to create an internal transport system within the community that will not only link East with West but also North with South.

This proposed bus system will motivate interaction among different cultural groups that tend to cluster together within the different respective extensions as well as interaction amongst schools.

ACCESS

fig 42. Proximities.



Proximities

The reason for the rapid expansion of Olievenhoutbosch lies in its geographic location with relation to Centurion, Midrand and Sandton.

According to the census of 2001, 60% of the population is 30 years and younger, 24% self employed and 20,5% unemployed. This results in a powerful labour source that is dependant on public transport to the respective CBD's.

ROADS

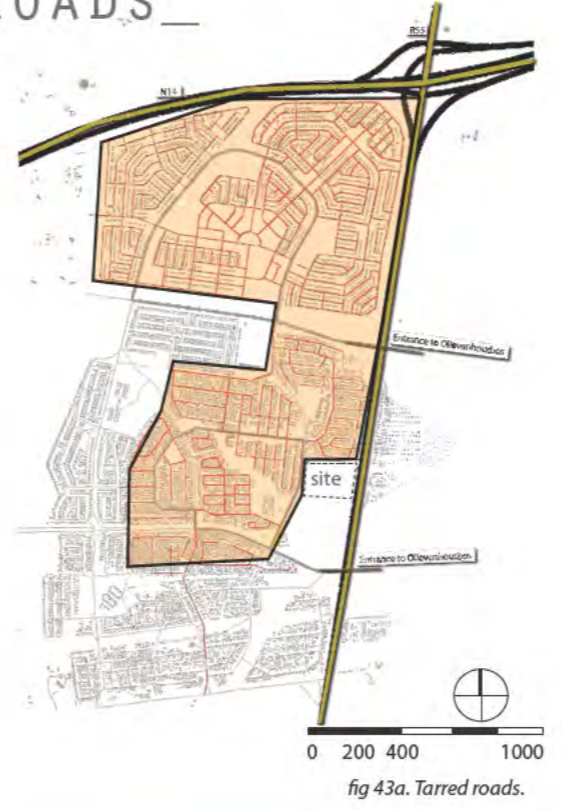


fig 43a. Tarred roads.



fig 44a. Tarred Roads.

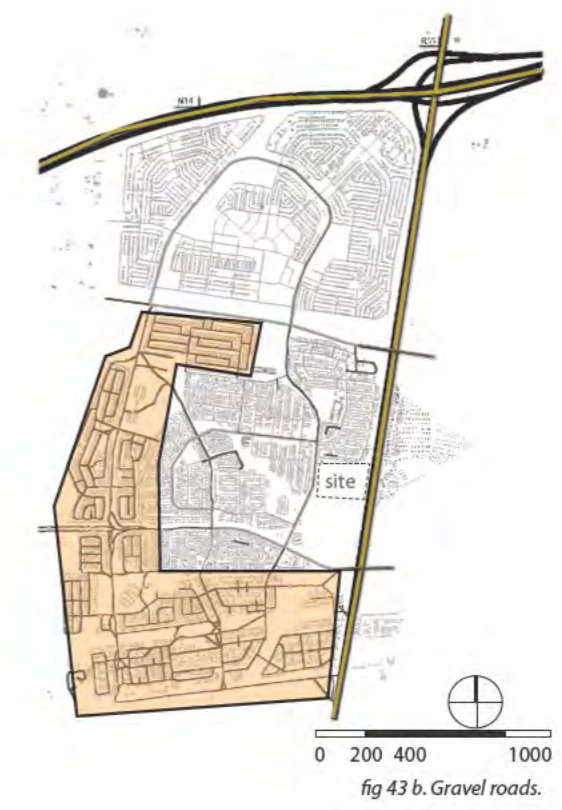


fig 43 b. Gravel roads.



fig 44 b. Gravel roads.



fig 43c. Proximities.



fig 44c. Foot paths.

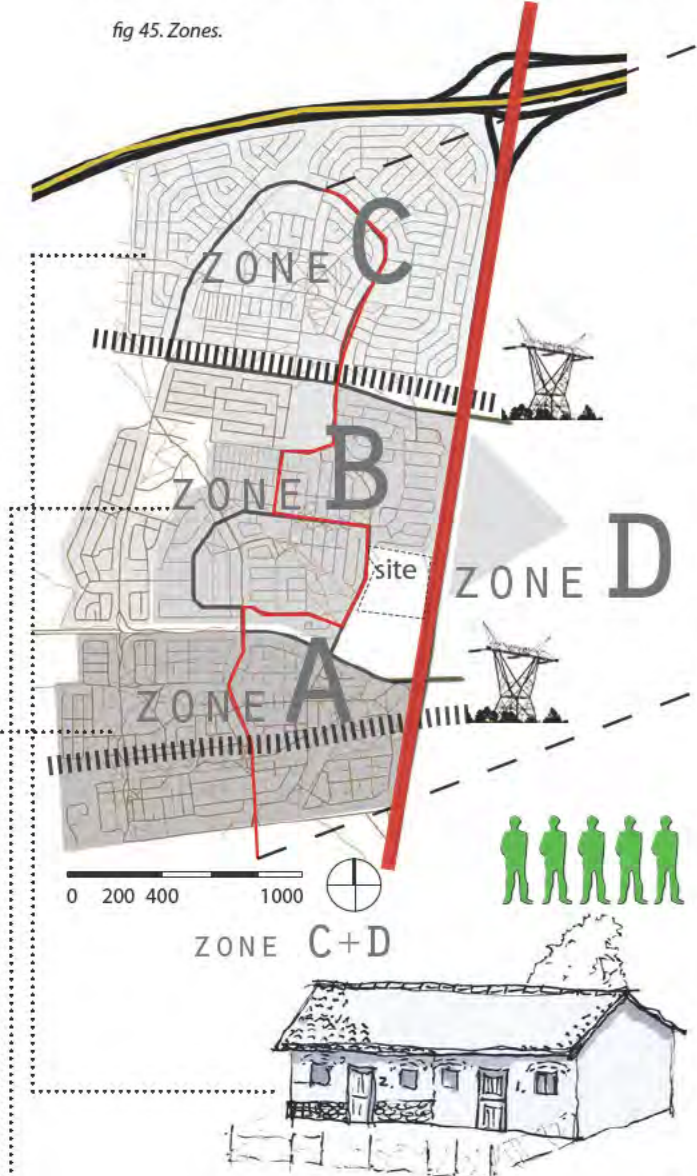
The road conditions within the township is one of the primary reasons for the unbalanced distribution of transportation. The figures above indicate the gradual progression of

gravel roads on the southern areas to more formalised tarred roads on the northern hemisphere of the township. At closer investigation the footpaths indicate that the primary pedestrian

movement occurs along a East-West axis, especially along the strip of interconnected green spaces that form a belt across the width of the township a shown in fig 43c.

DIVISION AND DENSITY

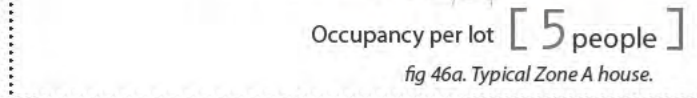
fig 45. Zones.



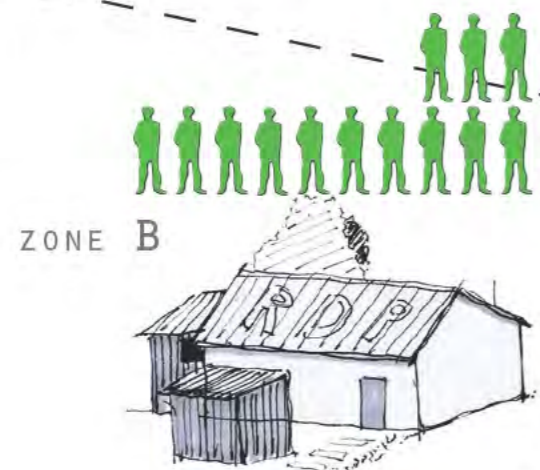
Current connecting route

The connecting route spans through different zones and reflect the inherent identities and road conditions throughout. These zones are divided by overhead Eskom power lines and the notorious R55 road that is responsible for the death of five school children in the last three years (Shikwambane 2012). Further analysis will occur along the analysis spine by identifying nodes and activity spines that run parallel to or intersect with the chosen route.

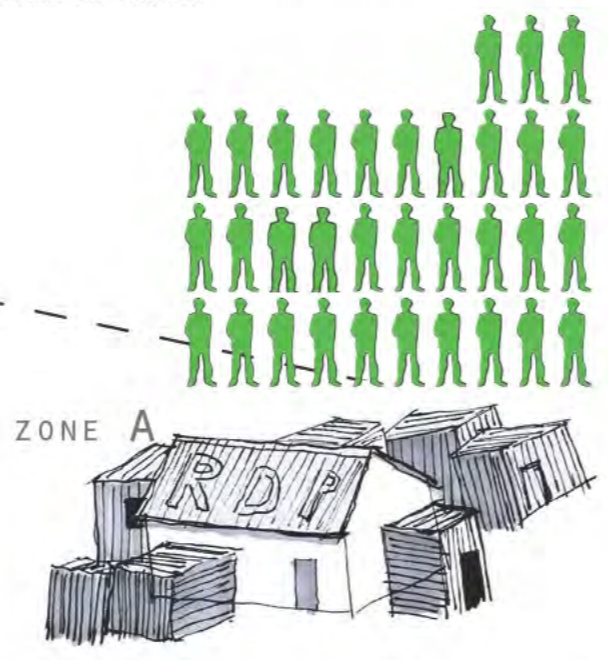
The aim is to establish a connection between nodes by means of promenades, green spaces and pedestrian bridges that are informed by the investigated theories to make urban design decisions. These urban design decisions will ultimately aid in the process of community building and provide a platform for the architectural intervention.



Occupancy per lot [5 people]
fig 46a. Typical Zone A house.



Occupancy per lot [13 people]
fig 46 b. Typical Zone B house.



Occupancy per lot [33 people]
fig 46c. Typical Zone C house.

PUBLIC TO PRIVATE INTERFACE

Analysis nodes

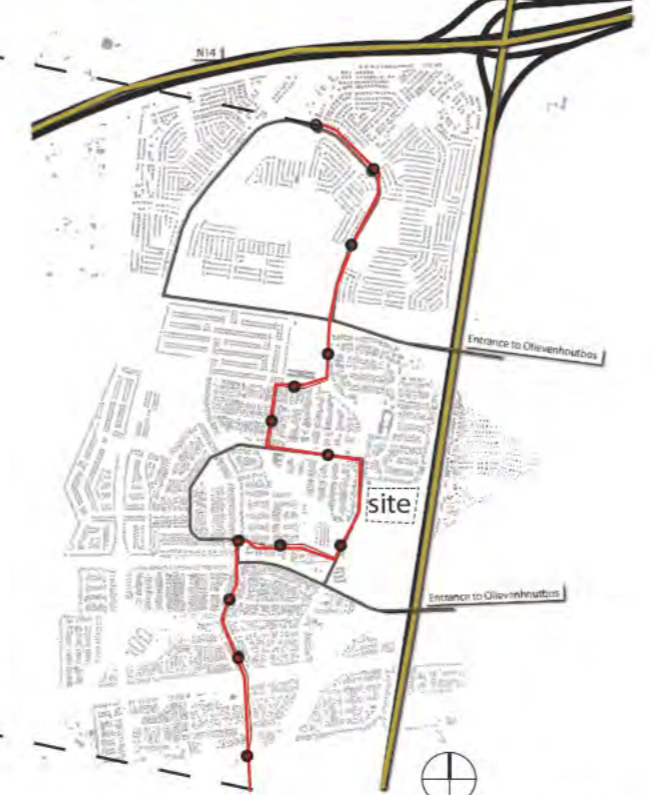


fig 47. Nodes

Public to private interface

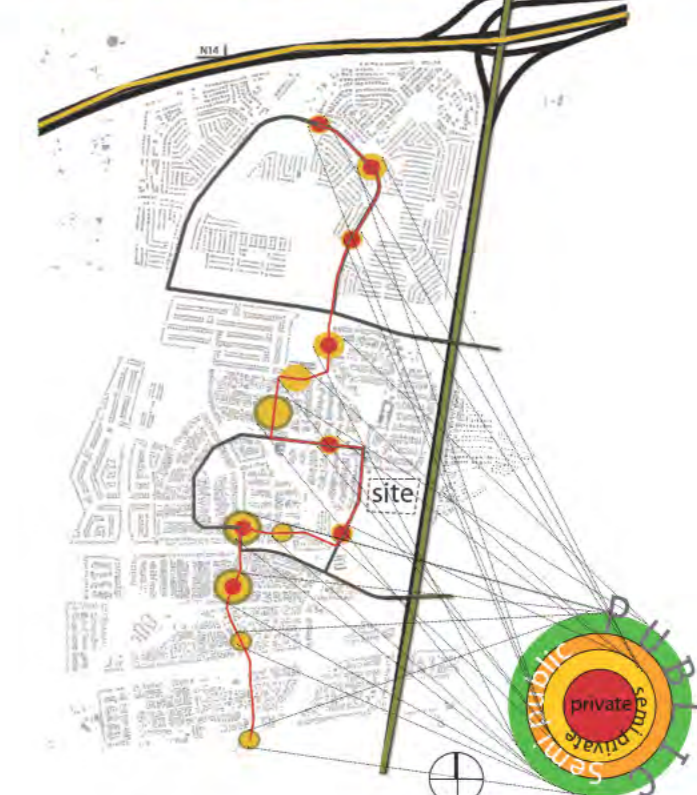


fig 48. Prvacy

Density change over nodes

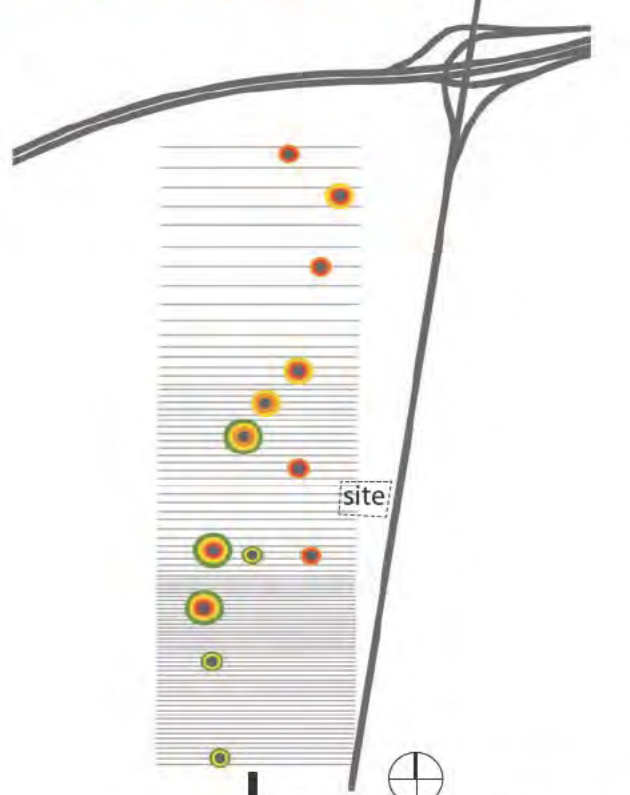
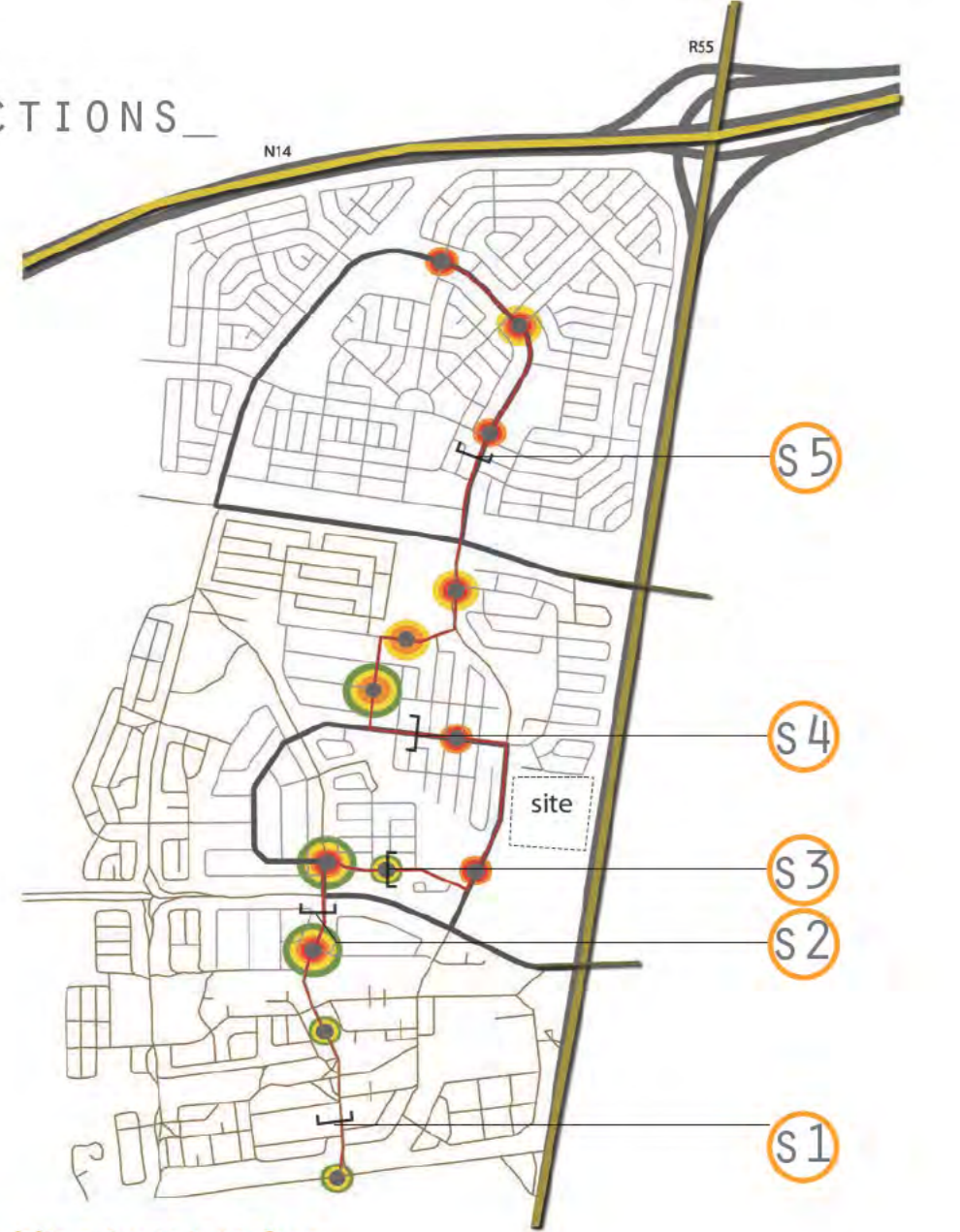


fig 49. Dencities

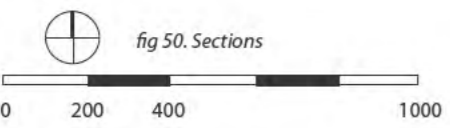
At every analysis node, the interface between the public and private realm differs.

SECTIONS



The public private interface

The sections are drawn to analyse the effect that architectural elements such as lighting, level differences, shading, width of walkway, scale and surface material has on the interface or threshold that determine public and private space.



GREEN SPACES AND EXISTING SPORT FACILITIES

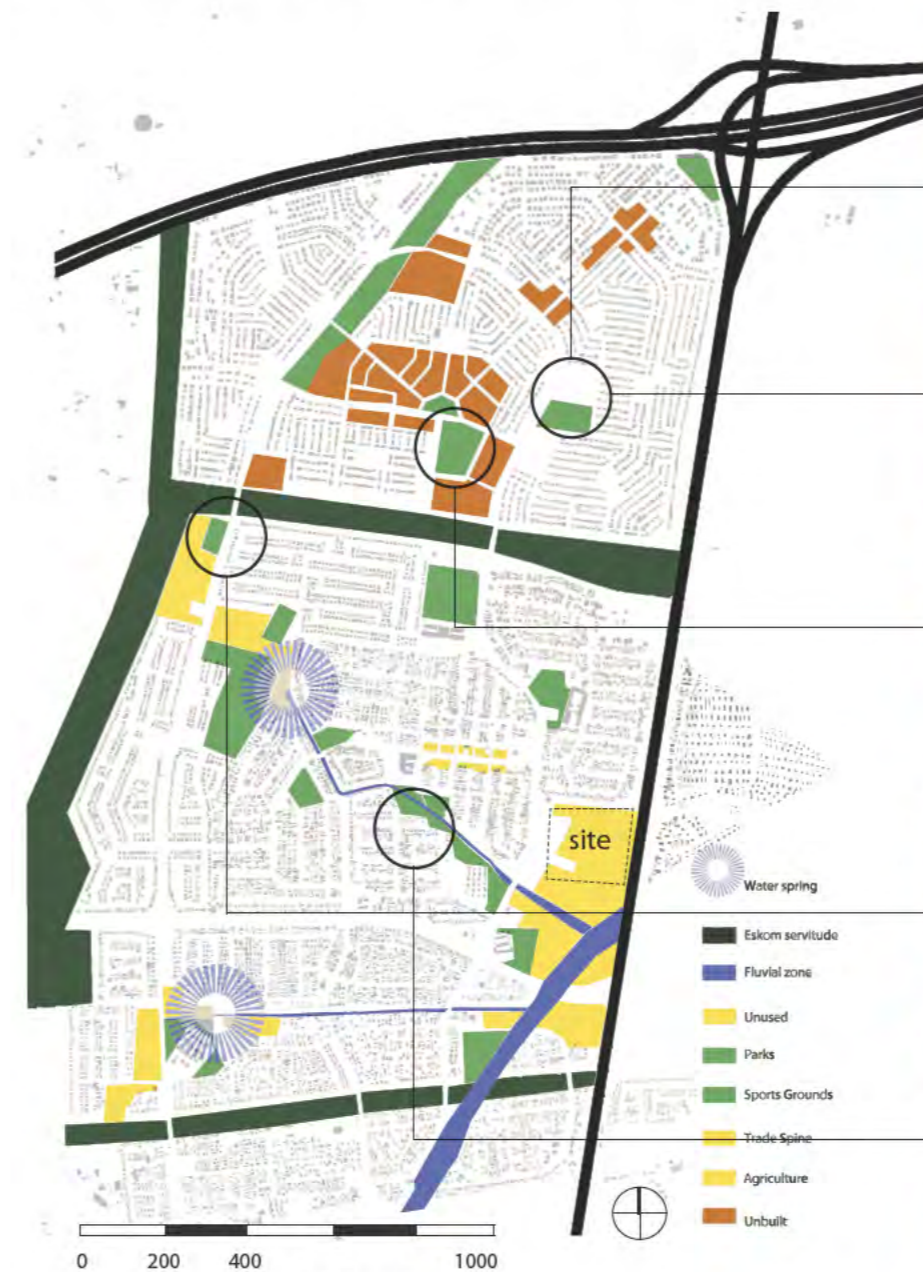


fig 52. Green spaces.



fig 53 a. Absa soccerfield.



fig 53 b,c. netball.



fig53 d. Absa soccerfield 2.



fig 53 e. Ext 37 soccerfield.



fig 53 f. Community Centre Netball

Background

Currently, most of the green spaces within the township are informal pieces of land around the fluvial areas of two water springs. These green spaces pose potential for the establishment of promenades and parks but are currently unused, overgrown and dangerous in terms of crime and violence as well as occasional flooding. In 2010, two young boys drowned during the rainy season when they attempted to cross one of the streams on their way back from school. The municipality canalised the water streams to avoid corrosion but this only intensified the velocity of storm water and made these streams even more dangerous.

Intent

The Streams: Both streams on Olievenhoutbosch sprout from a subsurface spring and flow in a eastwardly direction where it joins the Rietspruit river. The potential of these streams should be optimised by rehabilitating the indigenous plant life, aquatic and bird species and for irrigation of community gardens.

Bridges: As mentioned above, there is a need for bridges that create safe passage for people over the streams. These bridges will ultimately aid in connecting a divided community.

Servitudes: The Eskom power lines currently divide the community in three zones. These three zones have very different identities and densities. The intent is to utilise the areas within the servitudes for agricultural purposes and multi-functional park space

Existing Parks: The existing parks are used for play and performance by the local community. The intent is to upkeep these parks and connect them where possible with safe walkways that connect nodes with educational routes.

CONTEXT AND IDENTITY_

Identity on Route

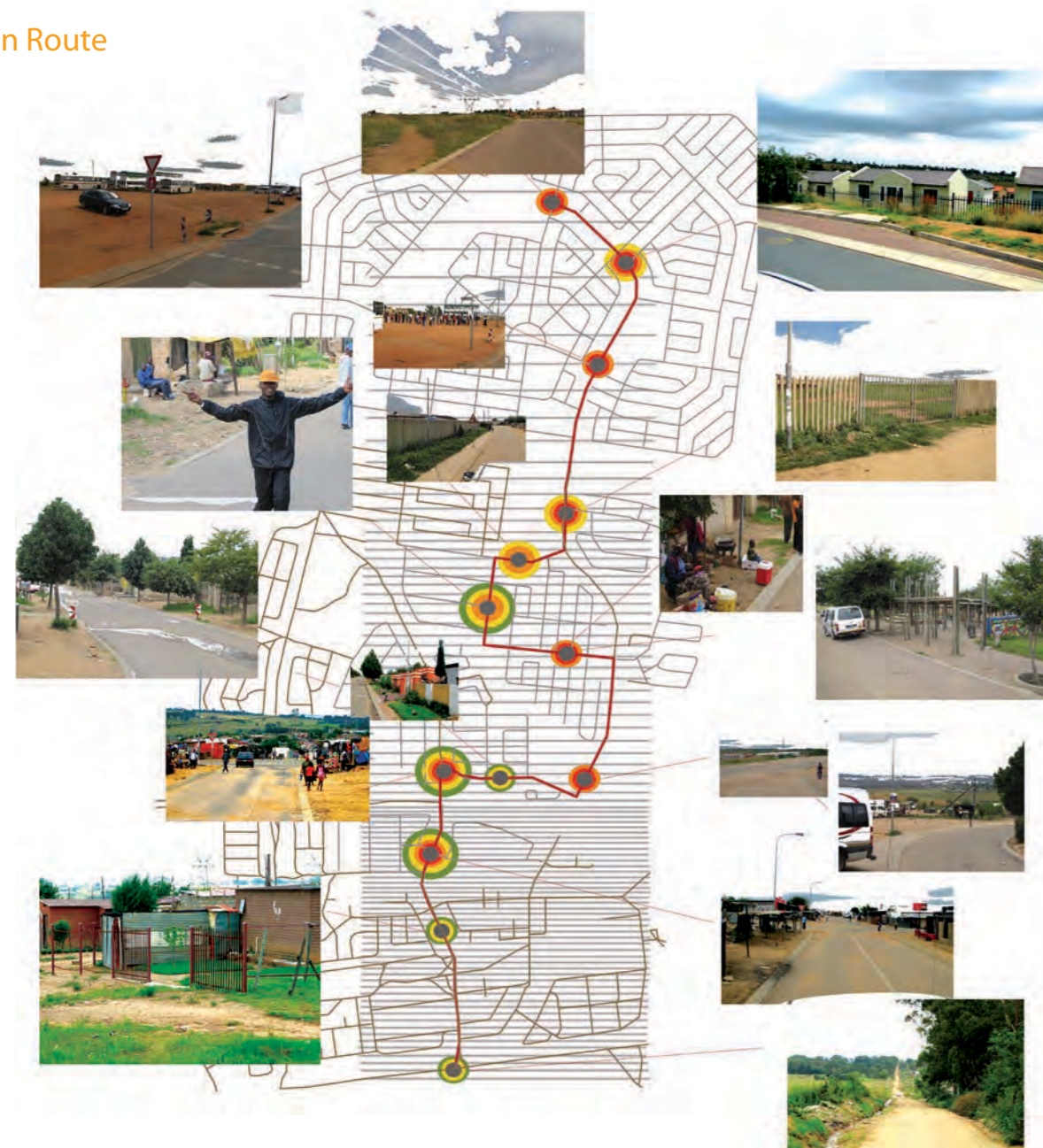


fig 54. Identity

A THOROUGH UNDERSTANDING OF THE FLAVOUR¹ AND IDENTITY OF THE HOST COMMUNITY WILL PROVIDE THE DESIGN WITH AN INTANGIBLE UNDERTONE THAT COMMUNICATES WITH THE SUBCONSCIOUS OF THE USER.

¹ The flavour of the community refers to the intangible elements that cannot be directly analysed but only understood when the architect allows himself to engage with the community and understand how they think, live and interact.

Transport

Considering the poverty rate within the township, it is not uncommon that most of the residents are dependant on public transport. Taxis are the most common means of public transport

but due to recent events of taxi violence in 2011, the government issued a fine that 'grounded' taxis for a certain period of time. Tshwane buses have been employed to fulfil the roll of the

mini bus taxis, but according to Karien Kruger, journalist for the Beeld, residents are unhappy with the bus system as drivers drive recklessly (Beeld 2011: 6).



fig 55 a. Arrival at the game.



fig 55 b. Arrival at the game.



fig 56. Absa buss depot.

The Fans
[Umbrella Town]



fig 57 a. The Fans.



fig 57 b. The Fans.



fig 57 c. The Fans.



fig 57 d. The fans.



fig 57 e. The fans.



fig 57 f. The fans.

What is striking when observing the community of Olievenhoutbosch is the amount of umbrellas, thus the author refers to it as 'Umbrella town'. Umbrellas are used in all weather

conditions to protect the individuals from the elements, whether rain or shine. The umbrella has a flexible characteristic by which it transforms from an object into a space creator. These spaces can

suggest directionality, safety, unity, romance and relaxation. These characteristics should amalgamate in the architectural response.



fig 58 a. Flexibility.

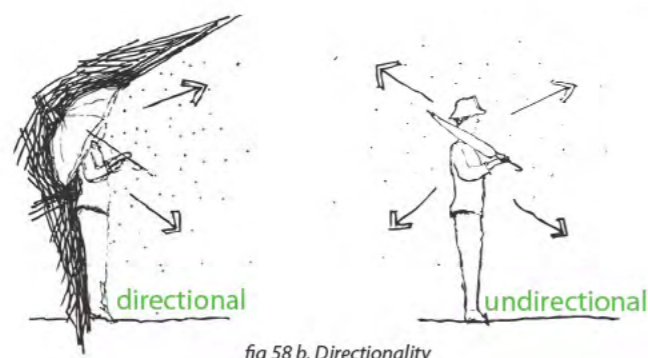


fig 58 b. Directionality



fig 58 c. Sheltered space



fig 58 d. Romantic space.



fig 58 e. Relaxed space.

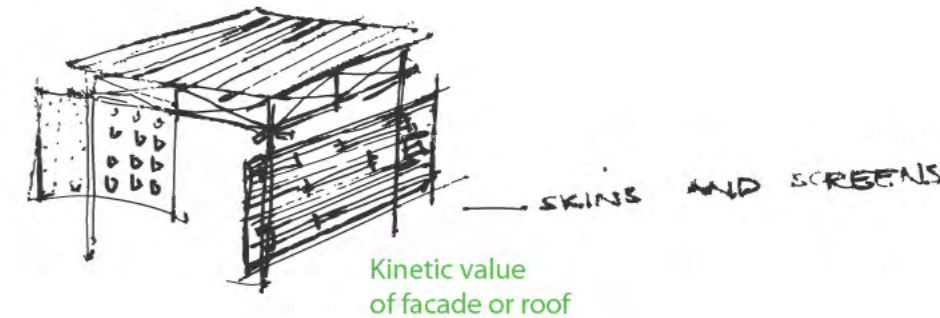


fig 58 f. Architectural interpretation.

The Players

Olievenhoutbosch has a Top 8 league in soccer and Top 4 league in netball. Every team has five different age groups that compete

with teams from Attrigeville, Diepsloot and Alexandra. Only two fields are available for the young teams to play and only on

Saturday mornings, as the other members of the community occupy the gravel pitches on Saturday afternoons and Sundays.



fig 59 a. 'The players': under 14 netball team



fig 59 b. 'The players': under 19 striker holding boot



fig 59 c. Coach looking on.

The 'Games'

For 24% of an estimated 180 000 residents, the 'game' is self employment. This ranges from brick making, metal and plastic

recycling, entrepreneurship etc. Some of the other more fortunate residents work as domestic workers (women) and builders (men)

in nearby developing communities.



fig 60 a. 'The game': brickmakers



fig 60 b. 'The game': entrepreneurship.



fig 60 c. 'The game': entrepreneurship. sweets.



fig 60. Entrance.

URBAN FRAMEWORK DESIGN

Introduction

The most challenging aspect of township architecture, especially on a green field site, is the absence of permanent built form and structure. Existing built structure provides the architect with constraints and opportunities to respond to and essentially give form to the architecture.

Olievenhoutbosch started to develop in 1996 and given its adolescent state, the township has very few places of heritage value. This deprives the architect of the opportunity to respond to the past.

This emphasises the importance of the framework design. The framework allows the architect to respond to something that will eventually influence everyone. It creates the platform to design buildings that evaluate the present condition and respond to the future.

A public building possesses the inherent potential to become a node in a network of future developments and thus becomes the stimulus in the process of creating a new urban condition.



¹ A process by which molecules of a solvent tend to pass through a semipermeable membrane from a less concentrated solution into a more concentrated one, thus equalizing the concentrations on each side of the membrane.



fig 61 a. Framework.

Osmosis

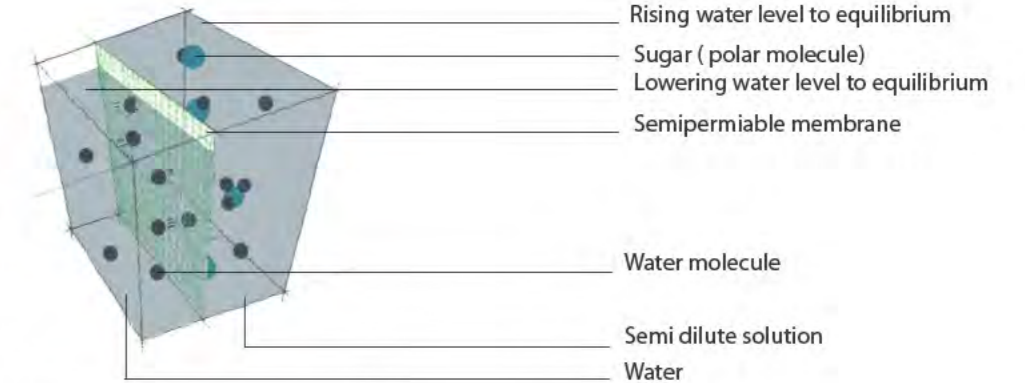


fig 61 b. Osmosis across a membrane

The concept of the framework (osmosis) developed as a response toward a stale community that is divided by a series of 'membranes'.

These membranes range from physical objects of separation to cultural divides. The framework attempts to establish a flow that will cause the water molecules

(the people) to become active and interact across boundaries.

The trigger to this reaction is the introduction of a polar molecule (certain key nodes) that will initiate the movement of the water molecules, until the solution becomes 'isotonic'²

² When water concentration is in equilibrium on both sides of a membrane. This instance refers to the interaction of different community members across boundaries.

- [a] : agriculture
- [c.c] : community center
- [c.s.c] : community service center
- [s] : schools
- [p] : parks
- [t] : transport
- [b.s] : bus stops
- [s.g] : sports grounds
- [r.d] : retention dam
- [com1] : informal trade
- [com2] : semi formal trade
- [corp] : corporate



fig 61 c. Framework

Transport: **Currently:** Public transport is the major mode of transport in the area. These are served by two taxi ranks focusing on transport to Centurion, Midrand and Sandton. Busses were brought in to serve the Tshwane area after taxi violence caused disruptions in the area. **Intention:** The bus depot to the North is to be formalised and would assist in creating the community node in that area. It is proposed that the existing taxi ranks should be upgraded with formalised waiting areas and ablution facilities.

Roads: **Currently:** Not many of the roads in the central and southern areas are tarred. There are two ring roads in the area, one in the northern section and the other around the central. **Intention:** A ring road is proposed to connect all three areas. Bus stops are allocated along this road close to the schools and other points to facilitate easy access.

Schools: **Currently:** There are seven public schools in the area, of which two are secondary schools and a private school for the foundation phase. Only two of the schools have a permanent structure with sport facilities. The others schools are temporary structures constructed within the past two years. There are currently no schools in the North. **Intention:** A primary school and a school for music and art are proposed in the Northern section. The existing temporary structures would need to be upgraded and additional facilities, including sports grounds provided.

Sports grounds: **Currently:** Apart from some of the schools, the sports grounds are created by the community due to the need, on dusty open fields and are inadequate to provide for the entire community. Soccer and netball are the main sports catered for. **Intention:** A center that would cater for competitive sports and training is proposed in the central area, near to the existing stream. Existing sports grounds in the North, and new satellite sport grounds in the South will support this new center.

Streams: **Currently:** There is a river running through the area from West to East, which ultimately joins the Rietspruit River. There is pedestrian movement along the river. Most of the river is contained in a concrete canal, which creates yet another barrier. **Intention:** It is intended to establish a pedestrian link between the East and West of the area using the river and adjacent green space. This green belt will double as an educational route and recreational park. The concrete channel is to be removed so that nature can reclaim its space as well as to allow for social activities along its banks.

Retention dam: **Currently:** On the eastern side where two streams meet the area is unused and inaccessible. **Intention:** Creating a dam at the intersection of the streams would create a recreation area that would be an appropriate termination of the east west activity axis. The water could be used for community gardening and the irrigation of sport fields.

Power lines: **Currently:** the power lines divide the community of Olivenhoutbosch into three different zones. When looking at the definition of Osmosis, the power line servitudes are the physical membranes through which a "fluid" (people and their identity) should move to create equilibrium within the community. The servitudes are currently vast open space with no character or function. **Intention:** to use the ground under the power lines for community farming. Where the servitudes were once a place of segregation, it is now a place of community interaction and self-sustainability.

Community node: **Currently:** the single existing community center struggles to sustain the continuous pressure from the community. This entails a single clinic with no permanently employed doctors, a small pharmacy, a library, a community hall and ablution facilities. **Intention:** to create a secondary community node that will alleviate the pressure of the existing community center. Ultimately a pedestrian spine that incorporates park space and trade will connect these two community nodes.

Community service centre: **Currently:** The business district, otherwise known as 'Marabastad' creates an activity spine. This entails activities such as retail, car washes, metal recycling and other activities that contribute to the gross income of the community. **Intention:** To establish this spine as the community service center that forms the third and most southern community node. Accordingly, this activity spine will be strengthened as it is connected with the existing community center.

Parks: **Currently:** The parks within the township are currently used by many residents but in a state of decay. Parks are liminal spaces that form routes between destinations. Some parks pose potential safety hazards in terms of crime and natural hazards. The river that runs through some parks has been canalized which resulted in an increase in the velocity of water in flash floods. **Intention:** the park spaces should be rehabilitated and linked together as far as possible, to form a continuous green strip.

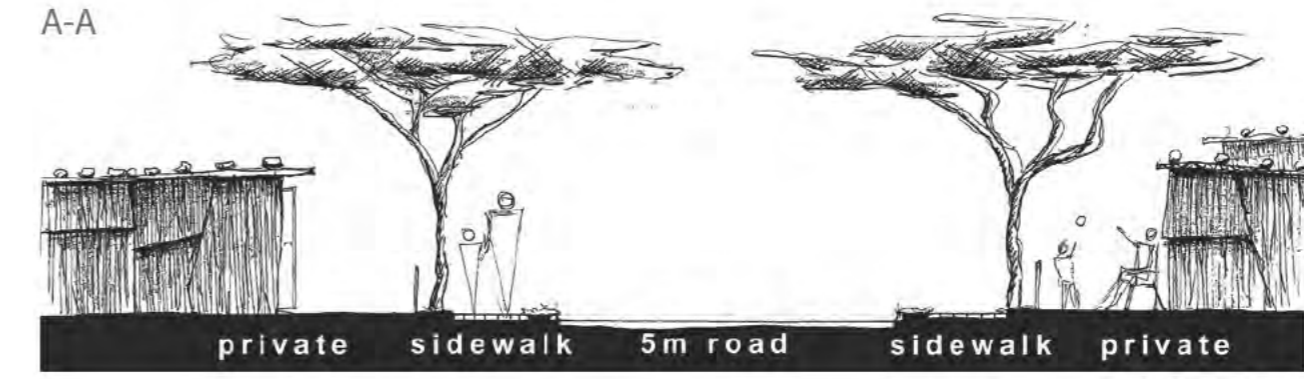


fig 62 a. Section A-A

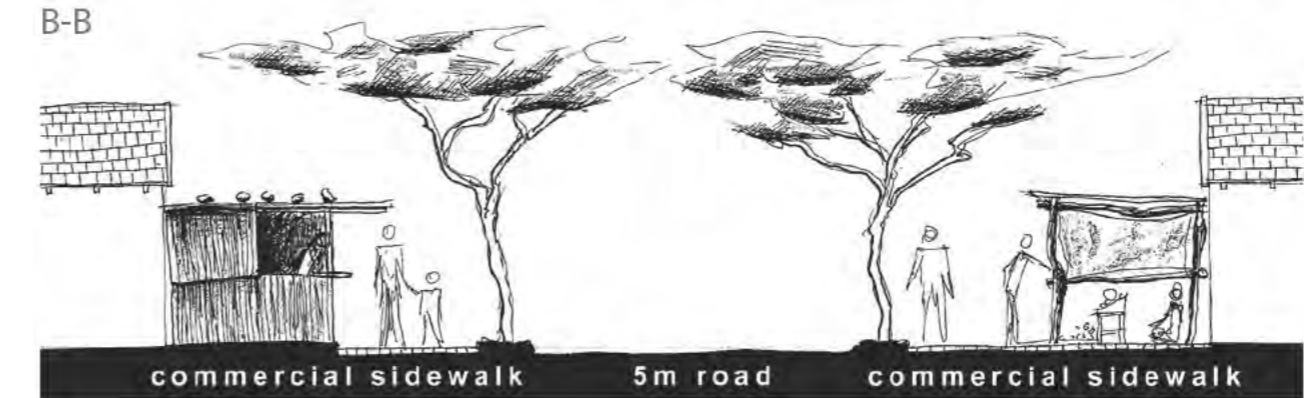


fig 62 b. Section B-B

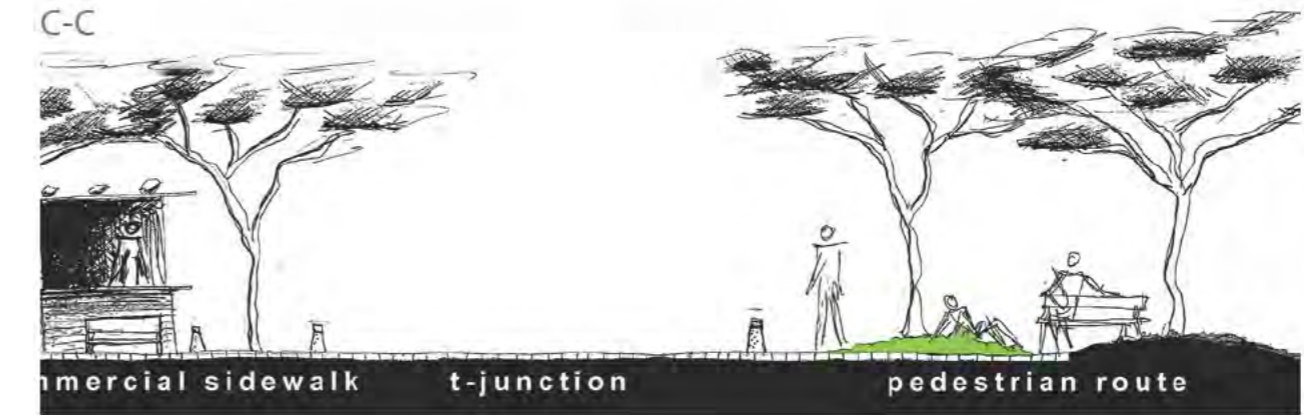
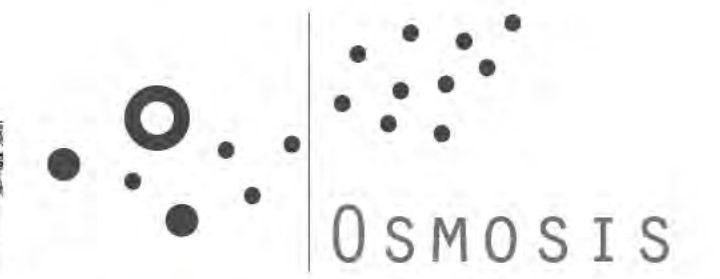


fig 62 c. Section C-C



Sections

The selected sections illustrate the proposed framework design through the new ring road and proposed pedestrian spine that links the two main community nodes. Traffic velocity is controlled by regular stops and surface change. The pedestrian spine is combined with landscape design to make a cool shaded park space where people can walk and children can play. This park space is accompanied by some semi-formal retail space that provides passive surveillance and safety. The sections also communicate the desired identity and scale.

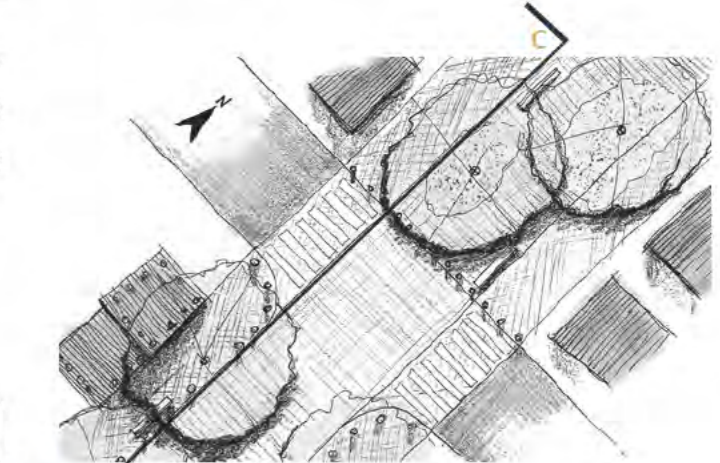


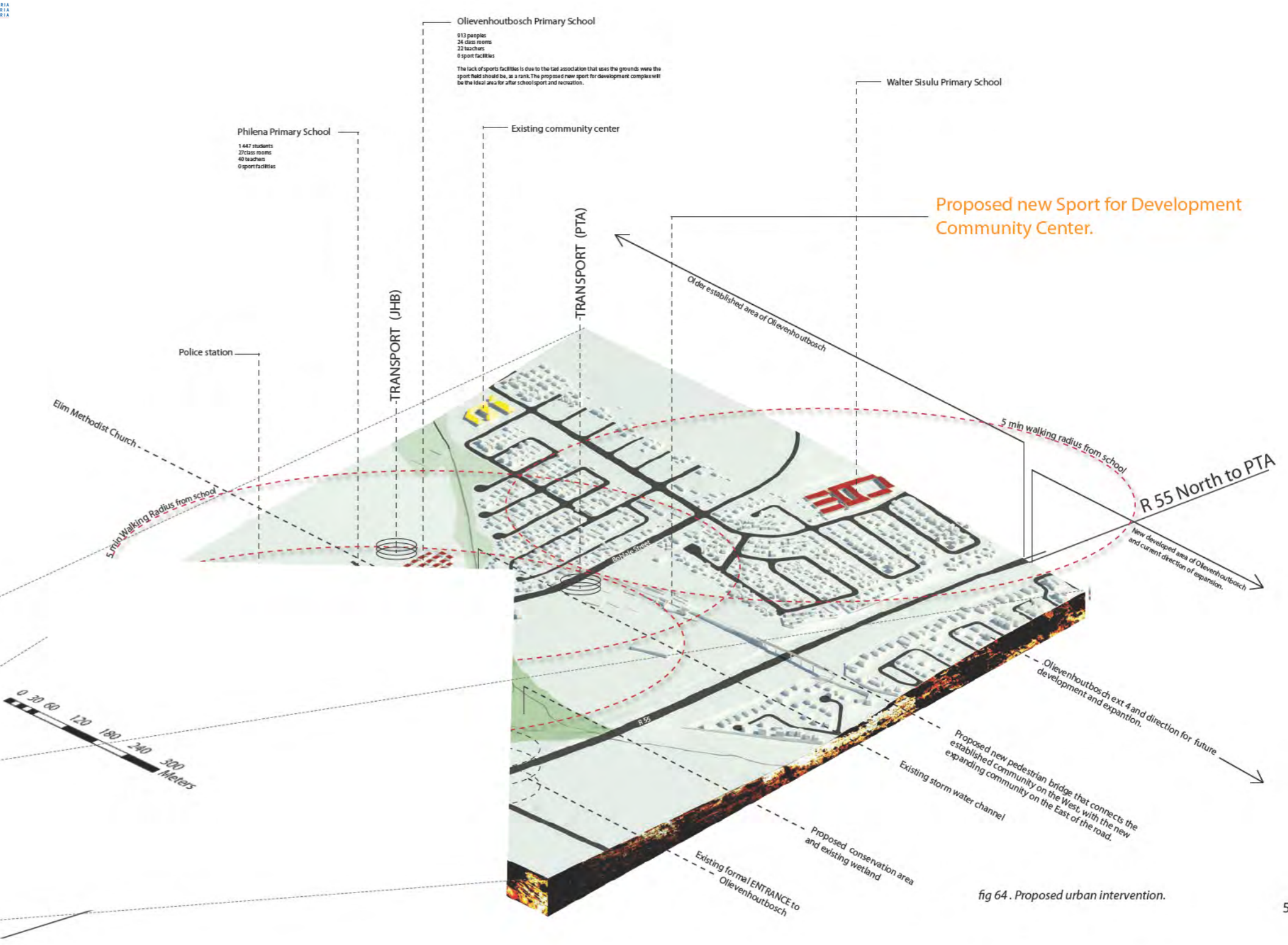
fig 62 d. Plan.



fig 63a. Proposed Land use Framework (Osmosis Group)

fig 63 b. Proposed Master Plan (Osmosis group)

fig 63 c. Proposed Spatial Framework (Osmosis Group)



Proposed new Sport for Development Community Center.

fig 64. Proposed urban intervention.



Fig 65. Broken down bus on site.

WERF[TAAL]
SITE ANALYSIS

03

SITE ANALYSIS

Definition

Site analysis is an outside-in process where the design environment is investigated to determine what language or 'taal' the design proposal wants to speak. In other words, how the design proposal will fit best.



Fig 66. Nolli of Olievenhoutbosch. Tshwane.gov.co.za.GIS 2012



The Site

The site is centrally situated on the eastern border of the existing formalised and serviced part of Olievenhoutbosch; between the two main entrances to the township and adjacent the R55 road.

R55: Opportunities

This road connects Sandton to Pretoria-West and links with the N14 that is used by the residents to travel to Centurion. This road is the primary route used by the community for travel but also the connector between more developed communities such as Sandton and Centurion. As one travels on the R55 South towards the entrance of Olievenhoutbosch, the proposed site is gradually revealed to the passer by. The site is stretched out on a hill which further emphasises views to and from the site. The location of the chosen site thus plays a vital role in the enlightenment process of the rest of society, who are often detached from the challenges and efforts that occur within townships such as Olievenhoutbosch.

R55: Problems

As the analysis process and understanding of Werftaal (the site specific conditions) developed, it became evident that the R55 road divides the existing developed community on the East from the proposed future development on the West and that the site is ideally situated for the establishment of a pedestrian bridge that will link the old and new communities of Olievenhoutbosch.

Other influences

The site is ideally situated near schools, taxi ranks and pedestrian routes and motivates pedestrian movement along the proposed green educational strip that spans across Olievenhoutbosch from West to East. The site is currently a greenfield site but subtly communicates certain characteristics and traits that can only be perceived on the site.

SENSORY ANALYSIS AND ORIENTATION_

Panoramic view toward site from R 55

A sensory analysis is of crucial importance, as it creates an understanding of visual impact, views to and from the site, traffic noise, general weather conditions, available materials and movement patterns.



fig 68. Panoramic view towards site from R55.

SENSORY ANALYSIS AND ORIENTATION_

Panoramic View From Site

The famous American writer and poet, Gertrude Stein, understood that a view offers much more than an elevated visual connection to the surrounds.

Views provide the building with opportunities to conceal and reveal itself at certain strategic points, thus creating an architectural promenade¹.

¹ Architectural promenade refers to the progression in spatial experiences. It reveals and conceals certain elements and spatial qualities to emphasise their importance and inherent qualities.

Midrand

Open Air Zionist Church

R55 Bridge

Entrance to Olievenhoutbosch

Proposed Educational
Conservation Area And
Existing Wetland

Olievenhoutbosch
Primary School



fig 69. Panoramic view from site.

'I LIKE A VIEW BUT LIKE TO SIT WITH MY BACK TOWARDS IT.'
(STEIN 1998: 127)

TOPOGRAPHY + ORIENTATION_

The topographic characteristics of the site is a major design generator that will inform orientation, response to views, internal climate of the built structure, pedestrian movement, access and the protection of areas of natural value.

Entrance to Olievenhoutbosch

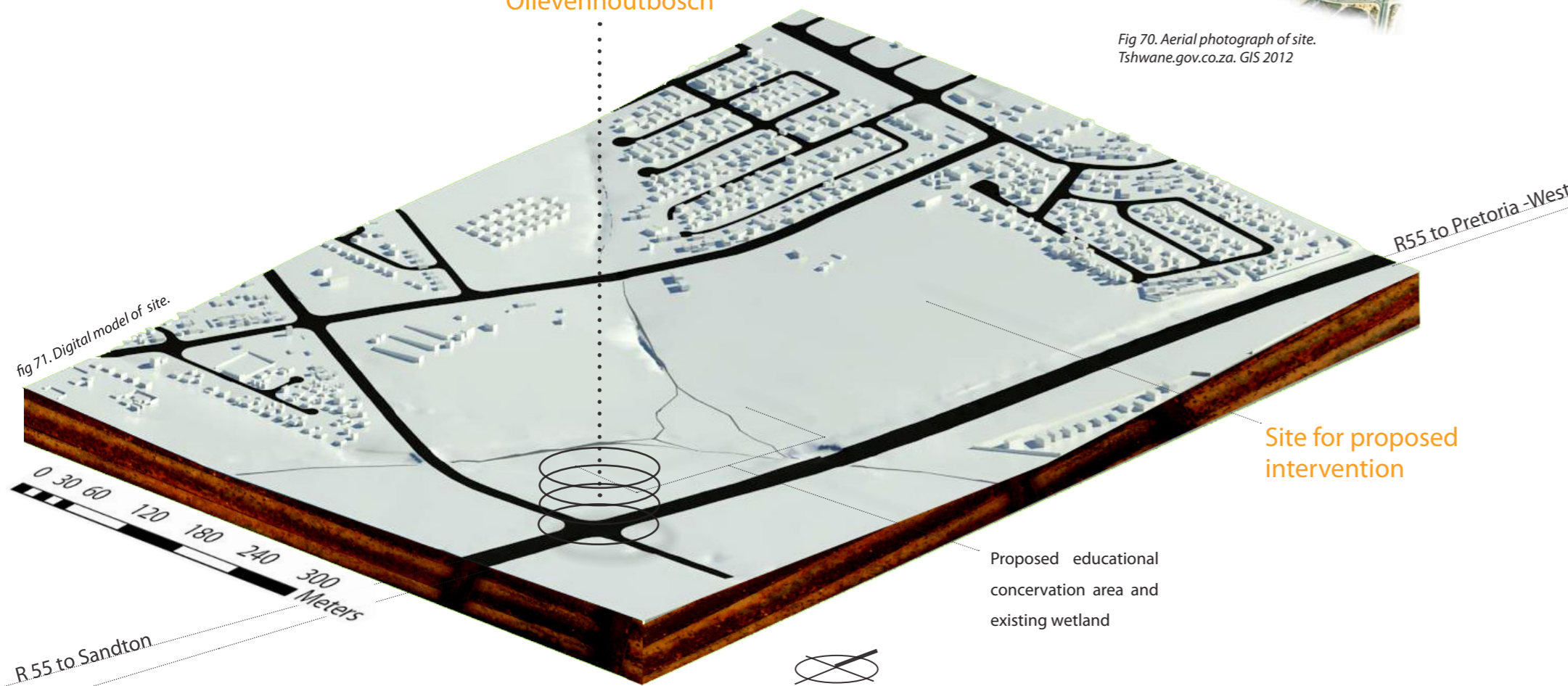


fig 71. Digital model of site.



Fig 70. Aerial photograph of site. Tshwane.gov.co.za. GIS 2012

TRAFFIC FLOW_

Vehicular Access To Site

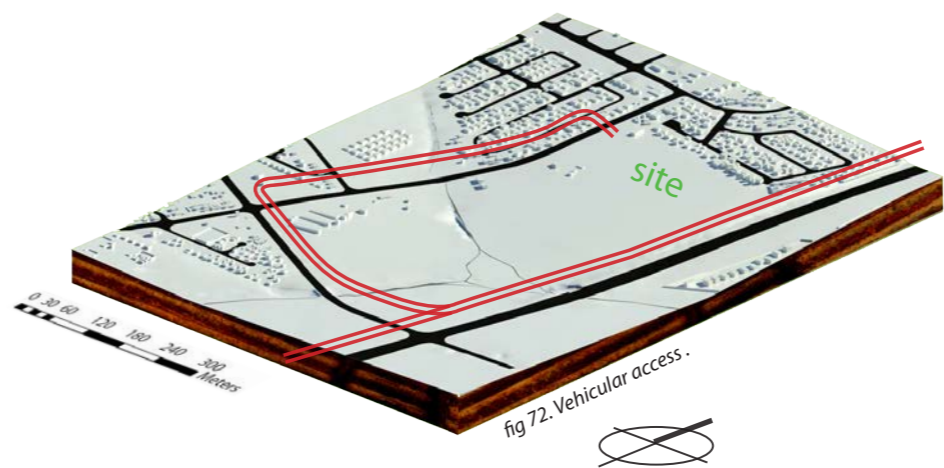


fig 72. Vehicular access.

Taxi Ranks And Pedestrian Walkways

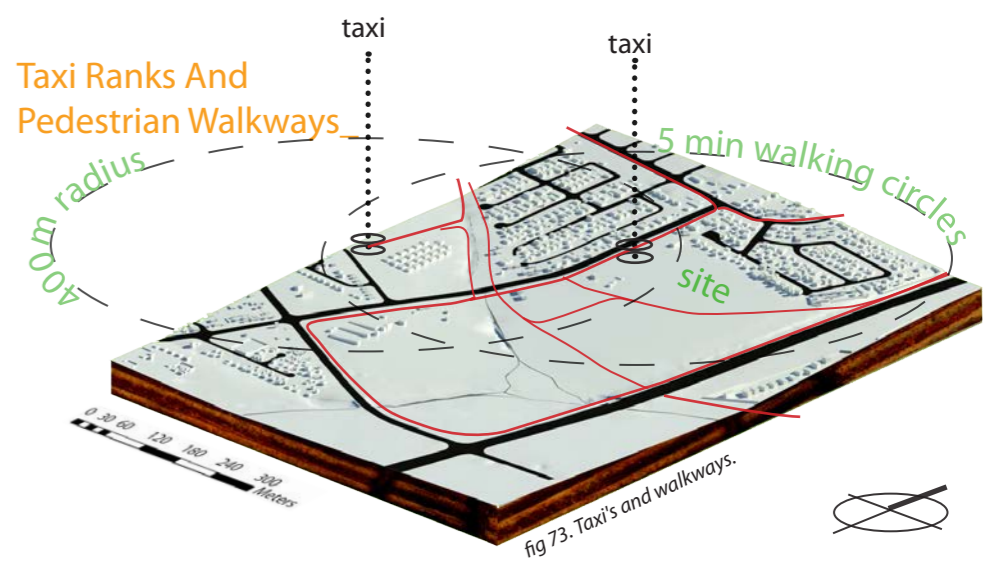


fig 73. Taxi's and walkways.

LANDSCAPE_

Hydrology and Primary Groundcover

The grass plays a vital role in the prevention of erosion on the slopes of the site. The presence of water on site should be optimised for controlled irrigation of sport fields and gardens but currently suffer under severe pollution.

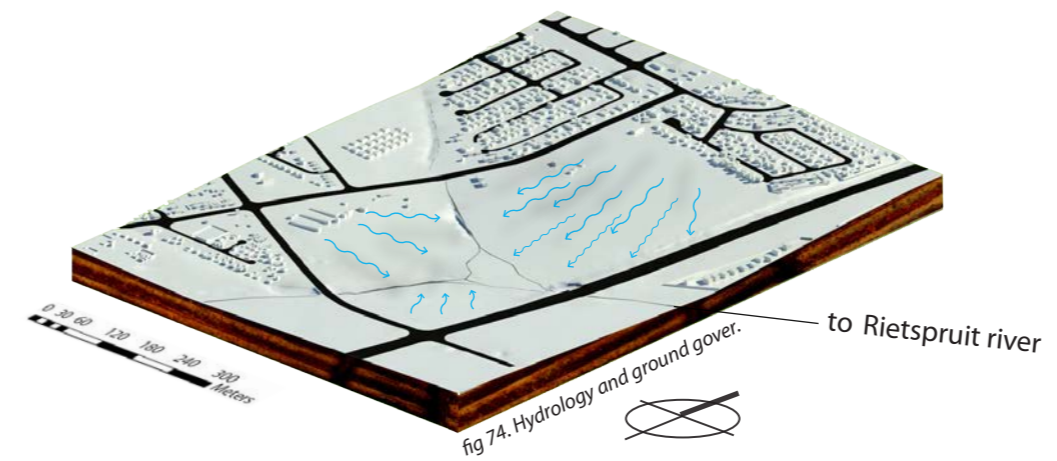


fig 74. Hydrology and ground gover. to Rietspruit river



fig 75. Existing ground cover



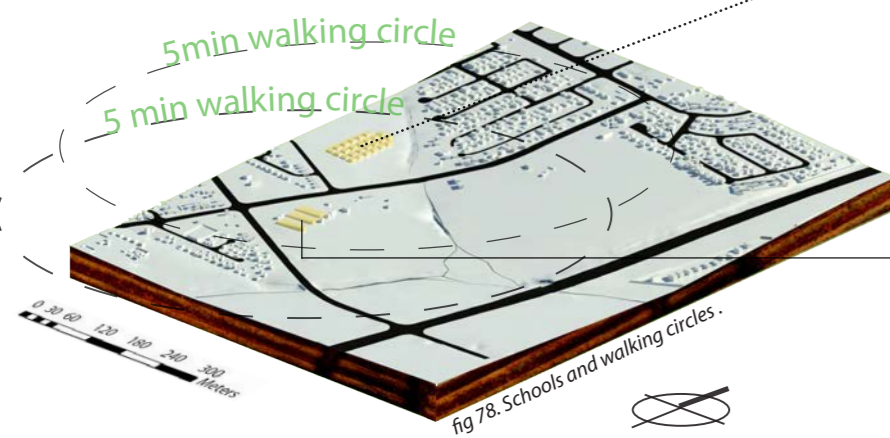
fig 76. Water pollution



fig 77. River

LOCAL SCHOOLS_

Both Philena Primary School and Olievenhoutbosch Primary School have no formal sport facilities or designated play areas. The chosen site for intervention is within walking distance of both these schools.



Olievenhoutbosch Primary

Number of students: 913

Classes: 22

Teachers: 24

(Interview by Jenni Bremner and Johanna

Theunissen with Principal Shikwambane. 7/6/2011)



fig 80. Olievenhoutbosch Primary school

Philena Primary School

Number of students: 1,447

Classes: 27

Teachers: 40

(Interview by Jenni Bremner and Johanna

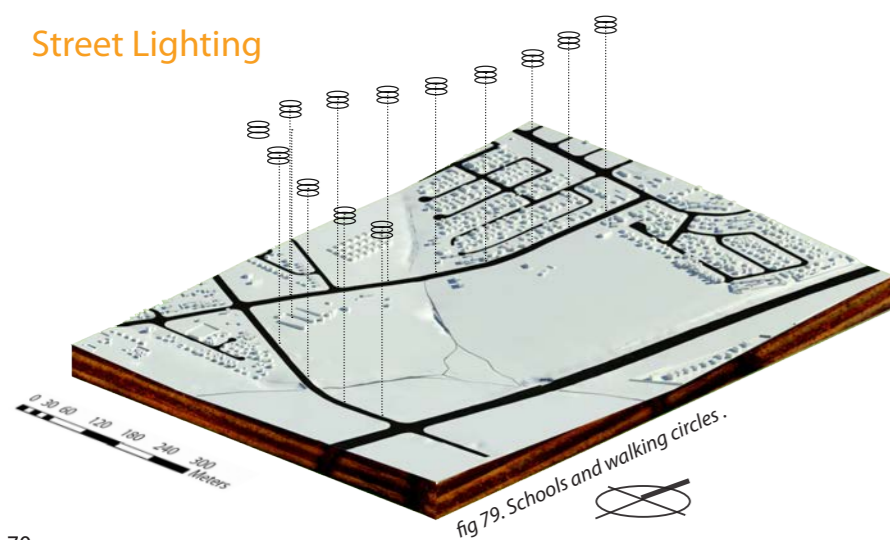
Theunissen with Principal Shikwambane. 7/6/2011)



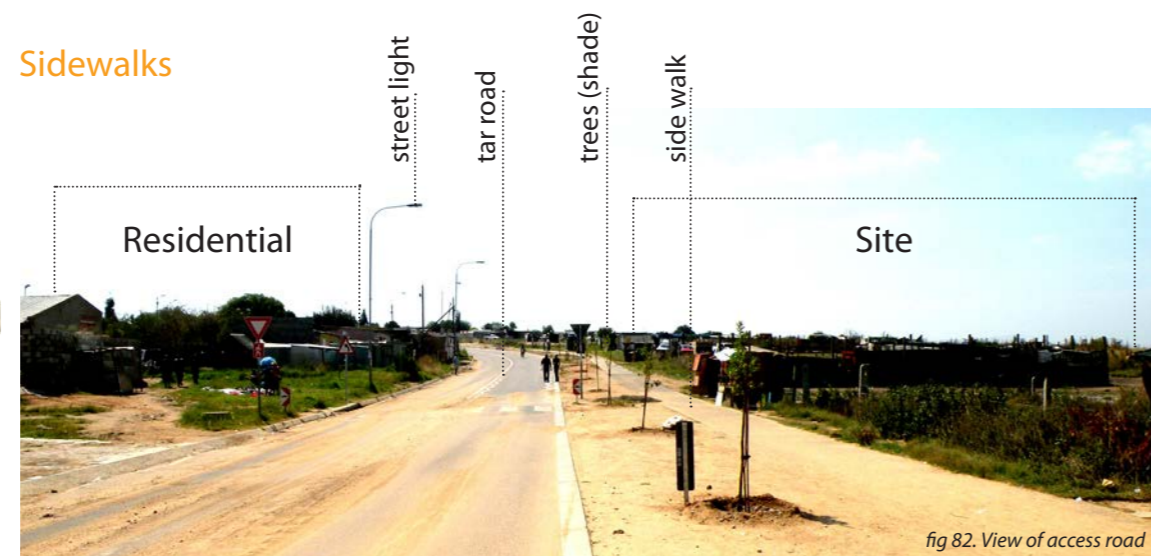
fig 81. Philena Primary School

SECURITY + SAFETY_

Street Lighting



Sidewalks



CLIMATE_

Macro Climate - (Irene, Centurion. Aproximately 13 km from Olievenhoutbosch)

Year	T	TM	Tm	PP	V	RA	SN	TS	FG	TN	GR
1991	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	-	-	-
1998	-	-	-	-	-	54	0	51	6	0	4
1999	-	-	-	-	-	-	-	-	-	-	-
2000	16.4	23.5	10.4	-	11.6	90	1	52	18	0	2
2001	16.6	24.2	10.4	646.92	11.3	75	1	39	21	0	3
2002	-	-	-	-	-	-	-	-	-	-	-
2003	18.3	26.3	11.6	423.17	12.0	45	0	35	3	0	3
2004	17.1	24.8	11.1	981.19	11.0	56	1	55	25	0	0
2005	-	-	-	-	-	-	-	-	-	-	-
2006	17.1	25.0	11.2	-	11.1	78	0	52	7	0	1
2007	17.7	25.8	11.1	607.02	11.5	47	0	37	6	0	0
2008	17.7	25.5	11.6	-	10.4	67	0	54	0	0	0
2009	17.0	24.6	11.2	-	11.1	70	0	57	6	0	0
2010	-	-	-	-	-	66	0	53	10	1	0
2011	16.9	24.8	11.0	-	10.3	90	1	71	12	0	1
2012	-	-	-	-	-	-	-	-	-	-	-

- T : Annual average temperature (°C)
- TM : Annual average maximum temperature (°C)
- Tm : Annual average minimum temperature (°C)
- PP : Total annual precipitation of rain and / or snow (mm)
- V : Annual average wind speed (Km/h)
- RA : Total days with rain during the year
- SN : Total days with snow during the year
- TS : Total days with thunderstorm during the year
- FG : Total days with fog during the year
- TN : Total days with tornado or funnel cloud during the year
- GR : Total days with hail during the year

fig 83. Climate. (http://www.tutiempo.net/en/Climate/Pretoria_Irene/682630/)htm

EXISTING STRUCTURES_



fig 84. Shack



fig 85. Concrete Remains



fig 86. Taxi Rank



fig 87. Church.

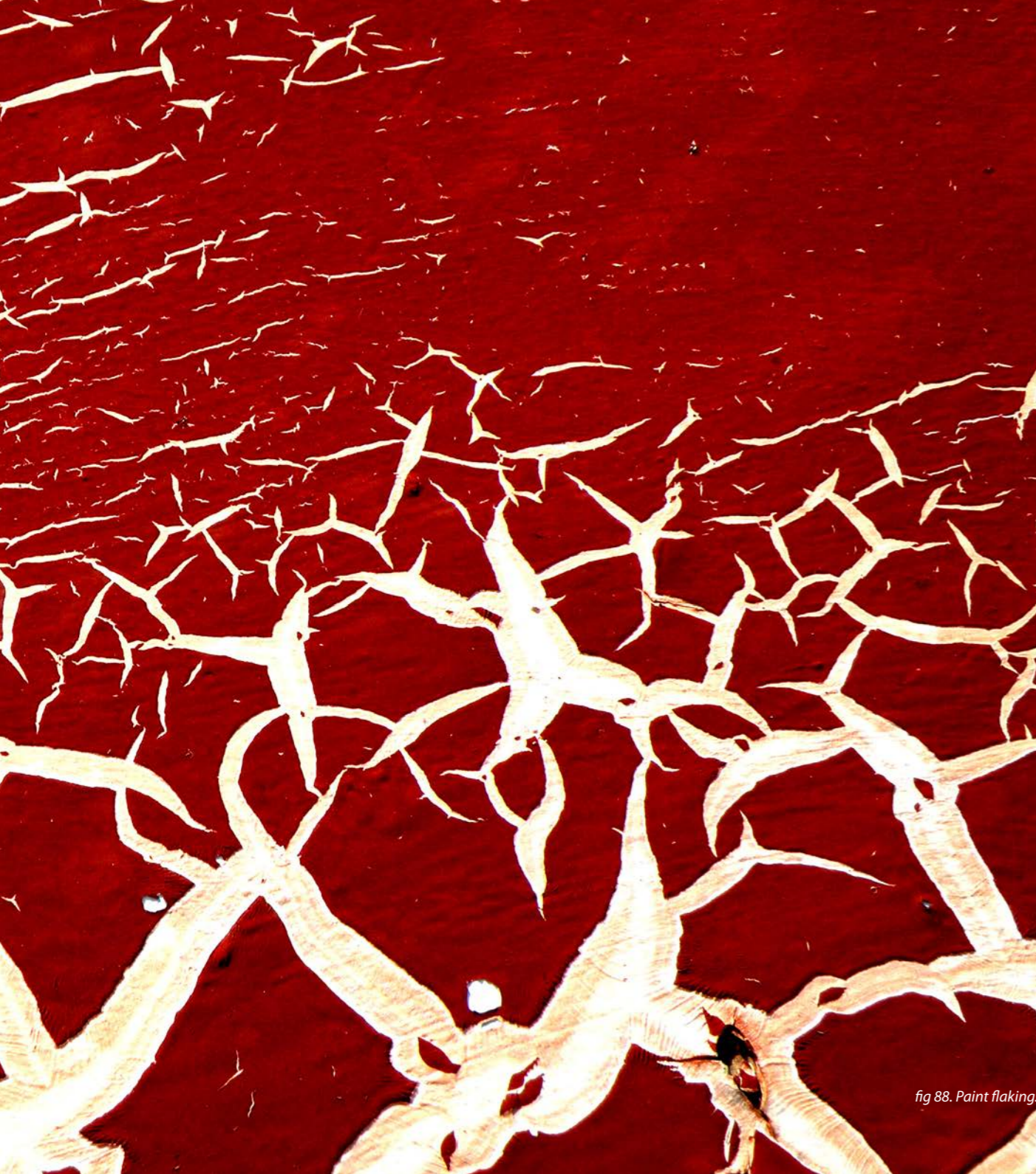


fig 88. Paint flaking.

WERF [T A A L] _

Exploring Found Architecture

In the term 'Lyf[Taal]', 'lyf' refers to body and 'taal' refers to language thus- the tangible and intangible. If we overlay this concept on the site itself, the author states that 'lyf' refers to the physical characteristics of the site that are easy to measure and document. This includes topography, micro climate, street lights, orientation, plant species, movement, access, current structures, zoning, adjacent buildings and programs as analysed above.

The 'taal' refers to language. It is the intangible subtle monologue that the site expresses within elements that can only be experienced on site. It is the generative potential of elements on site.

Due to the greenfield status of the selected site and the minimal permanent built structure surrounding it, the 'Werf[Taal]' chapter identifies an unseen level of design generators that inspires the development of a FOUND ARCHITECTURE.

Forgotten Movement

- time
- decay
- heat
- colour
- feel

Captured Memory

- process
- ritual
- identity

Skin

- projection
- marriage
- joining
- lines
- capture

Movement

- texture
- noise
- layers

Reveal

- expose
- erode
- robust

Earth

- grains

Texture



fig 89 a_. Rusted wheel.

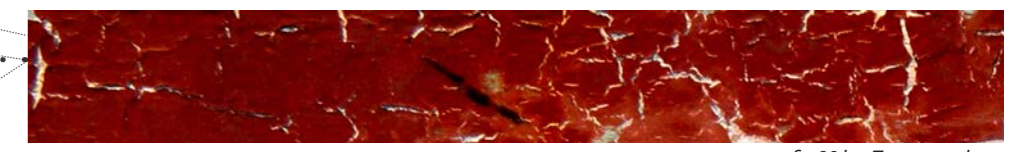


fig 89 b_. Texture on bus.



fig 89 c_. Sand.

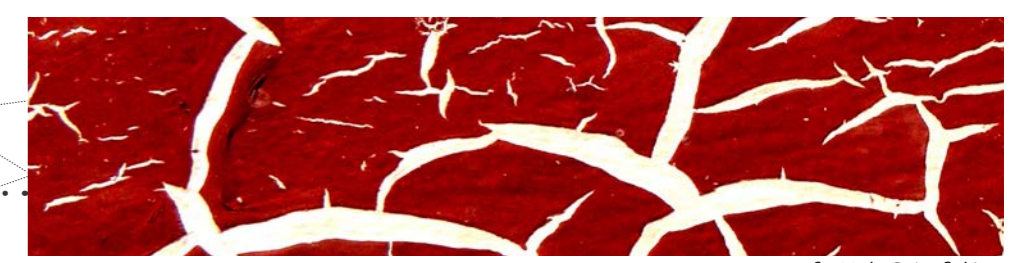


fig 89 d_. Paint flaking.

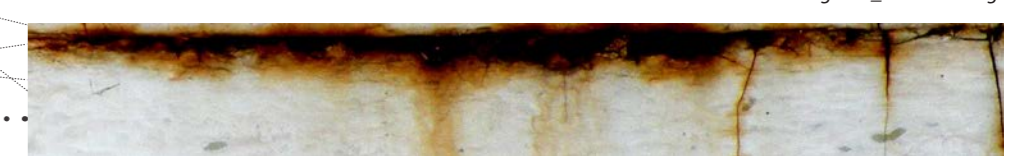


fig 89 e_. Rust.



fig 89 f_. Grass



fig 89 g_. Rust and paint.

WERFTAAL__



fig 90. Beauty in the imperfection .

Beauty In The Imperfection

What is striking about the existing informal taxi rank is the slanting manner in which the sign posts protrude out of the landscape. The sign posts have been influenced by the presence of people on the site, the taxis and their movement patterns. This pattern of people is what gives the sign posts their unique aesthetic quality. The author is intrigued by this unique quality of human influence and how it developed a form of beauty in the imperfection.

Wayfinding

The existing sign posts on site communicate the importance of wayfinding. Wayfinding refers to the ability of the user to orientate themselves in a new or unfamiliar environment.

Wayfinding becomes a very important design generator and must be incorporated in the building design.



fig 94. Wayfinding.



fig 91. Routes .

The Site as Liminal Space

The site is currently used as a transitional space. People walk through the site to shorten their walk to and over the R55 road. The taxi rank is also a space where transition takes place between modes of transport.

The integrity of the site as liminal space will enable the architectural intervention to become a place where people walk through and not to.

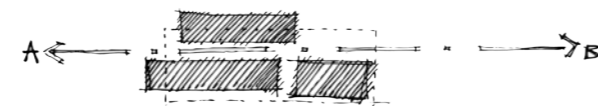


fig 95. Site as liminal space.



fig 92. Shack on site.

Found Architecture

Throughout the community of Olievenhoutbosch shacks and shanties are constructed with found materials. This direct use of found materials is what inspires the critical evaluation of a site language (werftaal) to reinterpret architectural generators that are found on site and recreate a FOUND ARCHITECTURE.



fig 96. Skins and screens.

Skins and Screens

Skins and screens are wrapped around internal skeletons to give the existing structures on site their physical form. Skins and screens are used to protect the structure and inhabitants from harsh environmental elements and often create a collage of textures and colour that give the facade its aesthetic appeal.

Screens are often able to move, twist and change to manipulate the quality of space.



fig 93. Shack on site.

Conclusion

The 'Werf[Taal]' chapter is an attempt by the author to understand the language of the site and interpret it to create a found architecture.

This will produce a design that is indigenous to the community and the natural environment. It allows local labour to contribute to the construction process, creates a sense of ownership and effectively prolongs the lifespan of the building.

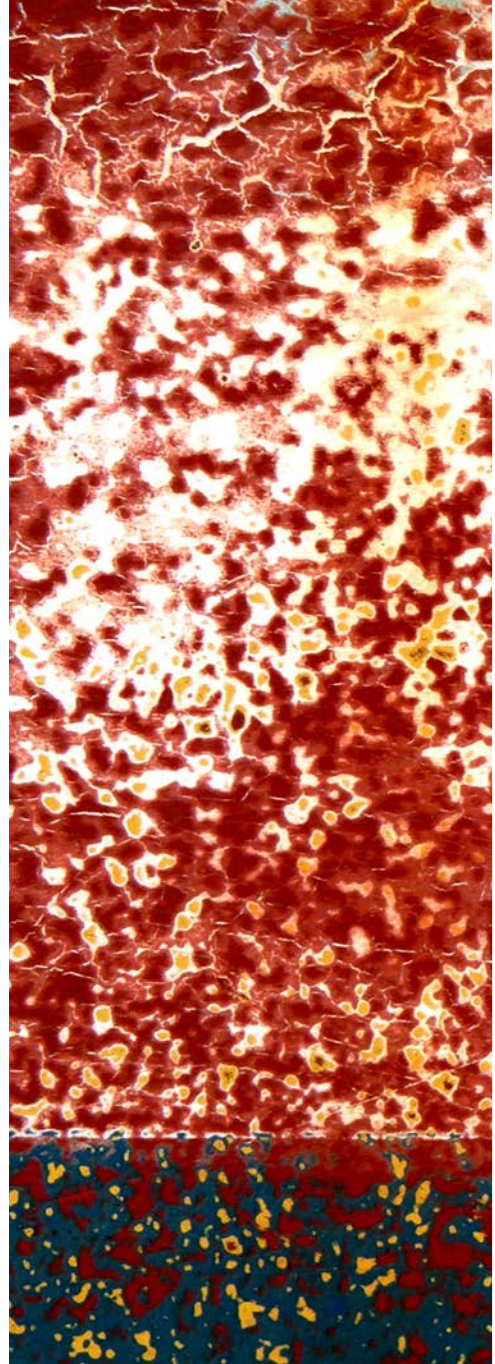


fig 97 a. Old bus surface.



fig 97 b. Cracking paint.



fig 97 c. Rust stain.



fig 97 d. Corroded steel.



fig 97 e. Grass.



fig 97 f. Footprint in the sand.

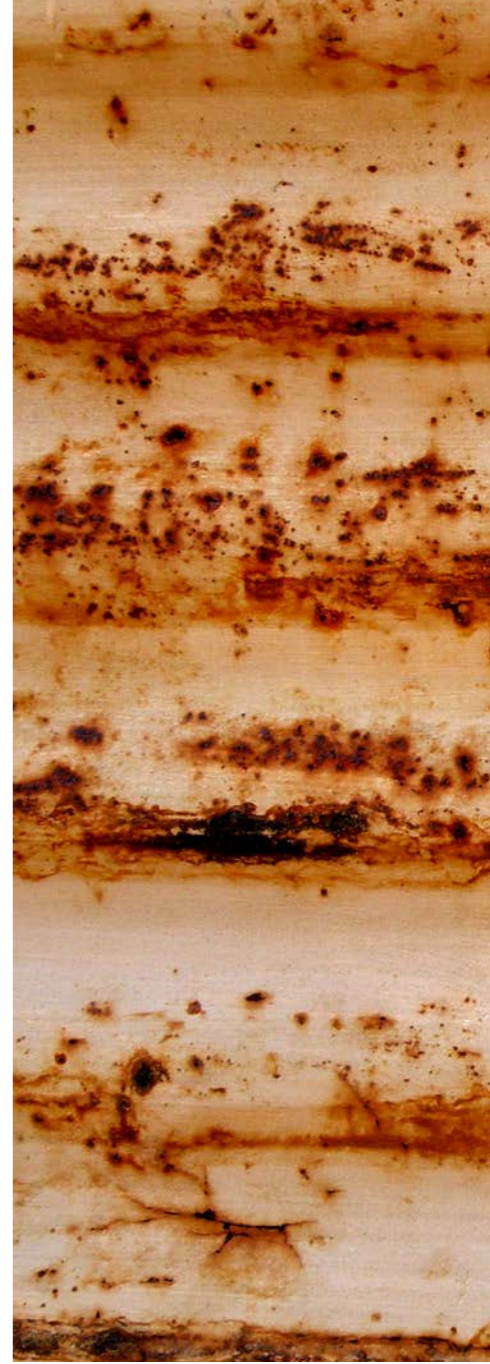


fig 97 g. Sheet metal.



fig 97 h. Framed view of child dancing.

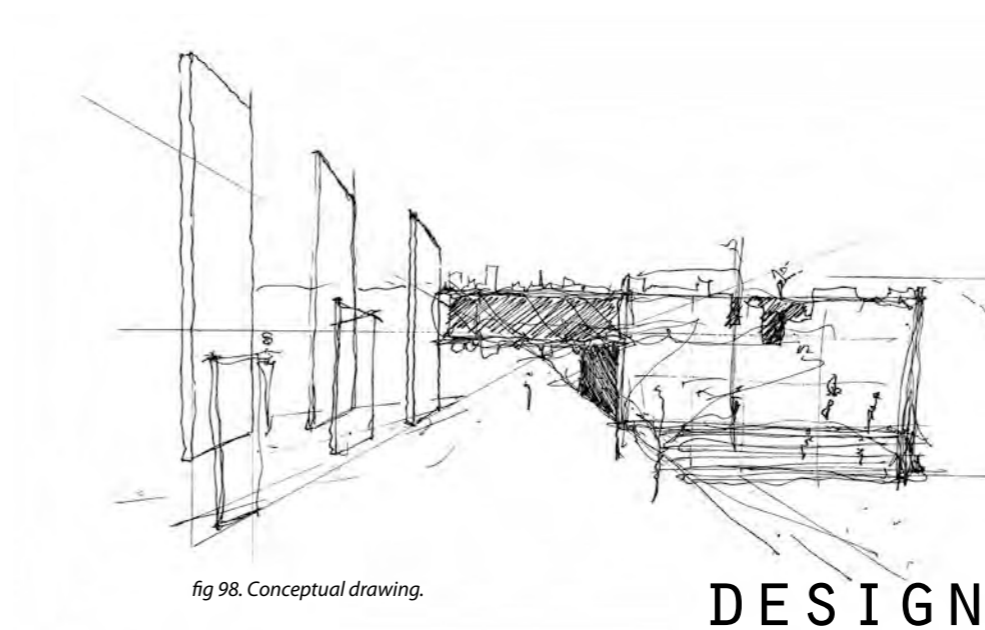


fig 98. Conceptual drawing.

DESIGN DEVELOPMENT

04

INTRODUCTION__

THE DESIGN DEVELOPMENT CHAPTER IN A NONLINEAR PROCESS IN WHICH THE AUTHOR ATTEMPTS TO FIND THE APPROPRIATE AND CONTEXTUAL ARCHITECTURAL RESPONSE FOR THE NEW SPORT FOR DEVELOPMENT COMMUNITY CENTRE IN OLIEVENHOUTBOSCH. THIS CHAPTER ILLUSTRATES THE PROCESS OF DISCOVERING CONSTRAINTS AND EXPLORING OPPORTUNITIES WITH REGARD TO ARCHITECTURAL FORM AND SPACE AND REFINES THE PRODUCT TO MEDIATE BETWEEN ALL THE DESIGN INFORMANTS. THESE INFORMANTS ARE REFERRED TO AS **HYPERTERMS**¹ AND ARE DISCUSSED LATER IN THIS CHAPTER.

¹A hyperterm is described as an encompassing idea or umbrella concept.

THE PARTI__

The Parti diagrams illustrate the tectonic relationship of the building, the promenade and the sport fields. It further illustrates the relationship to views and the basic spacial understanding in every scenario.

Note that the promenade that links the taxi rank with the new pedestrian bridge is a constant throughout all the phases of development.

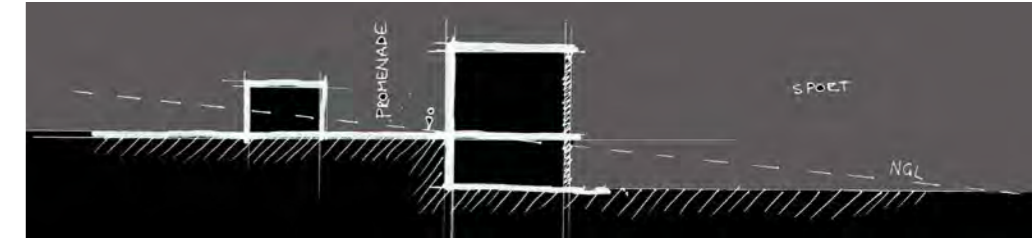


fig 99. Design developement sectional parti 1.

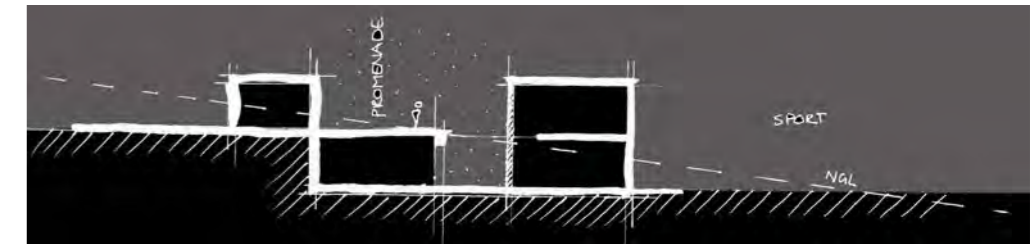


fig 100. Design developement sectional parti 2.



fig 101. Design developement sectional parti 3.

THE CONCEPT MODEL__

MARCH 2012- JUNE 2012

The base: The base of the model is a found piece of timber from site. A witness to the history of Olievenhoutbosch.

Architecture: creating space of substance and meaning.

Sport : a language that transcends cultural barriers and bring the lives of people closer together.

The brazing rods under tension represent the tension amongst different cultural groups.

The cables represent the lives of people and the fourth dimension - time.

Cultural and physical barriers

The establishment of structure as a continuing process.

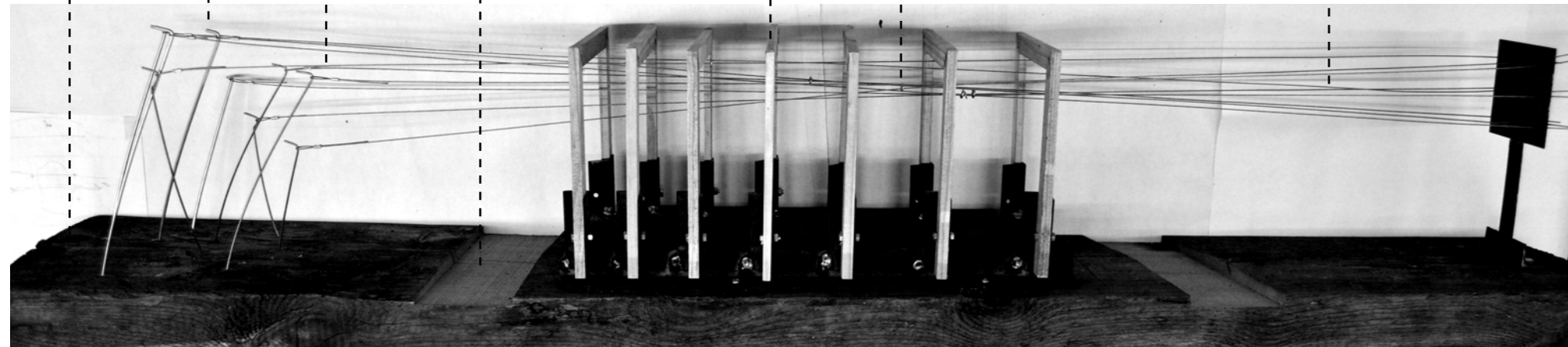


fig. 102 a. Concept model.

The concept model personifies the real world problem of division and the amalgamation of the potential within architecture and sport. The cables that protrude through the steel plate, as indicated in *fig 102a*, is indicative of a continuing process, a process where chaos is transformed into structure on a daily basis.

Physically, the model illustrates the linear nature of the proposed intervention and represents a material quality that is indigenous to local understanding.



fig. 102 b. Concept model.

MARCH 2012- JUNE 2012_

FIRST CONCEPTUAL DRAWINGS

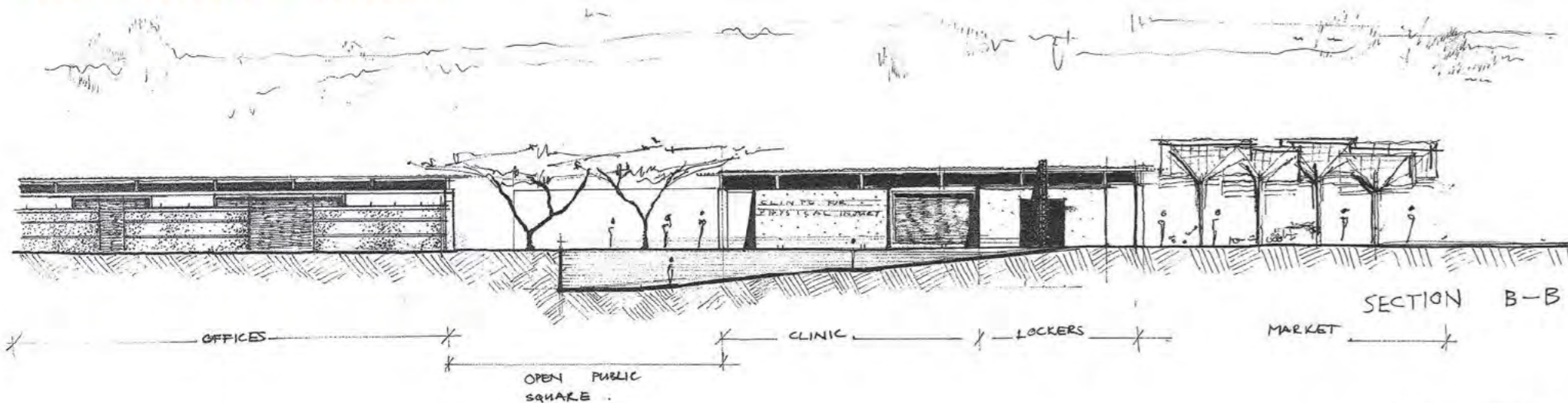


fig 103. Conceptual section BB.

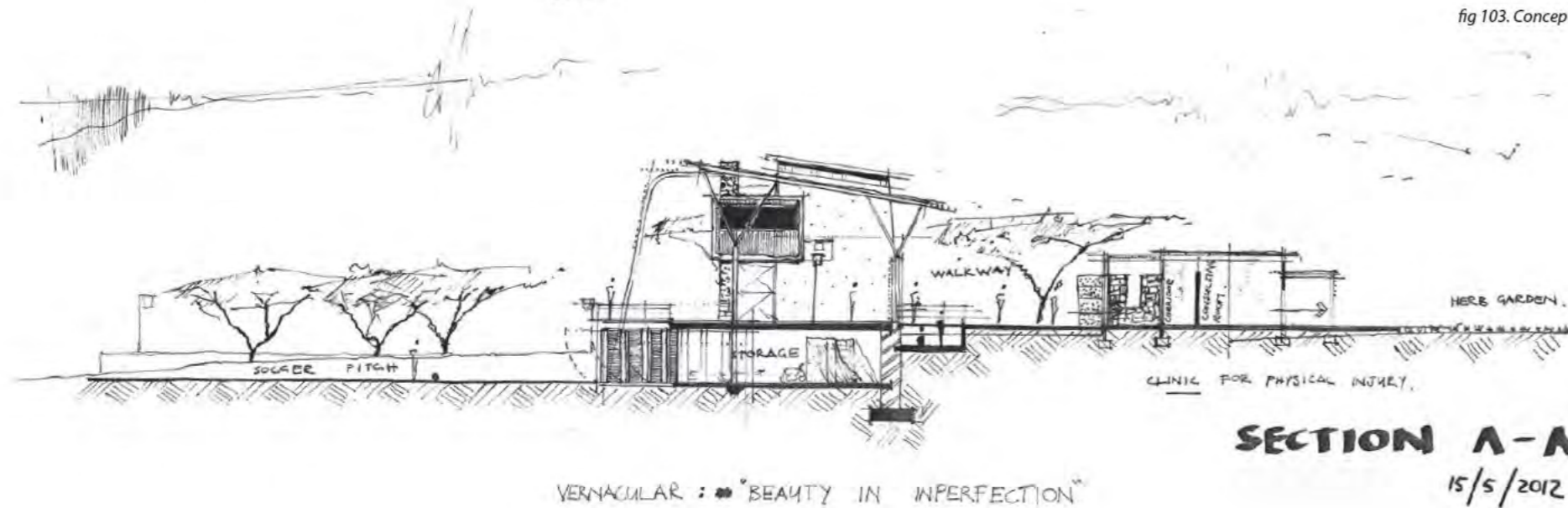


fig 104. Conceptual section AA.

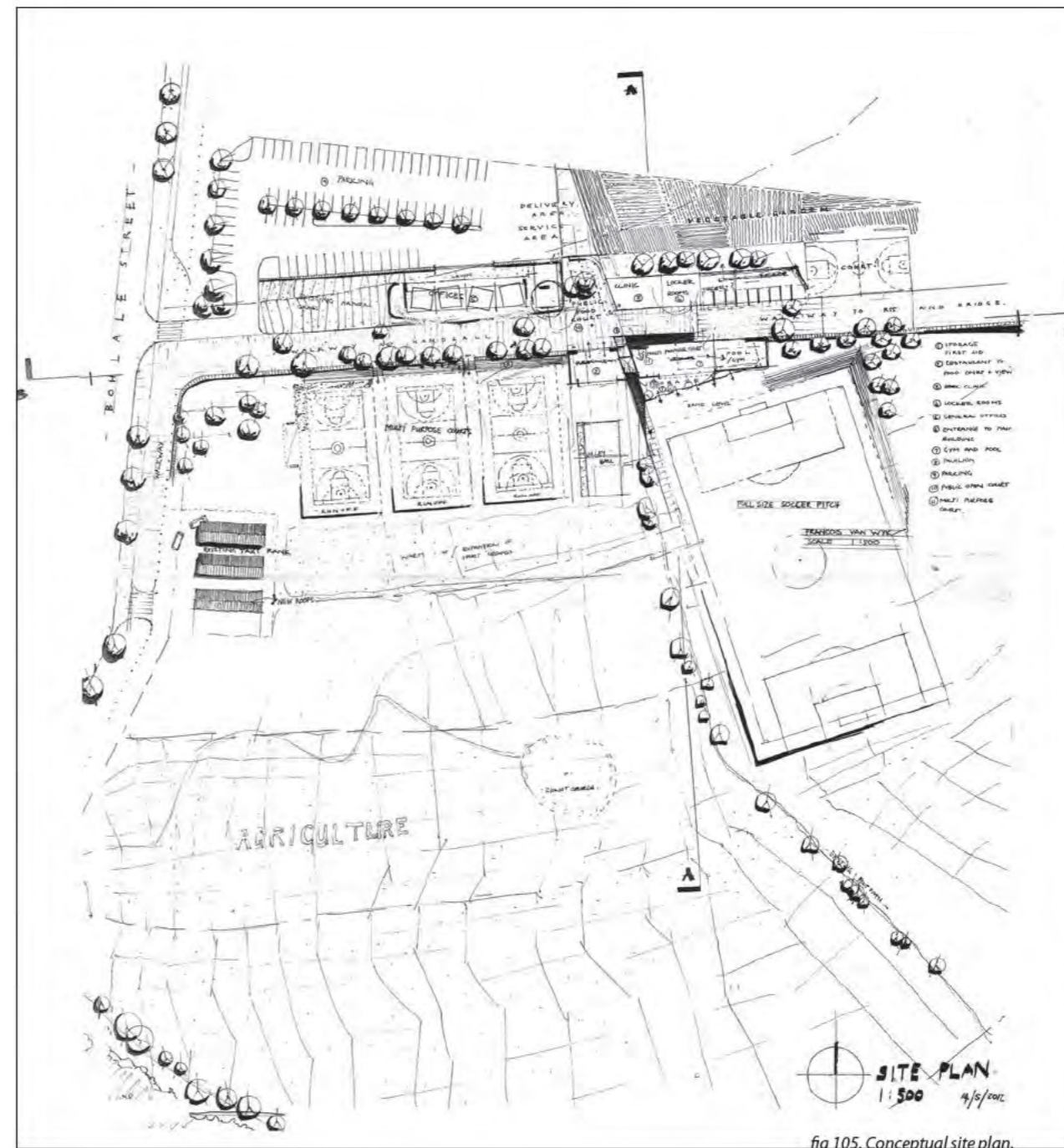


fig 105. Conceptual site plan.

First Conceptual Drawings

The first conceptual drawings came into being as a representation of the authors intuitive response toward a critically regional and vernacular architecture within the immediate context.

Doreen Greig¹ (1971:17) identified three distinct vernacular periods in the development of architecture in South Africa.

The first was the Dutch influence, later referred to as a Cape Dutch vernacular. Greig (1971:18) suggests that it synergised European, colonial and Eastern traditions with the local context.

The second vernacular extended the first through a Georgian influence brought to the country by the 1820 settlers where imported classical features from pattern books were adapted by craftsman through the use of local materials.

The third period is unconnected because the vernacular occurred in Natal where a red brick influence adapted the British Victorian style.

The author is of the opinion that the shack fits the criteria to be acknowledged as another form of vernacular architecture. The shack is built with local labour and knowledge, locally available materials and as immediate response toward climatic and socioeconomic circumstance.

Finally, within the rusted sheet metal and cardboard windows lies a underlying beauty in the imperfection which is explored further as the design development process continues.

¹ Doreen. E. Greig was the first woman president-in-chief of the Institute of Architects. She is best known for her writings: *Herbert Baker in South Africa* and *A Guide to Architecture in South Africa*

JUNE 2012- JULY 2012_

STREET ARCHITECTURE

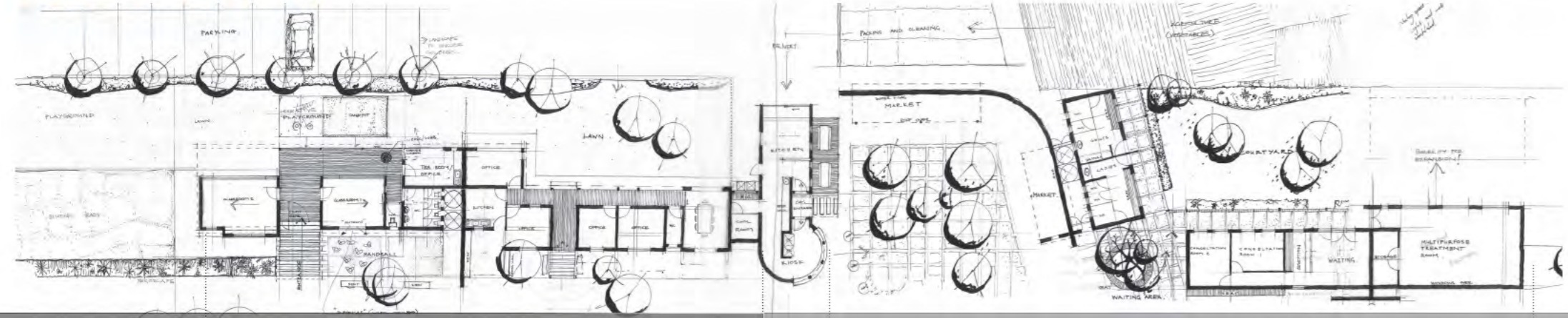


fig106. Conceptual model of promenade to bridge.

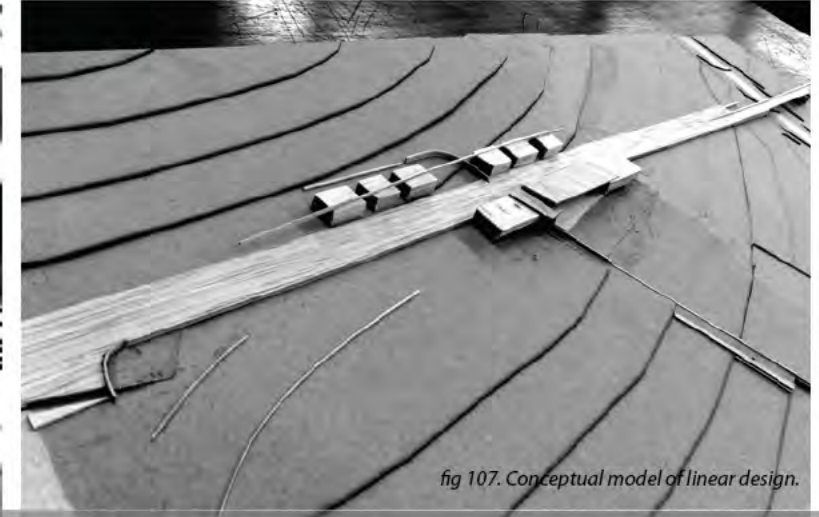


fig 107. Conceptual model of linear design.

<<<Promenade to Taxi Rank

Promenade to Bridge>>>

The Promenade

The promenade was the first design strategy used to give the project a larger range and impact on urban scale. The promenade is the conglomeration of existing routes that run through the site between the old and new parts of the community of Olievenhoutbosch over the notorious R55 road. The promenade extends into a new pedestrian bridge that will prevent the regular occurrence of school children being knocked down by high speed and high velocity traffic when they attempt to cross the R55.

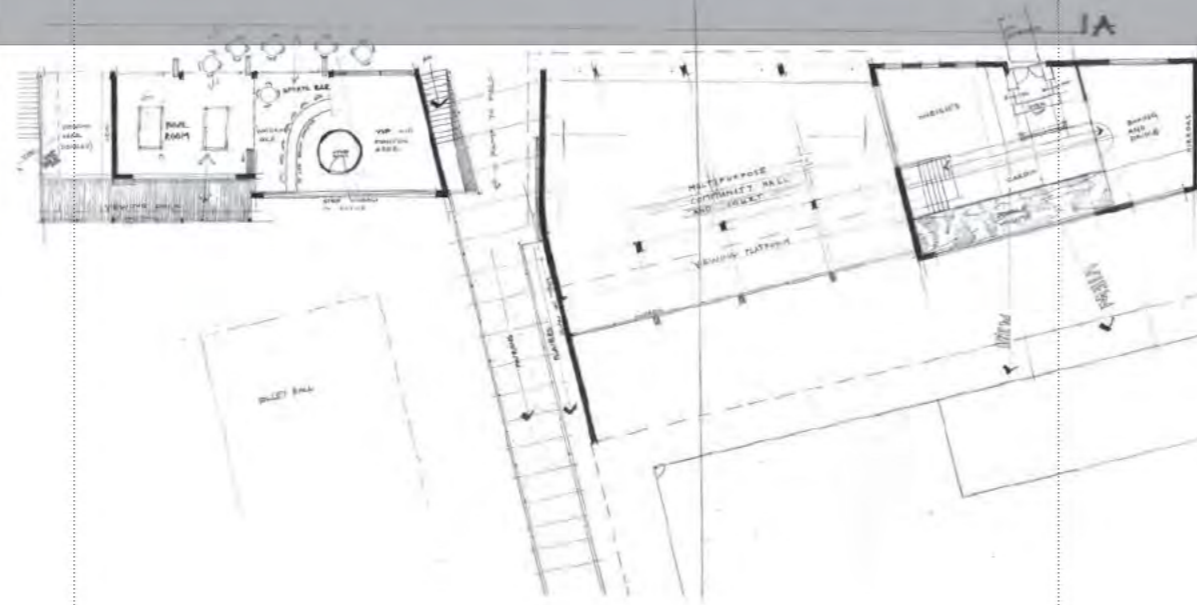


fig 108. Ground Floor Plan.

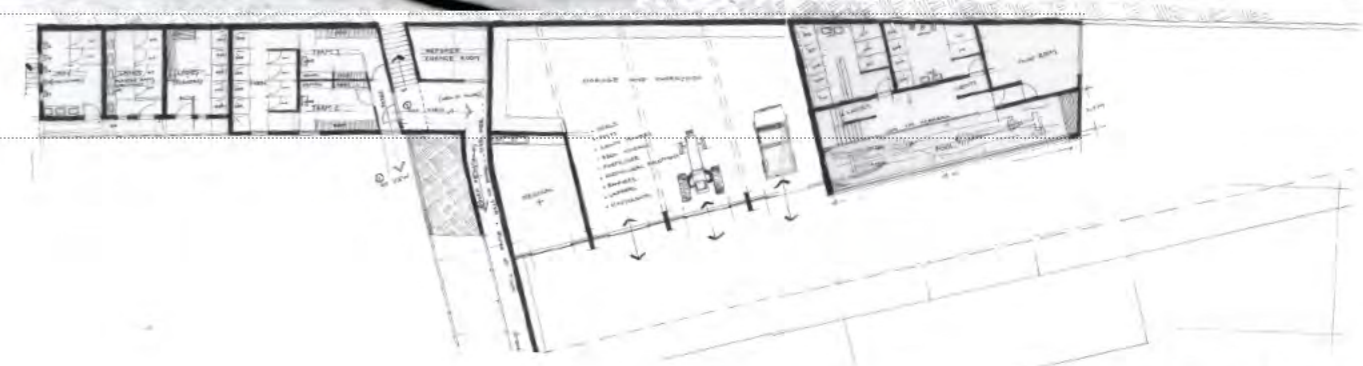


fig 109. Basement plan.

"IT IS REALLY A FOOLISH FAD, THIS CRAZE FOR ISOLATING BUILDINGS. . . ." (CAMILLO SITTE, CITY PLANNING ACCORDING TO ARTISTIC PRINCIPLES, NEW YORK: RANDOM HOUSE, 1965, P. 25 - 31 .)

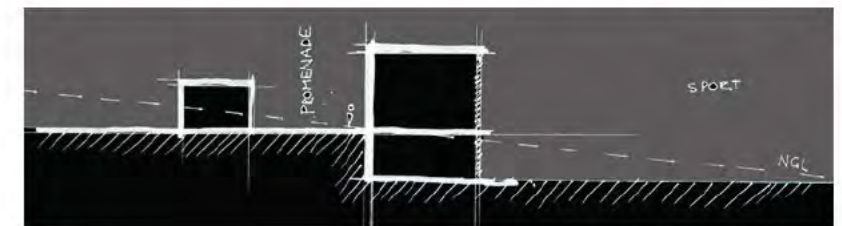


fig 110. Sectional part.

JUNE 2012- JULY 2012_

STREET ARCHITECTURE

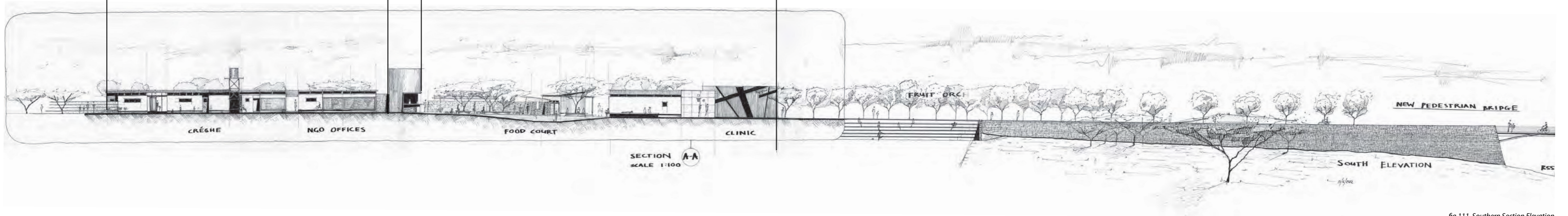


fig 111. Southern Section Elevation.

Comments

The critique on this project was primarily aimed around the preconceived idea with regard to township architecture and the fact that spaces created was of residential scale and not of civic scale. This led to the exploration of a new approach where a civic scale was to be achieved while simultaneously integrating the building in the landscape.

The Street Architecture

The street architecture design came about as a response toward scale, the proposed new promenade that extends toward the new pedestrian bridge, as well as the idea that a community centre should be a series of multifunctional spaces that interact with one another and thus gives the promenade a more vibrant nature. In this way, the entrances of the building creates nodes which

enforces a zigzag pattern of movement through the promenade, rather than the expected linear movement.

The Linear Community

In western cultures, the general understanding of social interactive space usually correlates to a destination. In other words, people of certain social abstractions meet at a certain destination to converge in conversation and social interaction. This gives rise to concepts such as 'coffee cultures', street cafe's and boutiques that thrive in settings inhabited by western cultures.

Historically the African view of social interactive space was also connected to the concept of destination. People would travel long distances to meet under Acacia trees to tell stories and share ideas. However, the argument raised by the author is that a stronger bond was formed between the community members that walked together than with the people they met under the tree.

The theory is further emphasised by the real world situation that most people in the township depend on public transport or walking to go to work. The potential of the liminal space should be harnessed as opportunity for community building and peace building within Olievenhoutbosch.

JULY 2012_

[INHABITING THE WALL AND IRREGULAR COLUMNS]



fig 112. Photo of Model.

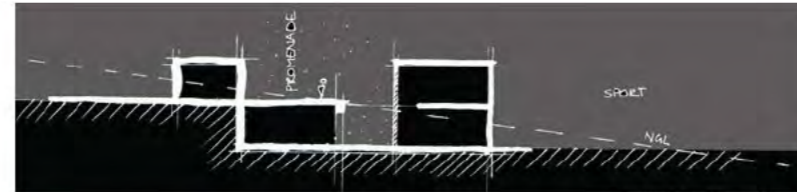


fig 113. Sectional Parti

Inhabiting The Wall

The third phase of design development was inspired by the idea that the building should create a civic scale and still sit low within the landscape.

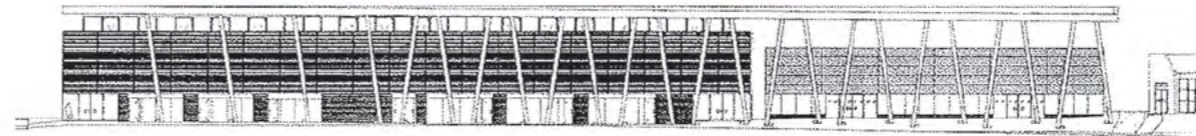
The sectional parti illustrates the concept where the building inhabits the space underneath the promenade in an attempt to "inhabit the wall".

This concept was inspired by the idea that the wall does not divide within the sporting environment but rather serves as the common denominator.

Irregular Columns Supporting Roof

The irregular columns that support the roof is derived from the local examples of building structures within the area that use timber columns, often irregular, to support the roof.

Precedent: Wakerfield Market Hall - David Adjaye



East elevation

fig 114. Wakerfield market . (Google images 2012)



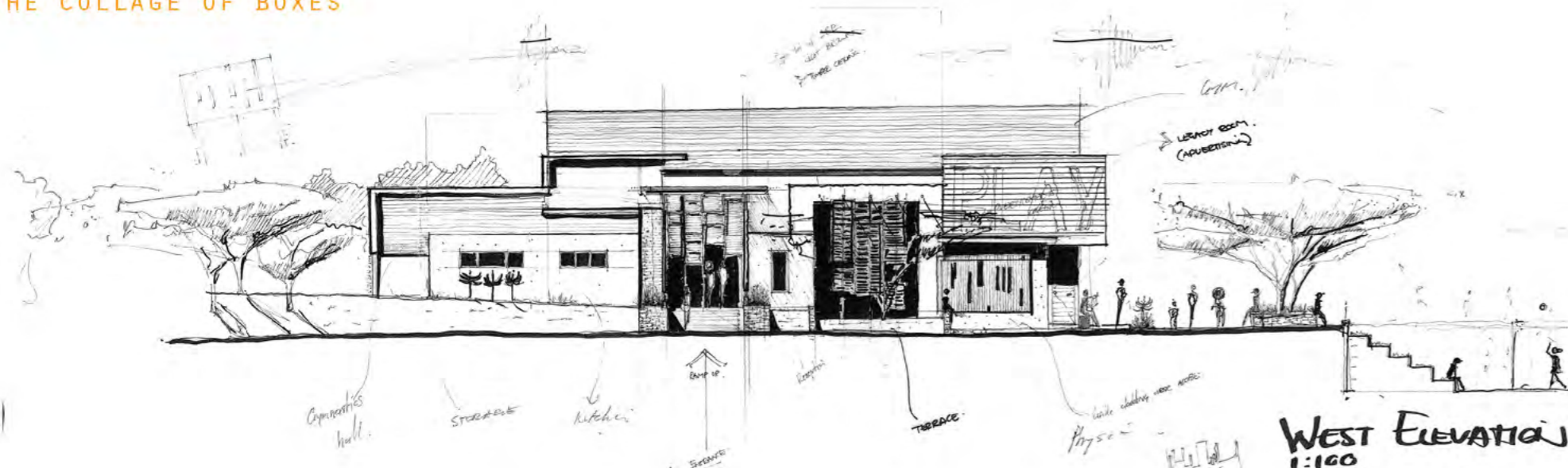
fig 115. View from field.

fig 116. Photo of model.



AUGUST 2012_

THE COLLAGE OF BOXES



West Elevation
1:100

fig 17. West Elevation. (not to scale)

The Collage Of Boxes

The collage of boxes was an exploration that incorporated the 'Streeks[Taal]' or urban characteristic of houses that sprawl and connect to one another. the facade of the building explores a kinetic quality that has the ability to change and adapt, a characteristic informed by the authors understanding of sport architecture.

Sport architecture and Werf[Taal] are two of the five hyperterms that inform the final design as discussed later in this chapter.

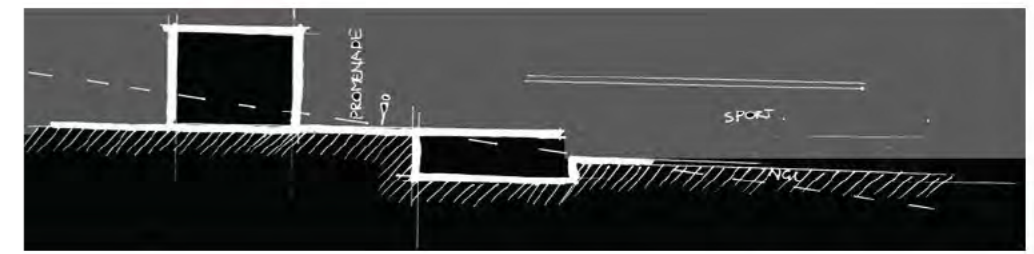
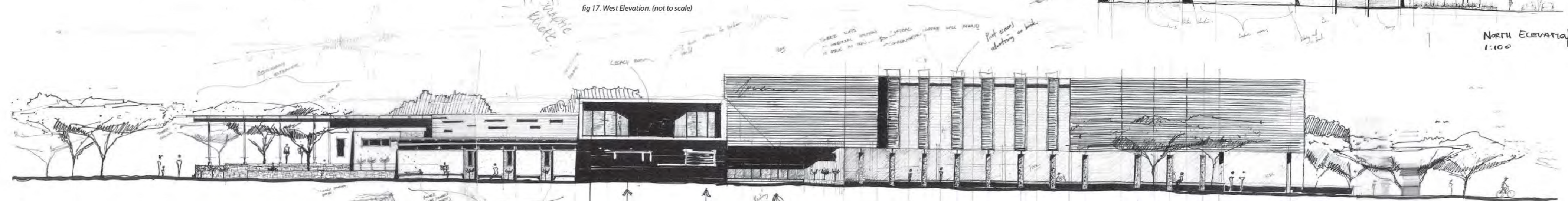


fig 118. Parti diagram.



South Elevation
1:100

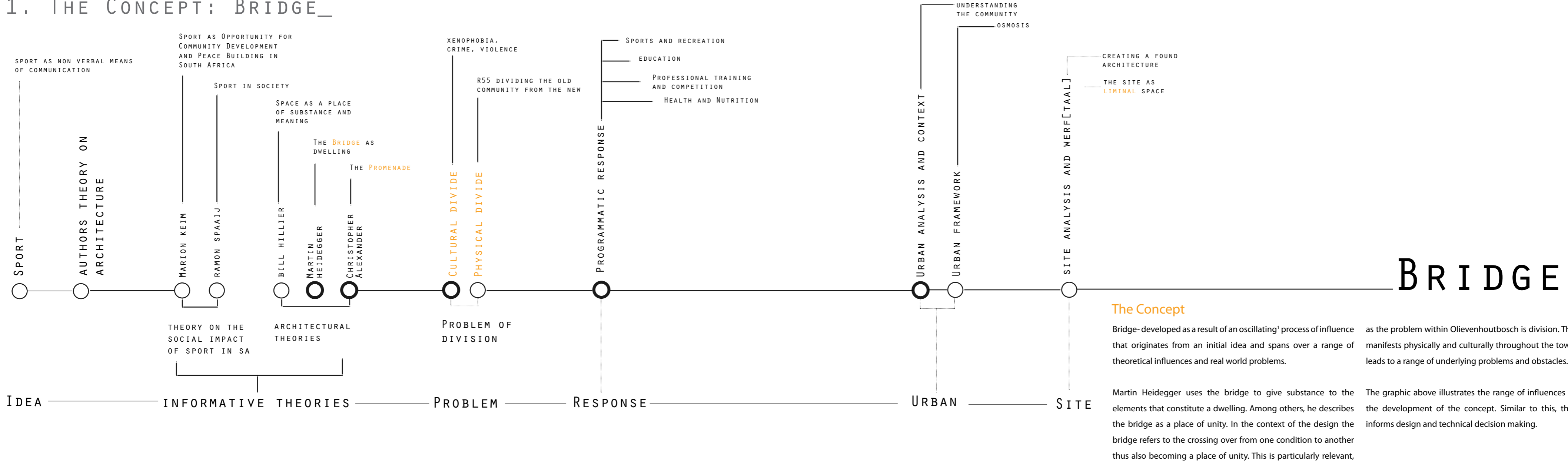
fig 119. South Elevation. (not to scale)

THE FIVE HYPERTERMS__

THE CONTINUATION OF THE DESIGN DEVELOPMENT CHAPTER WILL DISCUSS THE PROCESS OF DESIGN DEVELOPMENT AND FOCUS ON THE FIVE PRIMARY FIELDS OR HYPERTERMS. THESE HYPERTERMS GOVERN THE UNDERLYING IDEAS THAT GIVE SUBSTANCE TO THE ARCHITECTURE. THIS CHAPTER EXPLAINS A COMPLICATED ITERATIVE DESIGN PROCESS IN A LINEAR MANNER AND ILLUSTRATES HOW IT INFORMS THE ARCHITECTURE.

1. THE CONCEPT: BRIDGE
2. THE NEW URBAN CONDITION
3. STREEKS[TAAL]
4. WERF[TAAL]
5. SPORT ARCHITECTURE

1. THE CONCEPT: BRIDGE



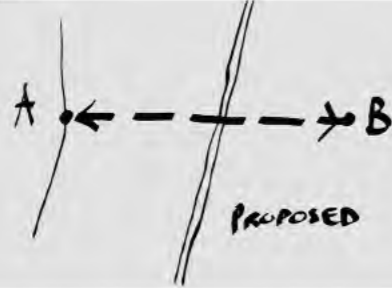
¹. The back and forth process of extremes.

2. THE NEW URBAN CONDITION_

1



2



3

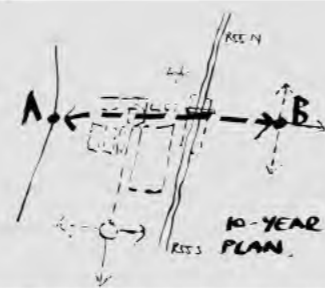


fig 120. Parti of new urban condition.

The New Urban Condition As Design Informant

The new urban condition's primary response is in reaction to the problem of division. As explained in chapter 01 the division within Olievenhoutbosch is caused by both physical and cultural barriers. The physical barriers manifest in dangerous roads and servitudes, while the cultural barriers manifest as xenophobia, crime, violence and alcohol abuse.

Furthermore, the need for open space to facilitate sport fields and their expansion, the possibility to serve as a "display window" to passers by and finally the possibility to connect nodes with a pedestrian bridge over a barrier is what informed the nature of the new urban condition and the selected site for its establishment.

As explained in chapter 02, the new urban condition creates an opportunity for the building to serve as catalyst in the process of future developments.

It is however not the intent of this chapter to explain the process of the urban design, but rather why and how the new urban condition informs the architecture:

1. Given the linear nature of the urban response and the bridge concept, the urban design informs the building's linear form.

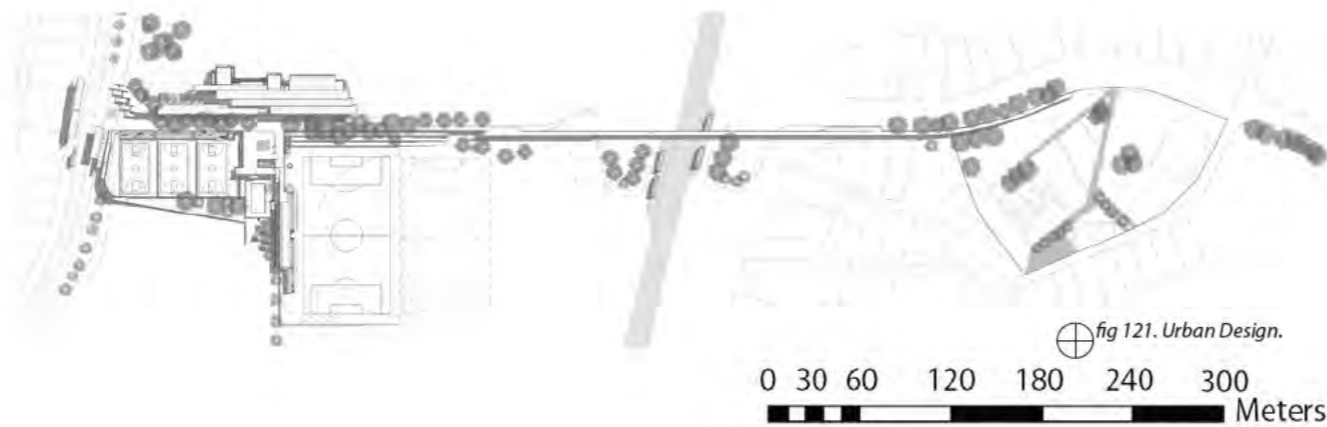


fig 121. Urban Design.

2. The new urban condition includes a pedestrian bridge that crosses the R55 road. The building and the bridge communicates conceptual similarities that communicates a similar language. This unity, strengthened by Alexander's theory on the promenade provides the platform for integration and reconciliation.

3. The new urban condition includes a pedestrian bridge that crosses the R55 road. The building and the bridge communicates conceptual similarities that communicates a similar language. This unity, strengthened by Alexander's theory on the promenade provides the platform for integration and reconciliation.

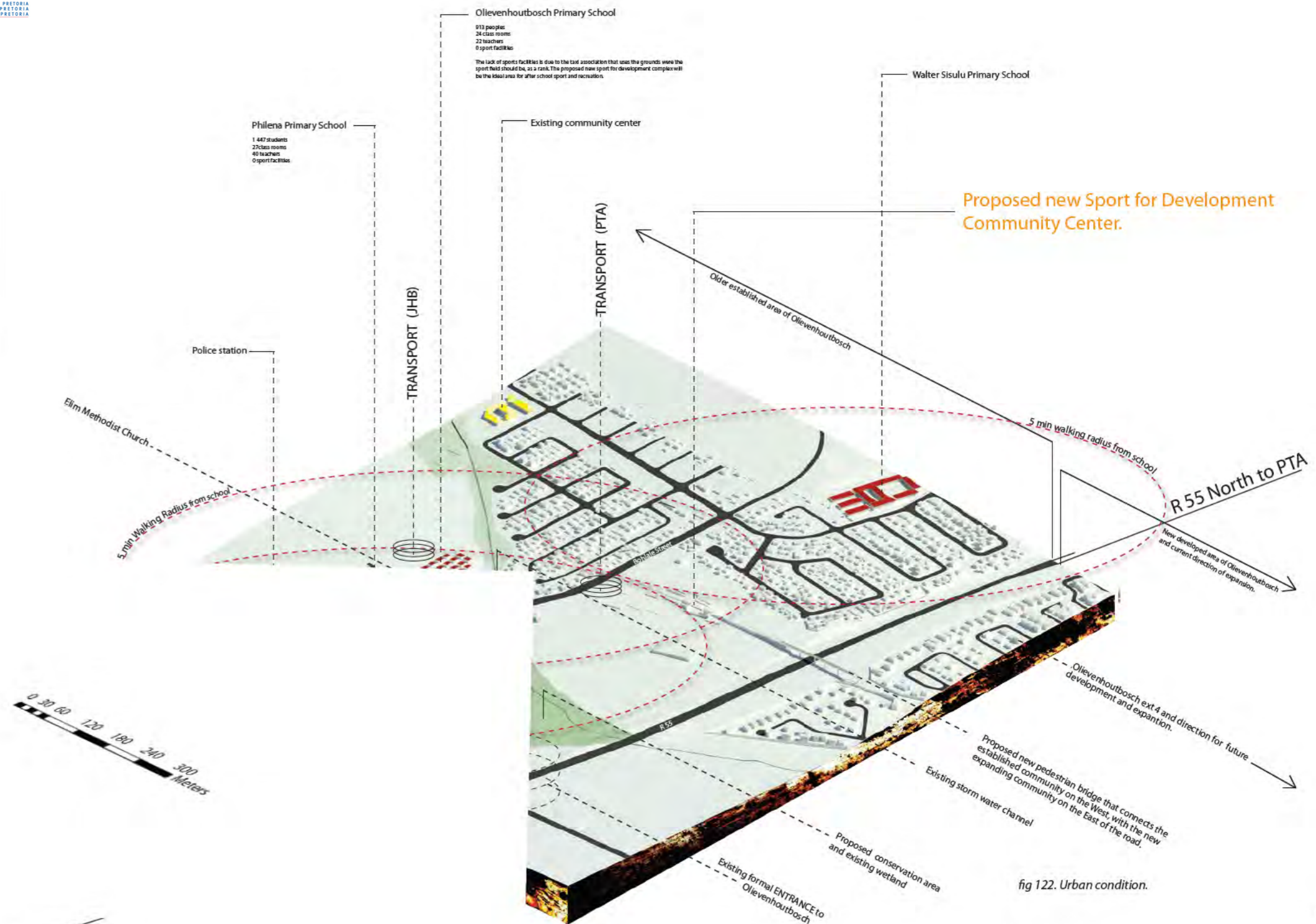


fig 122. Urban condition.



Existing Urban Condition



fig 123. Existing.



Proposed



fig 124. Proposed intervention on urban scale



10 Year Plan



fig 125. 10 year plan.



Primary And Secondary Structure

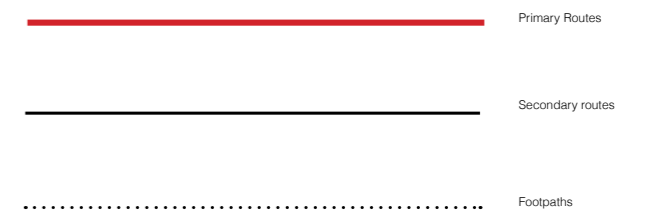


fig 126. Primary and Secondary routes.

3. STREEKS [TAAL]

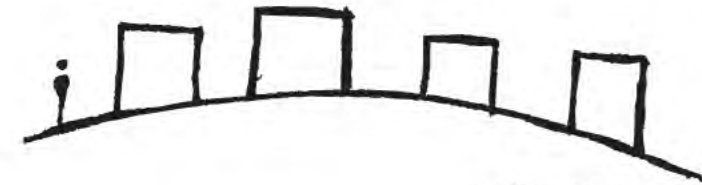


fig 127. Parti of urban fabric.

Streeks[Taal] As Design Informant

Streekstaal is the study of the language of the existing urban fabric as seen in chapter 02, but the question raised in this chapter focuses on its role in the development of the appropriate architecture.

1. Scale

The parti diagram illustrates the existing urban fabric and scale. It is the opinion of the author that the existing scale and spatial form should be sensitively reinterpreted in the architecture as it will provide the intervention with a familiar undertone and spatial understanding.

2. The sprawling effect

The sprawling effect coincides with the idea of sport architecture (see *Sport Architecture*, p 108). It refers to the kinetic quality

between these boxes and their tendency to latch onto one another. This usually happens as a result of financial benefit. The owner of an RDP house sublets shacks and rooms that attach to its electrical supply.



fig 128. Sprawl.

3. Umbrella town.

In chapter 02, the author refers to Olievenhoutbosch as 'Umbrella Town'. No matter the weather conditions or seasons, people are seen carrying umbrellas. This intrigued the author and after an

analysis of the umbrella, it became evident that in addition to its basic function of protecting the user from the elements, it has the unique ability to create and manipulate space. It has the ability to create directional and undirectional space, private or public space, all depending on the height and way in which the umbrella is held.

This ability is carried forward in the architecture. The facade of the building has the ability to add certain qualities to space and the height of the roof is manipulated to create different spacial experiences.

4. Application

Informed by the spatial requirements of sport and exercise; and the sprawling nature of the hyperterm- Streeks[Taal], the building consists of a series of spatial boxes. The roof plan illustrates clearly how these boxes either protrude into the the landscape or are binded together with the linear roof structure.

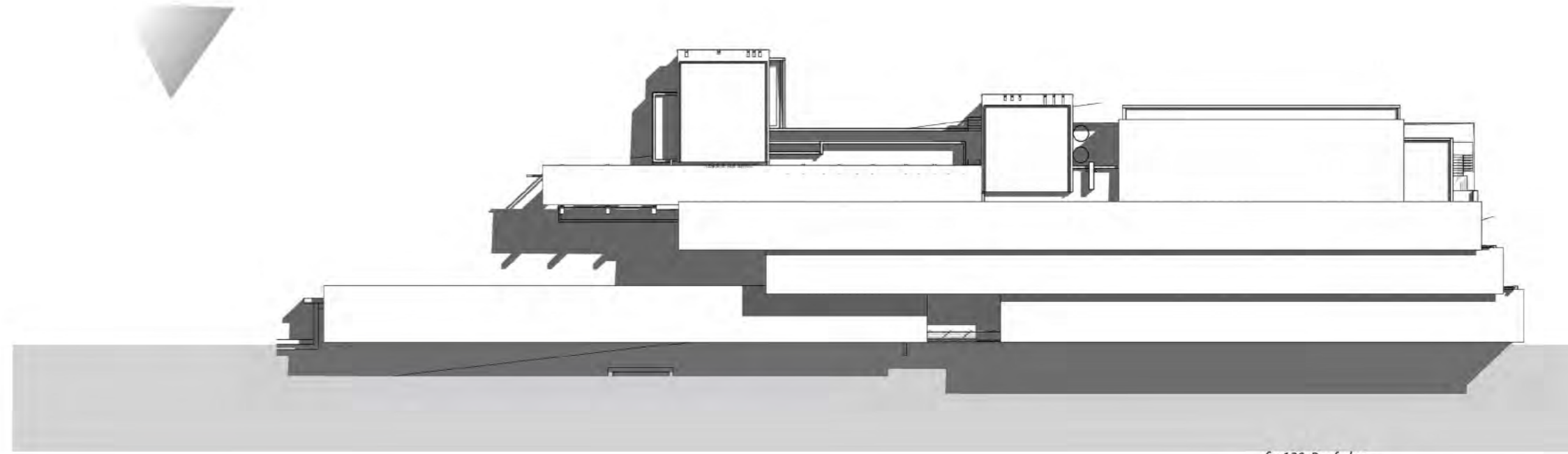


fig 130. Roof plan.

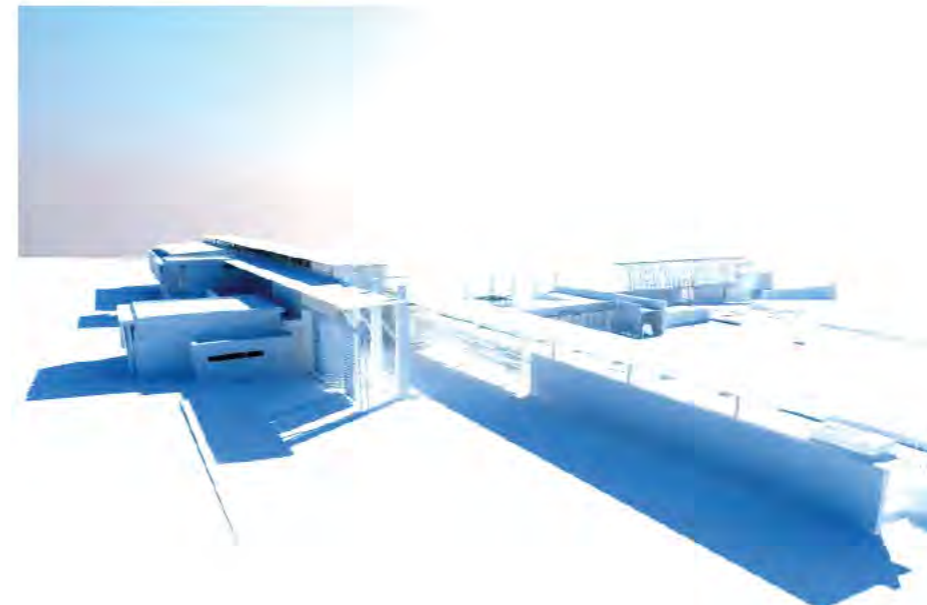


fig 129. Perspective rendering.

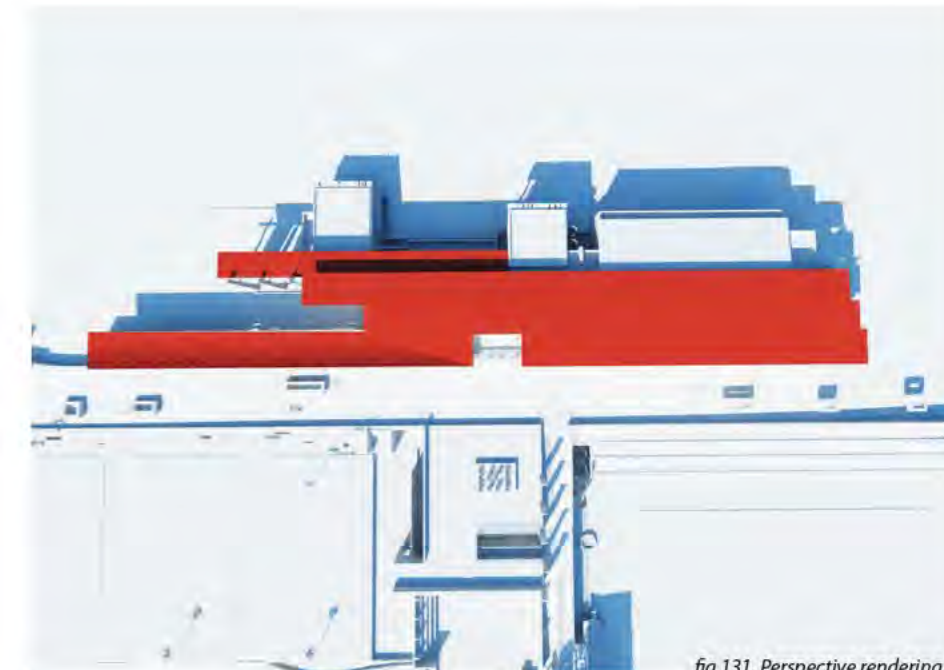


fig 131. Perspective rendering.

4. WERF[TAAL]

As explained in chapter 03, the Werftaal refers to the language of the site itself. It is the subtle ideas that are communicated within the elements found on site. Werftaal is the hyperterm used to describe six influential ideas. These ideas are:

1. Beauty in the imperfection.
2. Wayfinding
3. The site as liminal space
4. Found architecture
5. Skins and screens

1. Beauty in the Imperfection

As explained in chapter 03, *beauty in the imperfection* is found where the presence of human activity and a sense of community have unconsciously manipulated an object to become altered or 'imperfect' (see fig 131). This is often also achieved by natural processes such as weathering and decay.

This beauty is also found in the use of local materials, local technology and local labour over foreign imports - even if there are limitations. It is often these limitations that produce a unique quality and appeal as is the case of vernacular design.



fig 13. Textures on site.

2. Wayfinding

Wayfinding and signage is becoming increasingly important in architectural design but more than that, the building itself should be able to guide the user through the building, indicating moving and sitting areas.



fig 133. Wayfinding

3. The Site as Liminal Space



fig 134. Sketch of moving through.

Currently, the site is a space of movement. It is used by the community to reach the R55 road or cross to the other side. The design attempts to keep this identity of the site. The potential of the site as liminal space will be interpreted by means of a promenade. After careful analysis of community formation in Olievenhoutbosch and other township cultures, it became evident that the community interacts most effectively and actively on their way and away from certain activities or destinations.

4. Found architecture

Found architecture refers to the critical reinterpretation of materials that are common within the community and relates to the existing fabric. Thus, the proposed building responds by attempting to personify this concept in the use of steel, corrugated sheets, timber and face brick.



fig135. Found architecture.

5. Skins and Screens (dissolving borders)

As mentioned in chapter 03, the skins of shacks and shanties wrap around an internal frame to give the building its physical form but also to protect the inhabitants from the environmental elements and keep the inhabitants safe.

Interpretation: In the sport for development building design, skins and screens are used to protect the building in the same manner as the existing local structures for the purpose of security, safety and environmental benefits. However, the use and interpretation of skins and screens possess a greater underlying symbolism with regard to the larger reconciliatory task at hand within the specific context, namely, dissolving borders.

5.1 Dissolving borders

As the barriers imposed by Apartheid began to fall- concrete walls and fences began to arise not only in white towns but also in black townships all over South Africa. 'Walls of fear' as described by Peter Marcuse (1997:101) increasingly defined property lines as a self imposed system of separation. Given the juvenile state of Olievenhoutbosch, it is the latent effects of the Apartheid regime that has ingrained a certain mistrust between population groups. This is compounded by the devastating effects of HIV, housing shortage, crime and violence as well as the notorious string of xenophobic attacks on foreigners.

Ironically, these borders between public and private space represents a system of restricted movement and increasing mistrust that is a result of post Apartheid trauma.

It is thus the role of the architect to consider the client's perception of built form and dissolve the barriers that isolate social realms and to create built form that provides opportunity for free interaction.

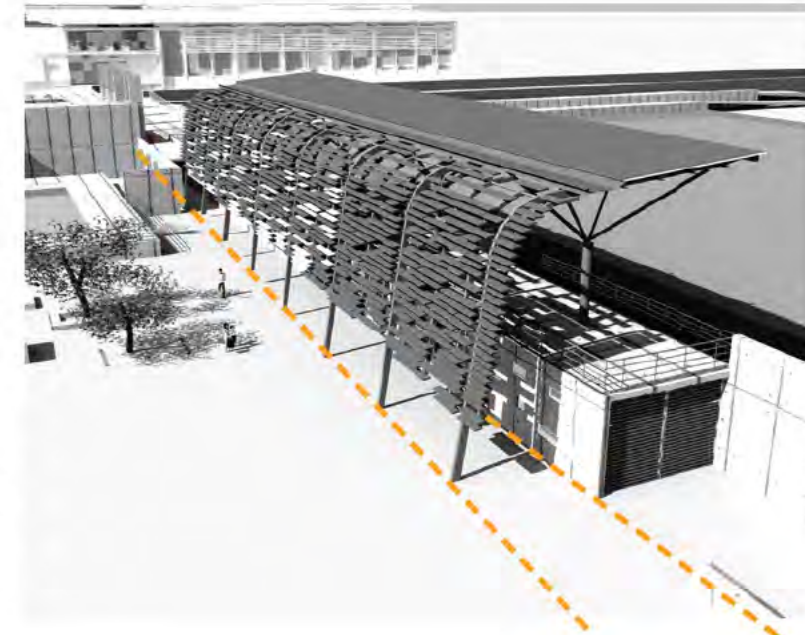


fig136a. Western facade of Pavilion.

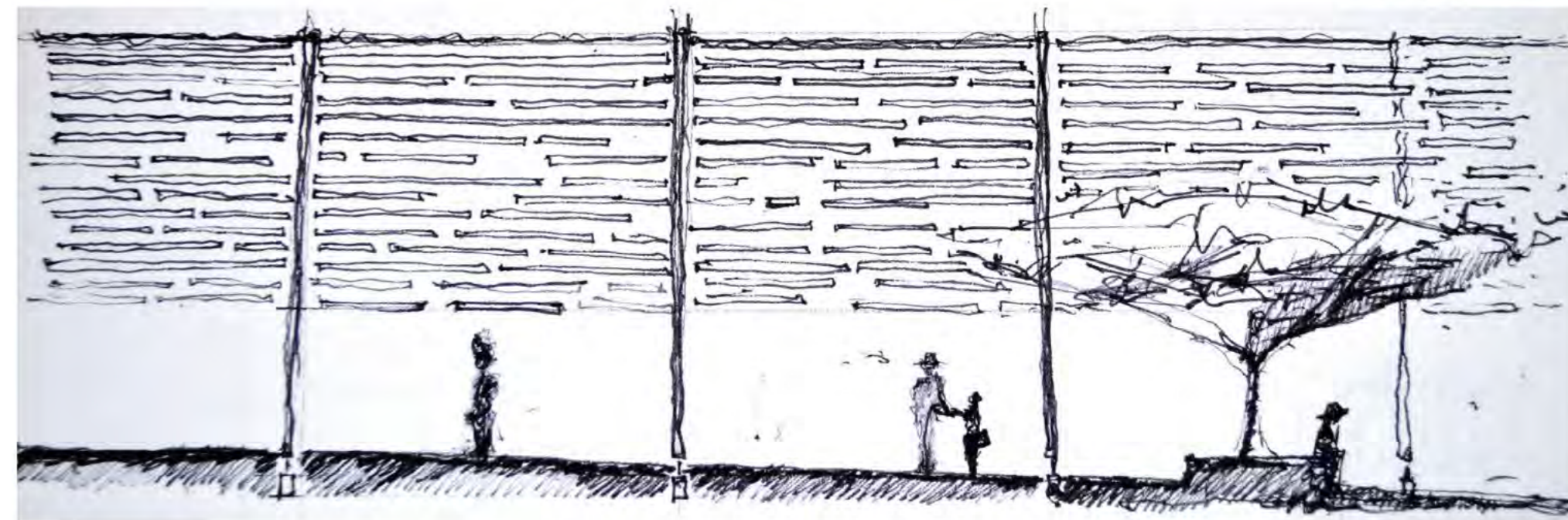


fig136b. Dissolving Borders. 107

5. SPORT ARCHITECTURE_

SPORT Architecture

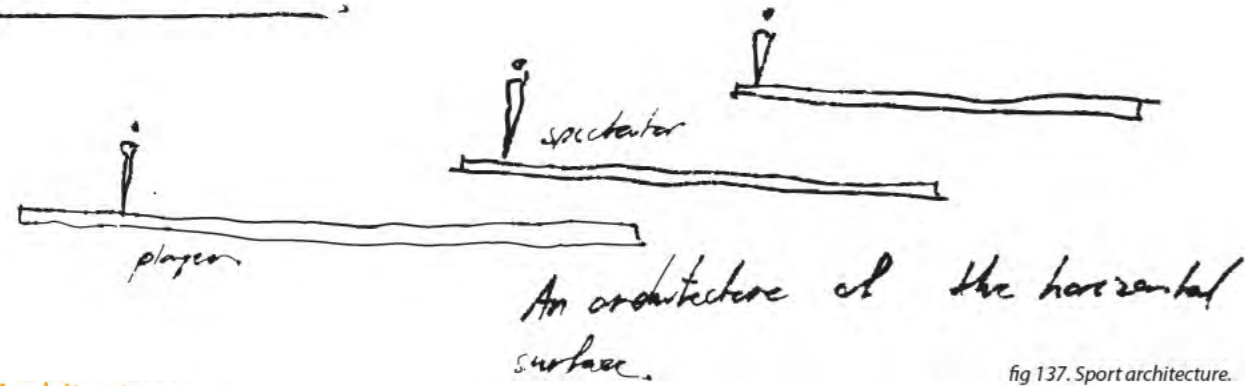


fig 137. Sport architecture.

Sport Architecture

Sport architecture is interpreted by the author as the architecture of the horizontal surface. This manifests throughout the new design in the way the landscape has been manipulated to form spaces where people can be seen and see other people. This horizontal platform responds to the natural slope of the site with terraces and steps to create vantage points and elevated sitting and walking platforms.

The roofs of the building have a minimum pitch for rain water collection but still responds to this notion of sport architecture and the horizontal line. The author identifies two areas where the potential of the horizontal line has a binding quality:

1. The Plinth

The sport for development community centre is intended to grow and develop over time. The author made use of a plinth that defines the edge of the promenade. The plinth will also bind

future community orientated buildings with the proposed sport for development main building as they share the same foot in the form of the plinth.

2. The Roofs:

The long linear spanning roofs bind the rooms within the building together and extends over the edge of the building to create opportunity for spontaneous and informal use by the community.

In conclusion, sport architecture requires the designer to think about the ritual of sport and attempt to capture the process in the structuring of the spaces related to the event.



fig 138. Part of roof and Plinth as binding elements

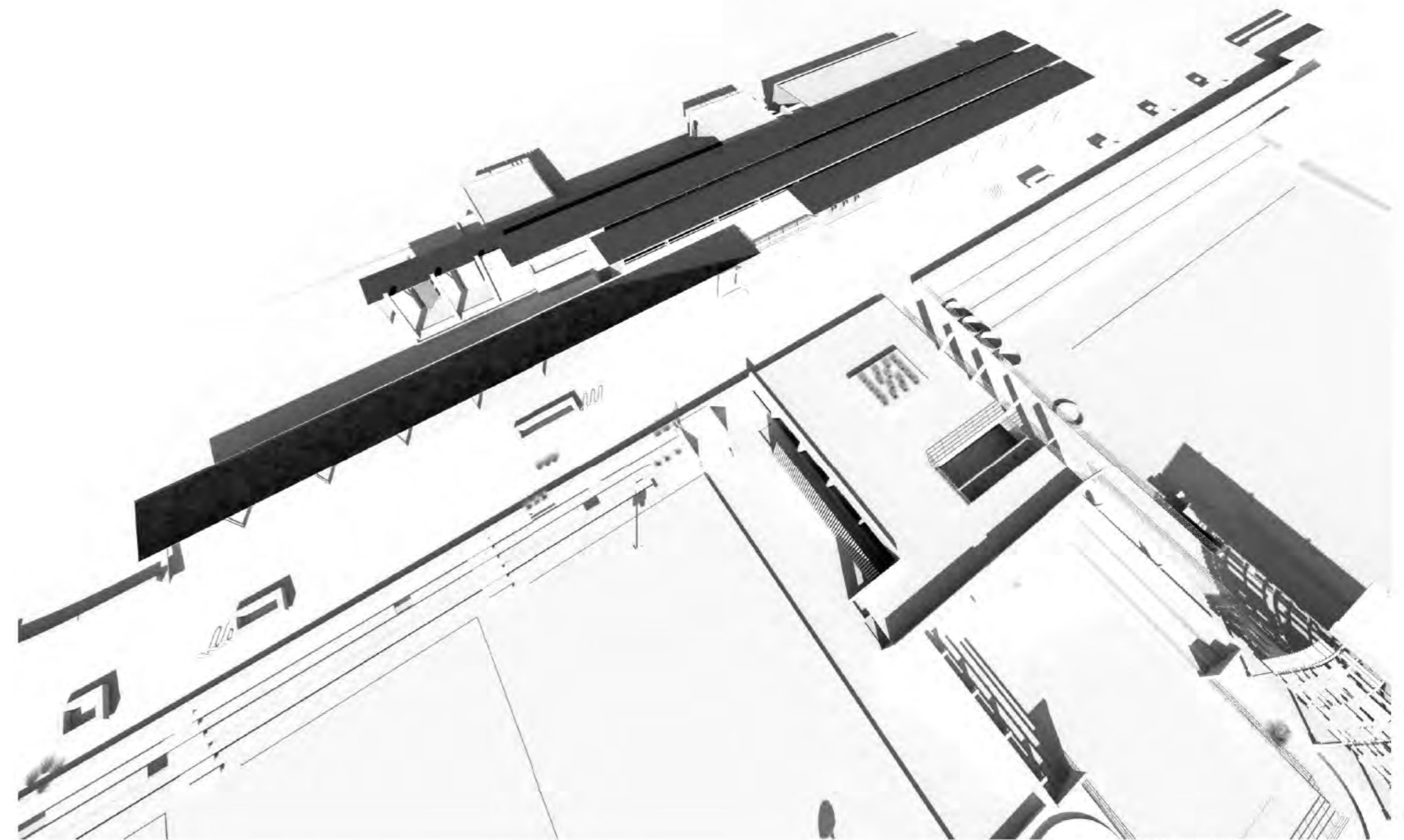
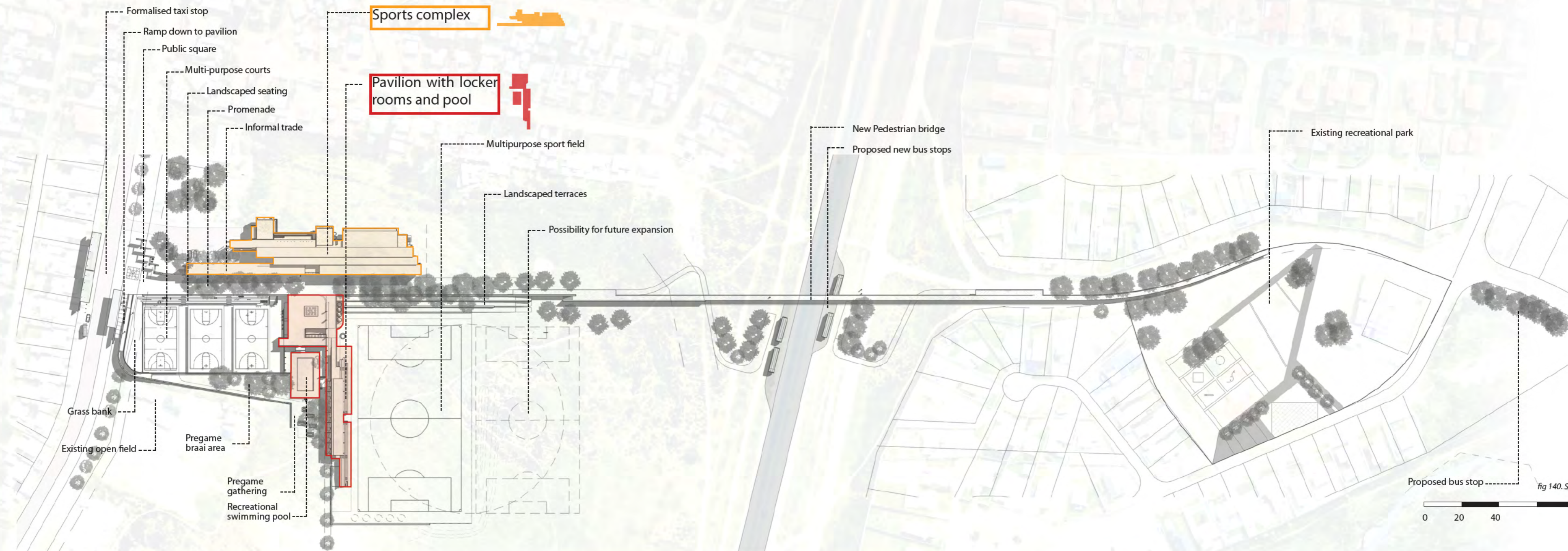


fig 139. Roof and Plinth as binding elements

PLANS

Site Plan



Proposed bus stop fig 140. Site plan.



Ground Floor Plan

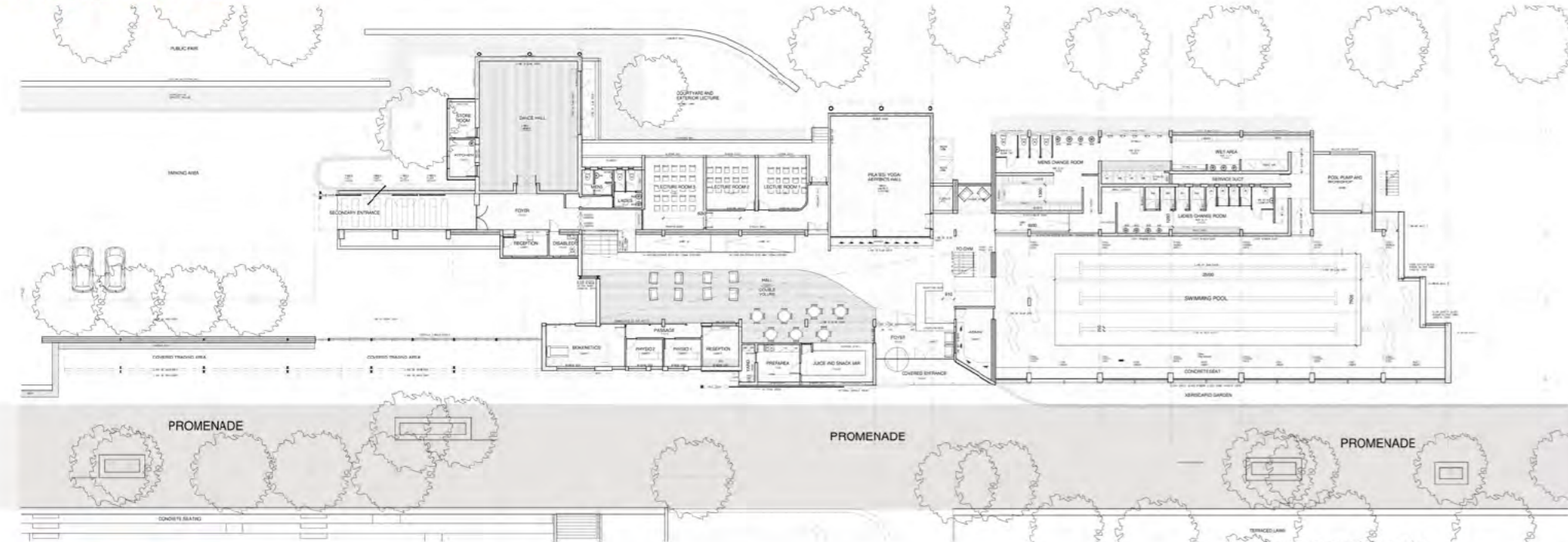


fig 141. Ground Floor Plan

First Floor Plan

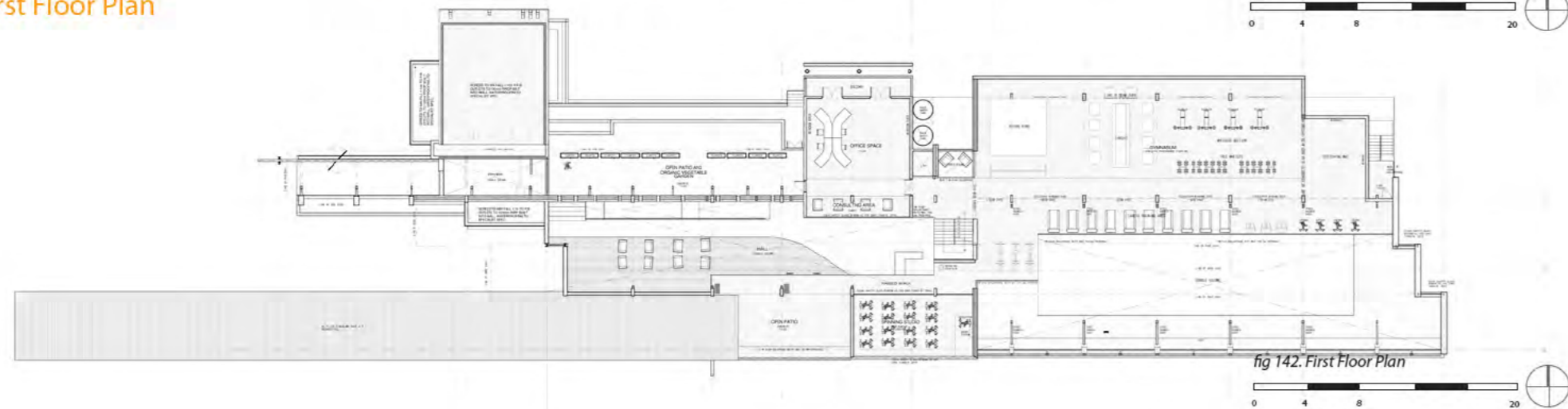


fig 142. First Floor Plan

Pavilion and locker rooms Floor Plan



fig 143. Pavilion and Locker Room Floor Plan

TECHNICAL DEVELOPMENT

— 05

PRINCIPLES__

The utilitarian and functional requirements in the technical resolution of a sport for development community centre within Olievenhoutbosh generally include robust and durable surfaces and components that can withstand the kinetic nature of the user and the sport being played. A third requirement is the ability of the technical resolution to include local skills and labour and create opportunities for community participation- an aspect that is of fundamental importance within a community such as Olievenhoutbosch.

Thus, it can be said that robustness, durability and a platform for community participation stands central to the technical resolution, however, it is in the linguistic (taal) dialogue between the tectonic and stereotomic that a building gives meaning to the social abstraction of society and ultimately becomes a work of architecture.



fig 144. Kinetic nature of the games.

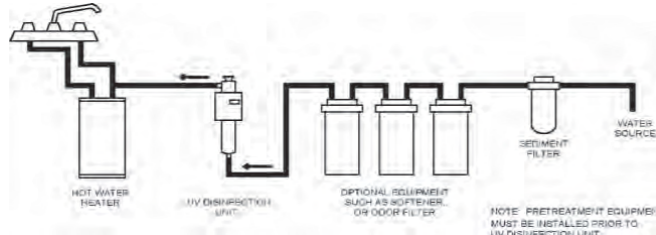


fig 145. Purifying water for drinking.



fig 146. Employed community members.

Materials to be robust and durable to handle the kinetic nature of sport and sporting equipment such as balls and special shoes.

The basis of good nutrition is fresh water. Fresh water source have throughout history been a place of gathering and interaction.

Willing community members to stamp down their identity by contributing in the process of construction.

This early design sketch illustrates the tectonic concept and response to site.

STRUCTURAL SYNTHESIS__

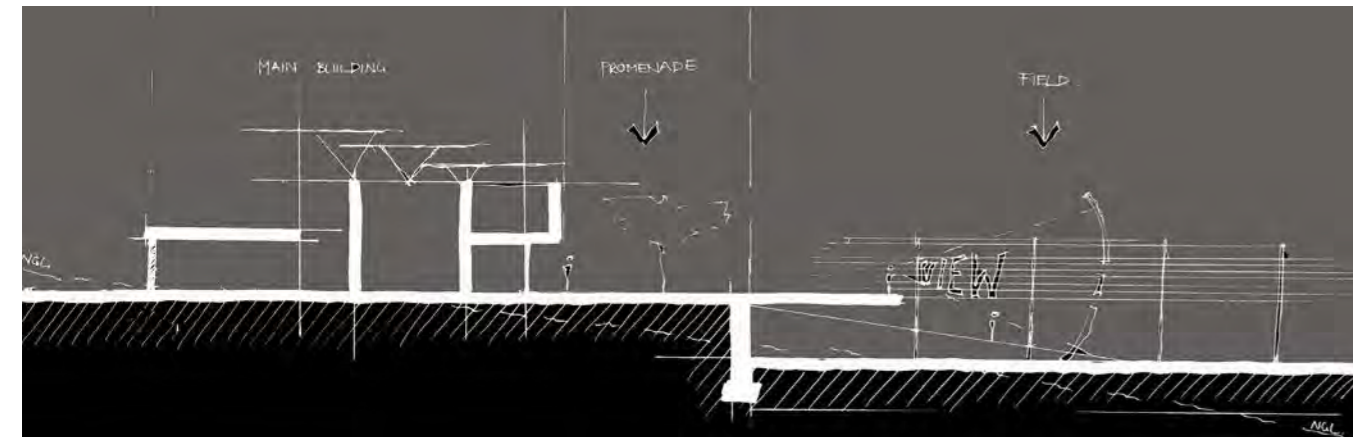


fig 147. Structural Synthesis.

TECHNICAL PRECEDENT 1__

Foster Lomas Artists' Residency Italy



fig 148 a. Artists Residency (Foster Lomas 2011).

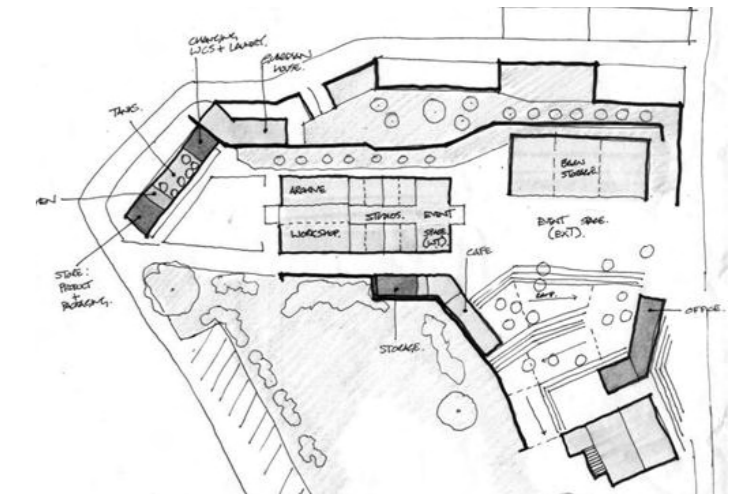


fig 148 b. Artists Residency Plan (Foster Lomas 2011).

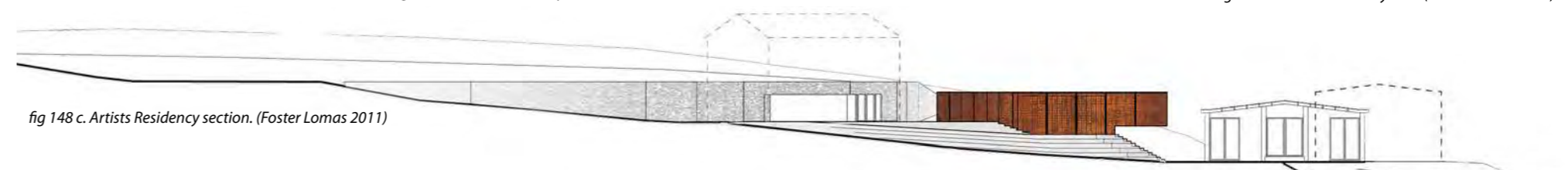


fig 148 c. Artists Residency section. (Foster Lomas 2011)

TECHNICAL PRECEDENT 2__

MYD Studio , Dominus Winery Napa Valley, California

The winery exemplifies the potential of the gabion. The winery is a gabion building by Herzog & De Meuron. It was built to integrate into the landscape, almost disappearing, allowing the winery to be what it should be. The buildings' skin is made of basalt rocks that allows natural light to filter in the entire building, while keeping it naturally insulated, and especially cool in the extreme summer heat of the Napa Valley.



fig 149 a. Dominus Winery. (MYD studio 2010)



fig 149 b. Interior view of Winery. (MYD studio 2010)

TECHNICAL PRECEDENT 3

Mahiga High Rainwater Court Mahiga, Nairobi Area, Kenya



fig 150. Fresh water.



fig 151. Community members gathering

The Rainwater Court is a multipurpose, full-size basketball court designed for the St. Joseph Mahiga Primary School and community of Nyeri, Kenya.

The relevance of this project as technical precedent lies in the simplistic systems and processes that respond to the immediate need and context of the community, namely: Shade, Water, Light, Materiality and Community participation.

The facilities include a shade structure that has integrated rainwater collection and UV purification system with solar panels for the water system and night lighting in areas without electricity.

The full-court configuration has a 510 m² playing surface covered by metal roof with gutters and rain water down pipes to collect an estimated of 40,000 litres of water per year. 25 000 litres of rain water is purified by UV purification and stored on site.

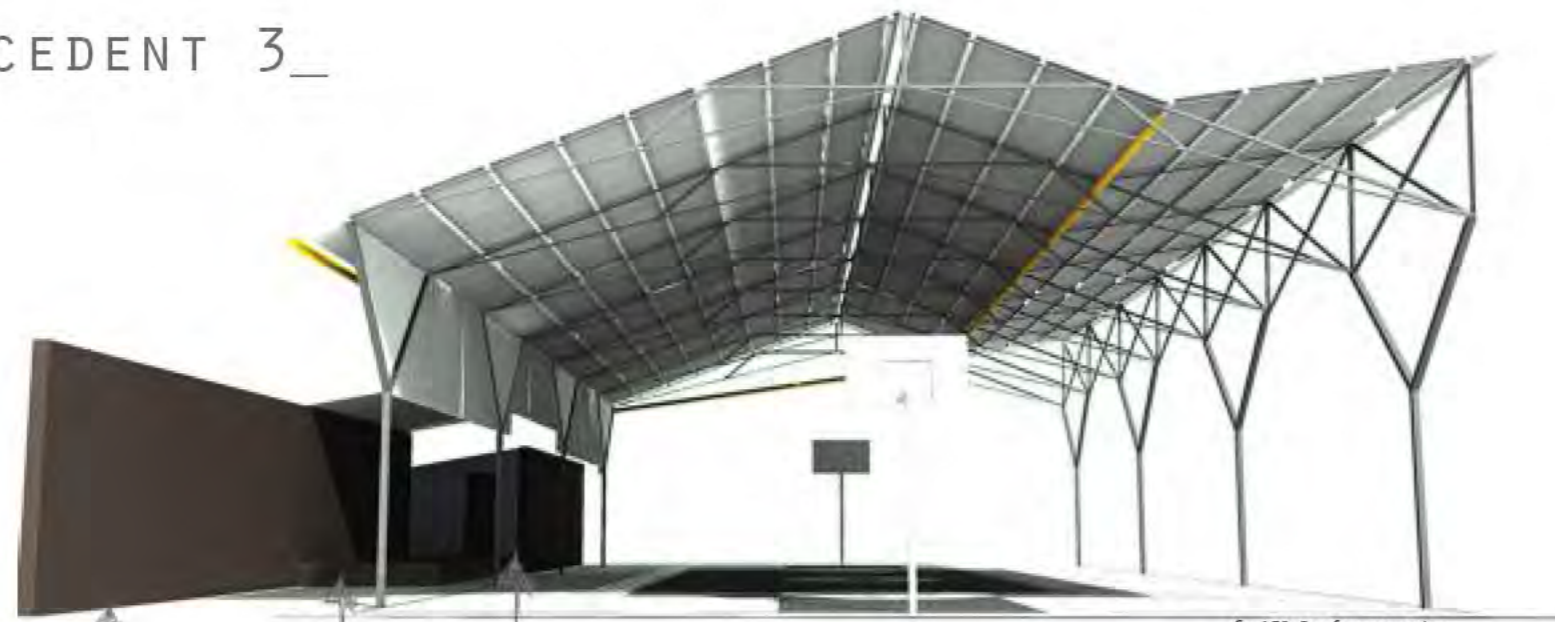


fig 152. Roof construction

STONE WINDWALL
1.8m RAISED STAGE
COMMUNITY SPACE
EQUIPMENT STORAGE



North Elevation
fig 153. North Elevation



South Elevation
fig 154. South Elevation

¹ Refers to the process of water purification where contaminated water is exposed to high levels of ultra violet light. The UV light manipulates the DNA of bacteria in the water to render it harmless and make it safe to drink.



fig 155. Community participation

Community Participation

Community participation is regarded as a very important technical quality as it is a techniques that is used to prolong the life span of the building. This principle establishes a shared sense of ownership and responsibility toward building with ultimately relates to more efficient use and architectural success.

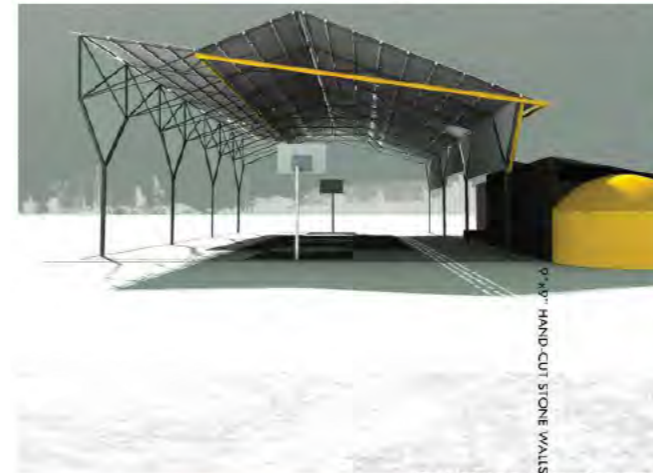


fig 156. Rain Water Harvesting

Rain Water Purification

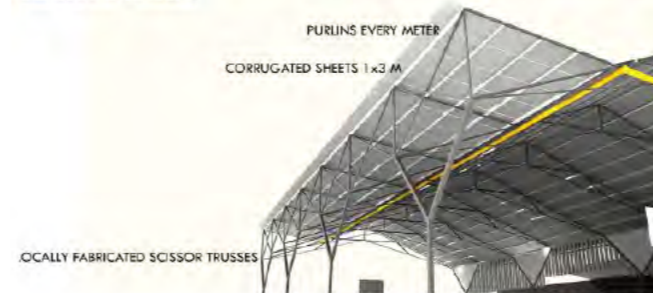
The rain water is purified by a uv purification system. Water pumps and the UV light is powered by a solar panel that is exposed to the sun between 10 am and 3 pm. This water purification system is a very relevant technical precedents in the proposed sport for development community centre as Health and Nutrition is one of the four main focus points of the project.



WALL FINISHING TECHNIQUES

Materiality

The materiality of the building has an inherent vernacular quality as all the components are locally available and erected by means of local construction teams and other local labour. The materials provide a spacial quality that is familiar to its context.



LOCALLY FABRICATED SCISSOR TRUSSES

PURLINS EVERY METER
CORRUGATED SHEETS 1 x 3 M

fig 157. Materiality

TECHNOLOGY AND MATERIALS_ (PRIMARY STRUCTURE)

WALLS_

Introduction to Walls

What is the wall in sport architecture? This is the question raised by the author in an attempt to understand what the walls want to be and what it wants to be made of. As explained in chapter 04, sport architecture is the architecture of the horizontal surface and thus explains the horizontal roofs that bind the spaces or 'boxes of space together, but what is the wall?

In any form of sport, the wall is vary rarely on object that stands between opponents, but rather the common denominator in the sport being played. Furthermore, when, for example: a squash ball is hit against the wall, the wall will always hit it back. The wall in this scheme does not want to be a divider, but rather a common denominator, an active participant. The wall wants to push, pull and carry the landscape and the structures on it.

Masonry Walls

Load bearing and non load bearing masonry walls are to be a composite of 440, 330, 220 and 110 mm Roan Satin face brick walls with flush mortar joints as well as plastered and painted walls. The reason for the painted walls are to reflect light in internal spaces that require adequate natural light to bounce of the surfaces.

Concrete Walls

Concrete walls are not used often throughout the buildings but when the concrete is exposed the finish of the wall will be horizontally off-shuttered with rough sawn timber planks to coincide with the concrete columns.

Gabion Walls

Manipulating the landscape is the point of the departure in the construction process of the sport fields on a sloping site. Gabion walls are used to create a series of horizontal level differences and to retain banks and slopes and even used as to create the face of certain structures.



fig 158. Roan satin facebrick(www.corobrick.co.za 2012)



fig 159. Rough sawn off shuttered concrete (google images)



fig 160. Gabion wall (Google images)



fig 161. Gabion grass terraces.

Gabion Walls - Continued

The gabion wall¹ is often categorised as a cheap engineering solution to maintain river banks, canals and fluvial systems. I found that the gabion offers much more than just its effective functional value. The beauty of the gabion lies in its simplistic nature. The nature that IS the colour, the texture and the pattern.

In the context of the new sport for development community centre, gabions are used to as retaining walls that often form vegetated terraces for watching sport. Furthermore, the construction of the gabion provides ample opportunity for community participation, as filling the wire baskets is a labour intensive job.

Gabions generally require little maintenance, are cheap to install and also provides thermal mass if it is used in any built form.

¹A gabion wall is a mild steel zink coated wire basket that is filled with stone an can be used for retaining walls and river bank reinforcement.



fig 162. Gabion walls. (Google images)

COLUMNS_

Concrete Columns

The concrete columns work in collaboration with load bearing walls to carry concrete floor slabs. Column sizes range from 220 - 240 mm to 440 - 800 mm. All concrete columns to have a rough sawn off-shuttered and unpainted finish.



fig 163. Rough sawn off-shuttering. (Google images 2012).

Steel / Timber Composite Columns

The columns that support the pavilion roof are a steel and timber composite. The bridge concept manifests itself in the combination of the materials to form an collective aesthetic. The steel interior core consists of 10 mm steel flat bar welded together with a baseplate at the top and bottom to form the structural core. 280 mm diameter timber are sawn to make quarter rounds, and fixed to the steel to give the column its aesthetic appeal. The single 280 mm steel column branches into four diagonal columns that carry the overhead roof trusses. The diagonal branched steel columns attach to the truss and bottom column with 10 mm shop welded galvanized steel fin plates.

Concrete- Steel Column Composite

The concrete and steel composite columns carry the roof structure over the pool and gymnasium. Again, the composition of different materials is a response to the concept and a personification of teamwork and community building.

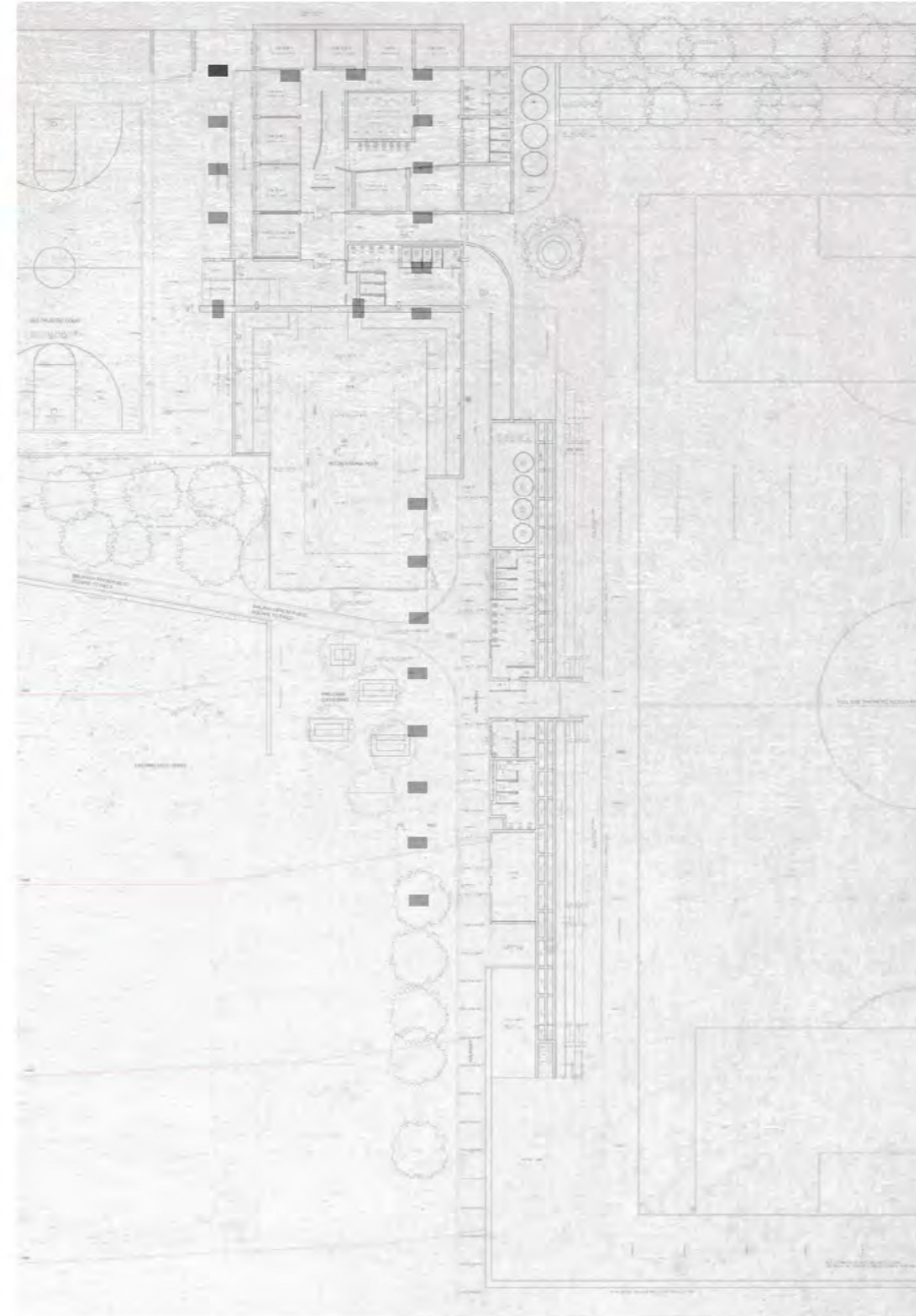


fig 164. Diagram of structure 1 (not to scale)

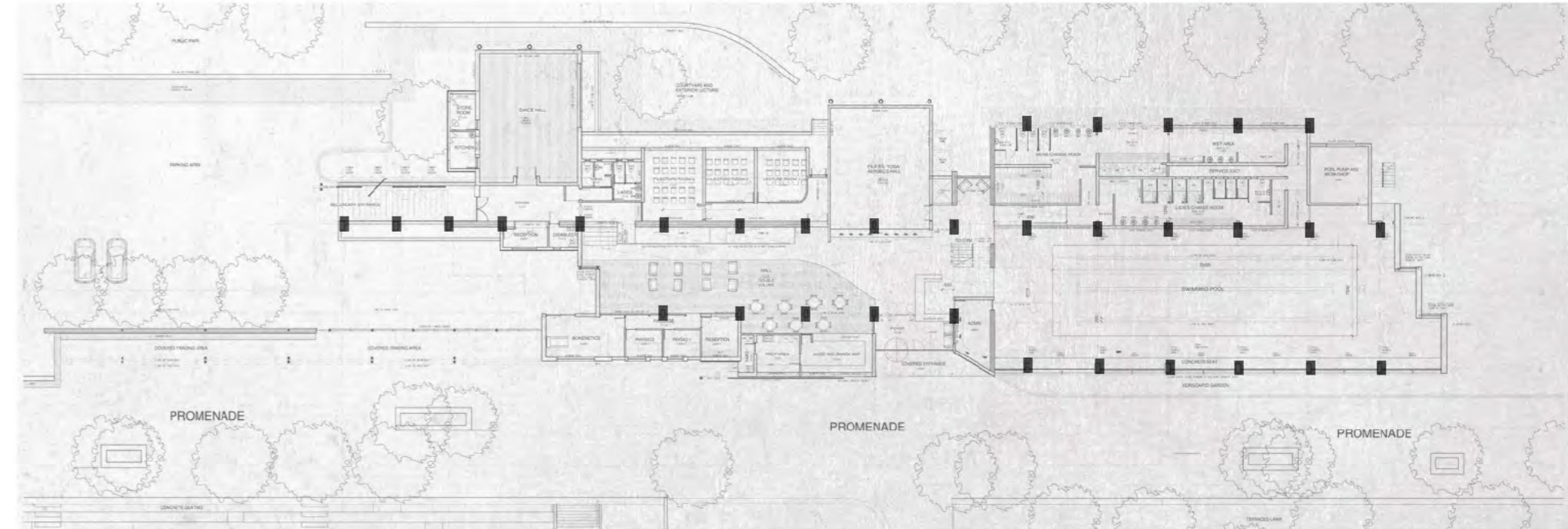


fig 165. Diagram of structure 2. (not to scale)

COLUMN DETAILS

Steel / Timber Composite Column Detail

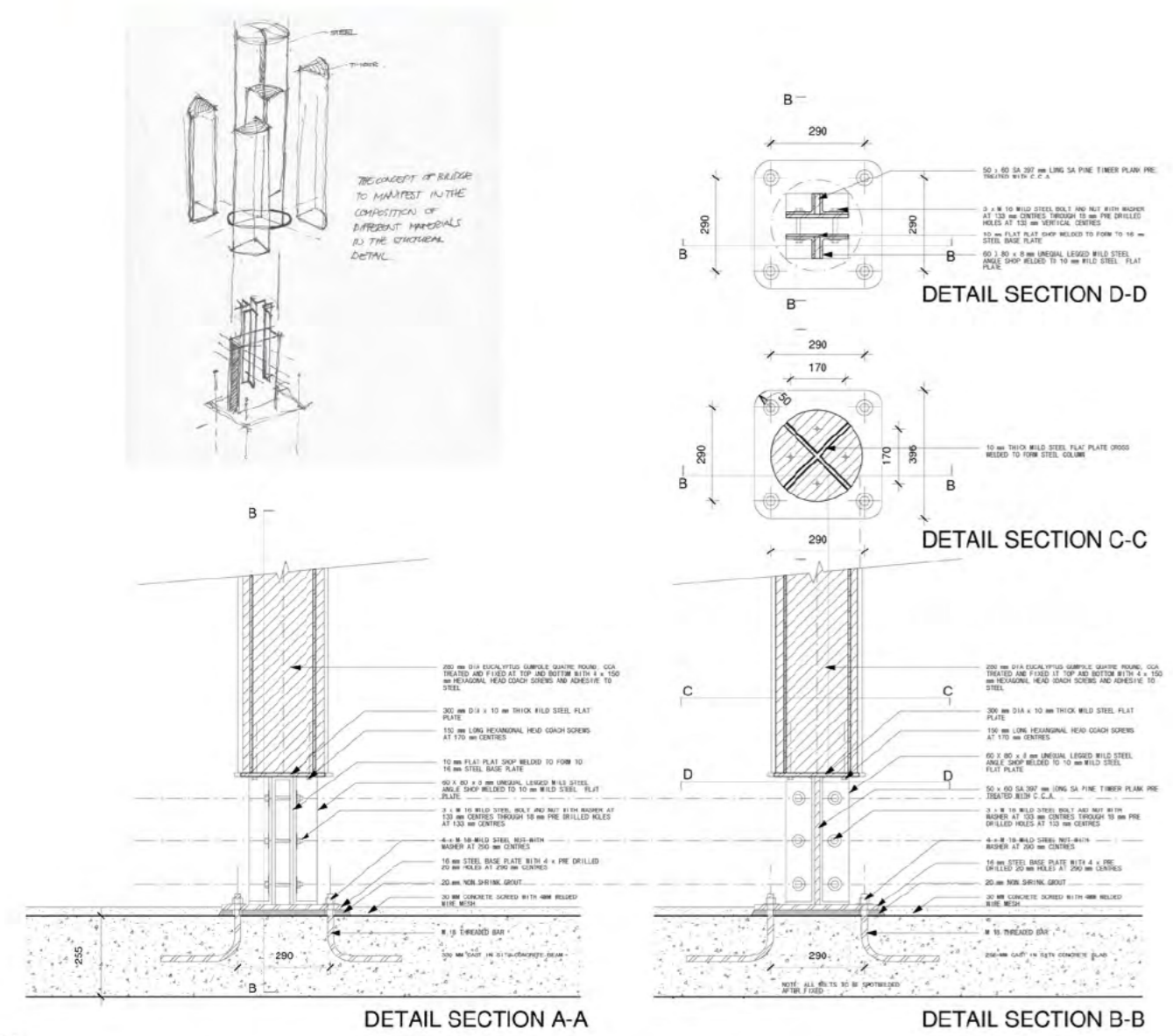


fig 166. Steel-timber composite footing detail. (not to scale)

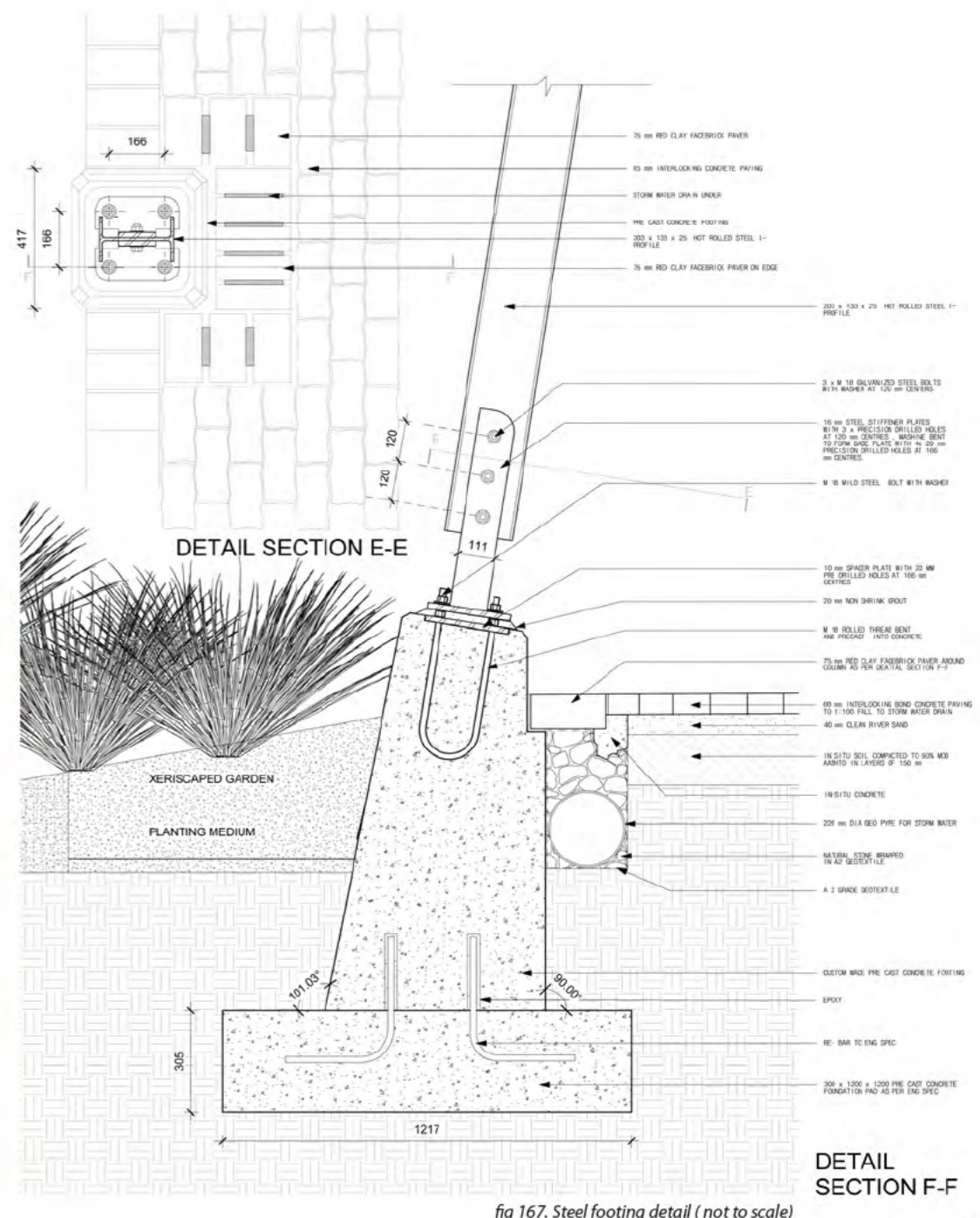
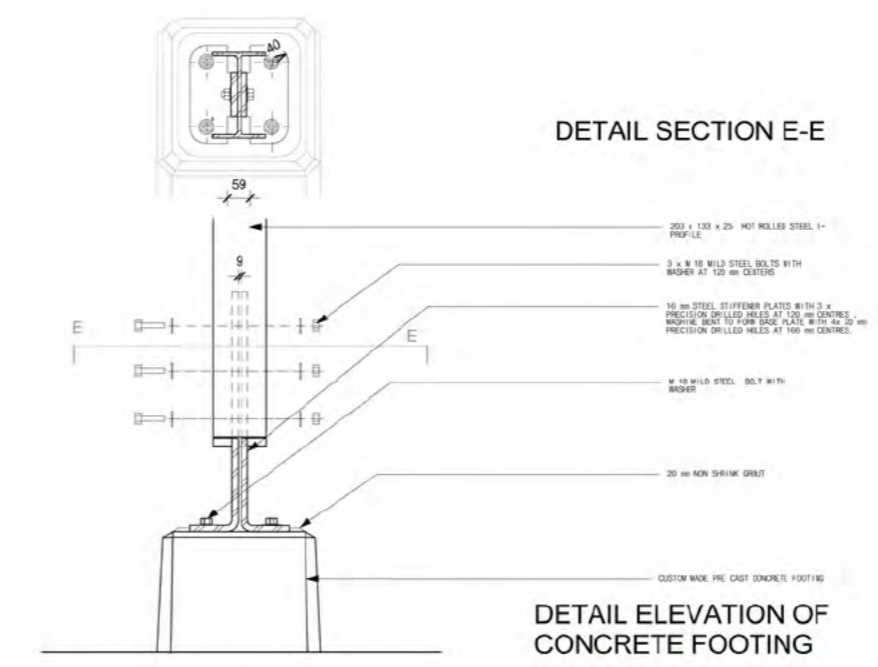


fig 167. Steel footing detail (not to scale)

TECHNOLOGY AND MATERIALS_ (SECONDARY STRUCTURE)

ROOFS_

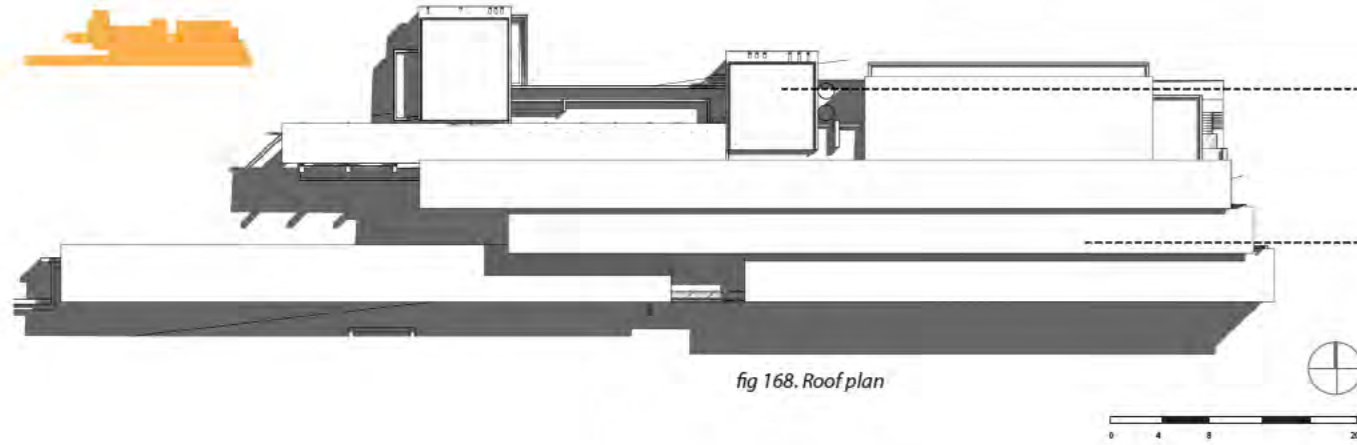


fig 168. Roof plan

Cast in-situ concrete roofs with screed at min 1:100 fall to fullbore outlets and 75mm rain water downpipes built into wall.

Zincalume klip lock concealed-fix 38.1mm "EZ clad" roof sheeting at 2 degrees to gutters and rain water downpipes.

Zincalume Roofing

Zincalume roof sheets are selected rather than galvanised mild steel. The zinc/aluminium alloy coating on steel imparts corrosion resistance of up to four times the corrosion resistance of galvanised steel.

The roof pitch over the pavilion is at 5 degrees pitch Zincalume IBR profile sheets. The roofs over the sports complex has a pitch of 2 degrees are Zincalume Klip lock sheeting and placed at 2 degrees, clad with 0,8 mm Zincalume Kliplock profile roof sheets. In both cases sheeting are fixed to steel purlins that are spaced at 1100mm centres. Roofs to receive gutters and rain water down pipes that lead to storage tanks. Zincalume Roofing has a life expectancy of well over 40 Years.

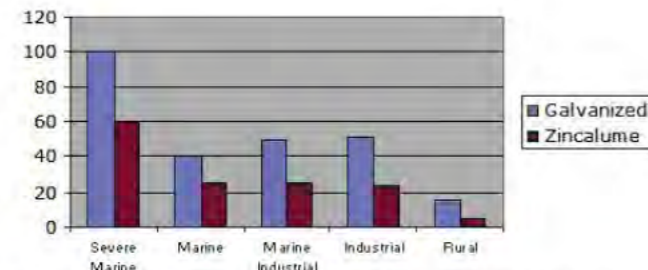


fig 169. Graph comparing surface erosion of Galvanized roof sheeting to Zincalume.

Concrete Roofs

The Concrete roofs cover the dance studio provide thermal mass to keep the spaces cool in the hot climate. Openable strip allows warm air to escape and provides cross ventilation. Concrete roofs are to be made waterproof to specialist spec.

FLOORS_

Various flooring systems are used throughout the design, ranging from nonslip bathroom tiles to cement screeds and grano in storage facilities. The most influential flooring systems will be discussed.

1. Everroll PUR High Performance Flooring Systems

Given the nature of the building, especially the locker rooms next to the field and the gymnasium, the floor required a finish that can withstand the impact of weights being dropped and provide comfortable nonslip surface for walking on with soccer or rugby boots.



fig 170. Everroll flooring. (Google images)

The Everroll flooring range is a collection of rubber flooring colour combinations using high recycled rubber content and manufactured using combination of different elastomers which gives the floor its level of wear resistance and flexibility.

The Everroll floors installed in the gym and basement locker rooms are generally to be installed in 4mm thickness but increased to 8mm thicknesses in high impact areas. The floor is also moisture resistant which makes it effective in bathroom installations.

Other advantages of PUR flooring :

- Force reduction of 16-19%, depending on thickness.
- Antislip : it provides a safe surface for running and jumping with

sufficient gliding capacity to allow for stopping movements.

- Absorbs the impact force of falling objects such as dumbbells without incurring any damage.
- Bears the load of fitness equipment placed on the flooring and prevents it from slipping.
- Absorbs impact sound. 15 to 20 dB depending on the thickness of the material.

2. Timber Laminate Flooring

Dance studios require a smooth floor finish that allows for a certain sliding ability. Timber laminate flooring will be applied in the Pilates and dance studios.



fig 171. Timber Laminate Flooring (Google images)

FACADE_

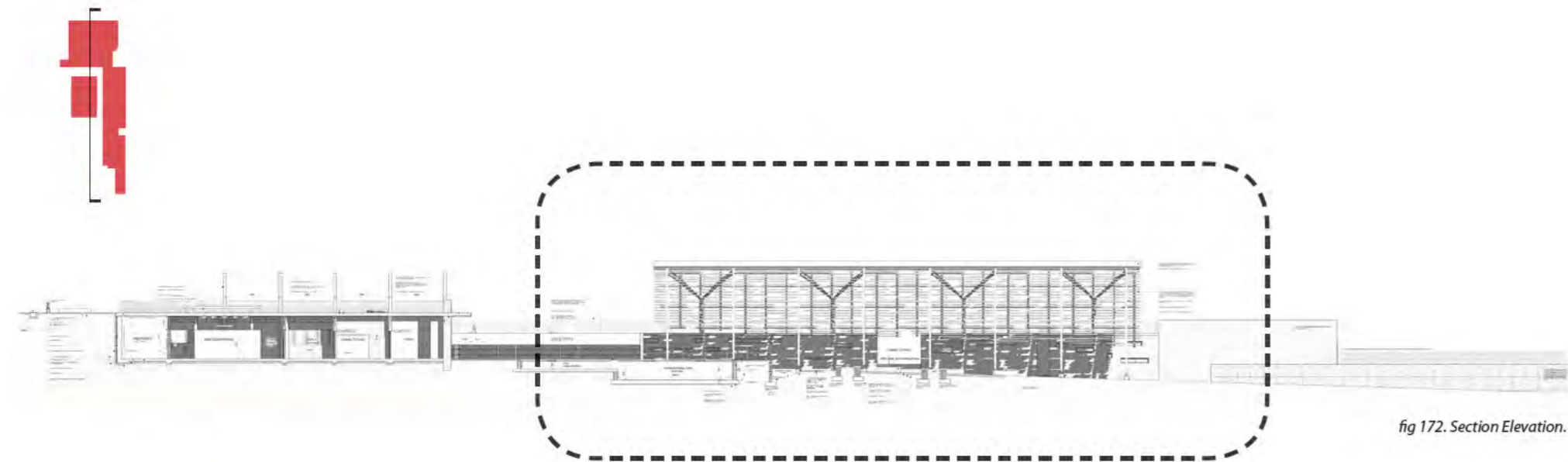


fig 172. Section Elevation.

The Pavilion Facade

The pavilion's western facade is one of the most important facades as it forms a canvas or backdrop for the basketball and netball courts and perceived from the main access road. The facade frames a walkway and protects the spectators watching football from the harsh late afternoon sun.

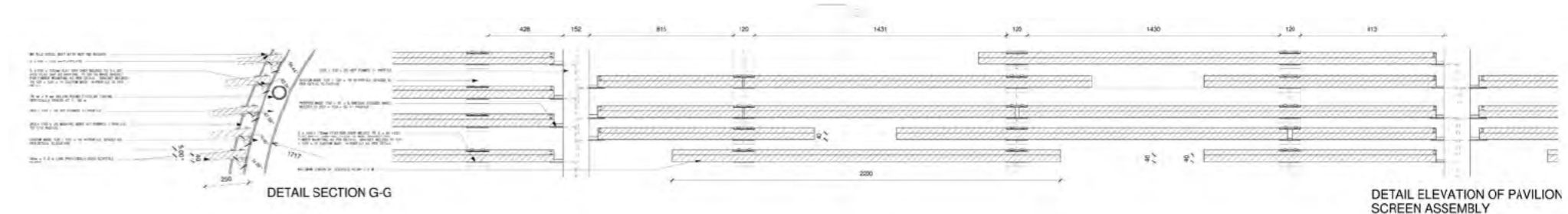
The facade is constructed from reused saligna scaffolding planks. The scaffold planks are essentially fixed to shop bent I- beams that transform from wall to roof as they stretch from the concrete footing next to the pedestrian walkway to be supported by the composite timber and steel columns. The scaffold planks are honest in their materiality and represent the community

involvement in the process of construction. The scaffold planks is also a strategy to get organization involved in funding and sponsorships, as scaffold planks can be sponsored by companies and individuals to ultimately represent an integrated whole. The facade is essentially a woven timber blanket that abruptly pauses at regular intervals to reveal the curving structural steel column that graciously transforms from column to truss.

The aging character of timber is seen as opportunity rather than constraint as it provides opportunities for employment and skill development.



fig 173. Section Elevation.



DETAIL ELEVATION OF PAVILION SCREEN ASSEMBLY

2. SCREEN DETAIL

fig 174a. Screen Detail.

The screen faces West and is designed to offer sun shading for the spectators in the late afternoon. The screen is designed to allow the sun to partially filter through from 17:00 pm in summer afternoons when the temperature drops.

As seen in fig 174a. the treated scaffold planks are angled at 5 degrees to achieve the desired solar aspect and to guide rain water away from the walkway under.



fig 174b. Detail of timber Scaffold screen.

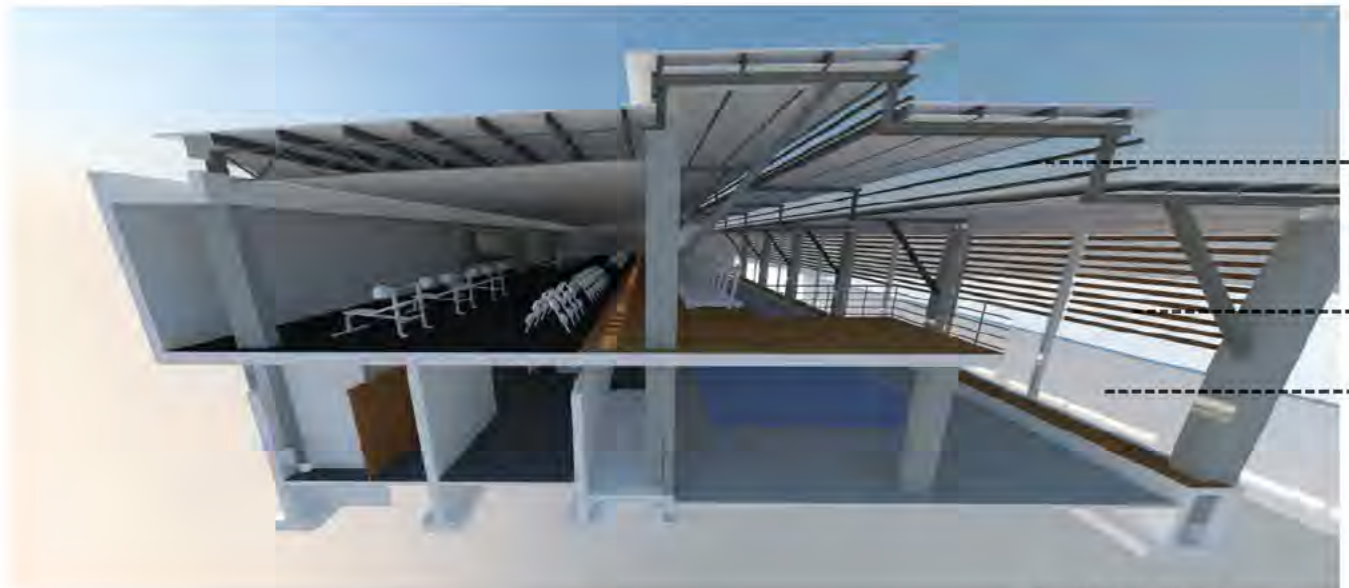


fig 175. Section through gymnasium

The Gymnasium Facade

- 1. Light strips**
Poly carbonate IBR sheeting are used with the stepped roofs to bring southern light into the building. The poly carbonate sheeting is cheaper than glass and has an excellent strength to weight ratio.
- 2. Screening.**
Screening on the South of the building with turned 100mm diameter gumpoles. The screening sits in front of the glass curtain wall to protect it from impact and to give the facade a warm aesthetic appeal that responds to context and the regional identity.
- 3. Curtain wall**
The curtain wall is framed with aluminium mullions. Aluminium is use for its longevity and strength to weight ratio. The aluminium framed curtain walls are built in between concrete columns.

SYSTEMS WATER

Rain water harvesting

Rainwater are to be collected from roofs by means of gutters and rain water down pipes and to be stored for:

- 1) UV purification and Suppling fresh drinking water for athlete's.**
- 2) Irrigation of lawns and gardens.**

To calculate required rainwater storage capacity, we need the following info: 1. Run-off collection area

2. Daily water requirement
3. Rain statistics – from <http://www.weathersa.co.za/Publications/PublicationList.jsp>

Formula: $0.8 \text{ (avg rainfall for the month- B) } \times \text{Collection area}$

where: 0,8= efficiency factor

B= 2mm= loss factors



After careful spacial, monetary and aesthetic consideration, provision has been made for the storage of 40 000 L of rain water to surplus the existing demand on municipal water.



Provision has been made for the sub surface storage of 80 000 L of rain water to surplus the existing demand on municipal water to irrigate park lawns.

Calculation for water storage to irrugate lawned terraces on Northern edge of sportsfield:

PRECIPITATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTALS	HIGHS	LOWS
DAYS	136	75	82	51	13	7	3	6	22	71	98	11	674		
m	0,136	0,075	0,082	0,051	0,013	0,007	0,003	0,006	0,022	0,071	0,098	0,11	0,674		
AREA (m ²)	840														
LITRES (m ³)	114,24	63	68,88	42,84	10,92	5,88	2,52	5,04	18,48	59,64	82,32	92,4	566,16		
HARVEST (m ³)	102,816	56,7	61,992	38,556	9,828	5,292	2,268	4,536	16,632	53,676	74,088	83,16	509,544		21,924
MONTHLY USAGE (m ³)	42	42	42	42	42	42	42	42	42	42	42	42	42		168
SURPLUS/DEFICIT	60,816	75,516	95,508	92,064	59,892	23,184	-16,548	-54,012	-79,38	-67,704	-35,616	5,544			
HOARDING	60,816	14,7	19,992	-3,444	-32,172	-36,708	-39,732	-37,464	-25,368	11,676	32,088	41,16			146,076

fig 176. Rain water calculation results 1.

Calculation for water storage to irrugate recreational park:

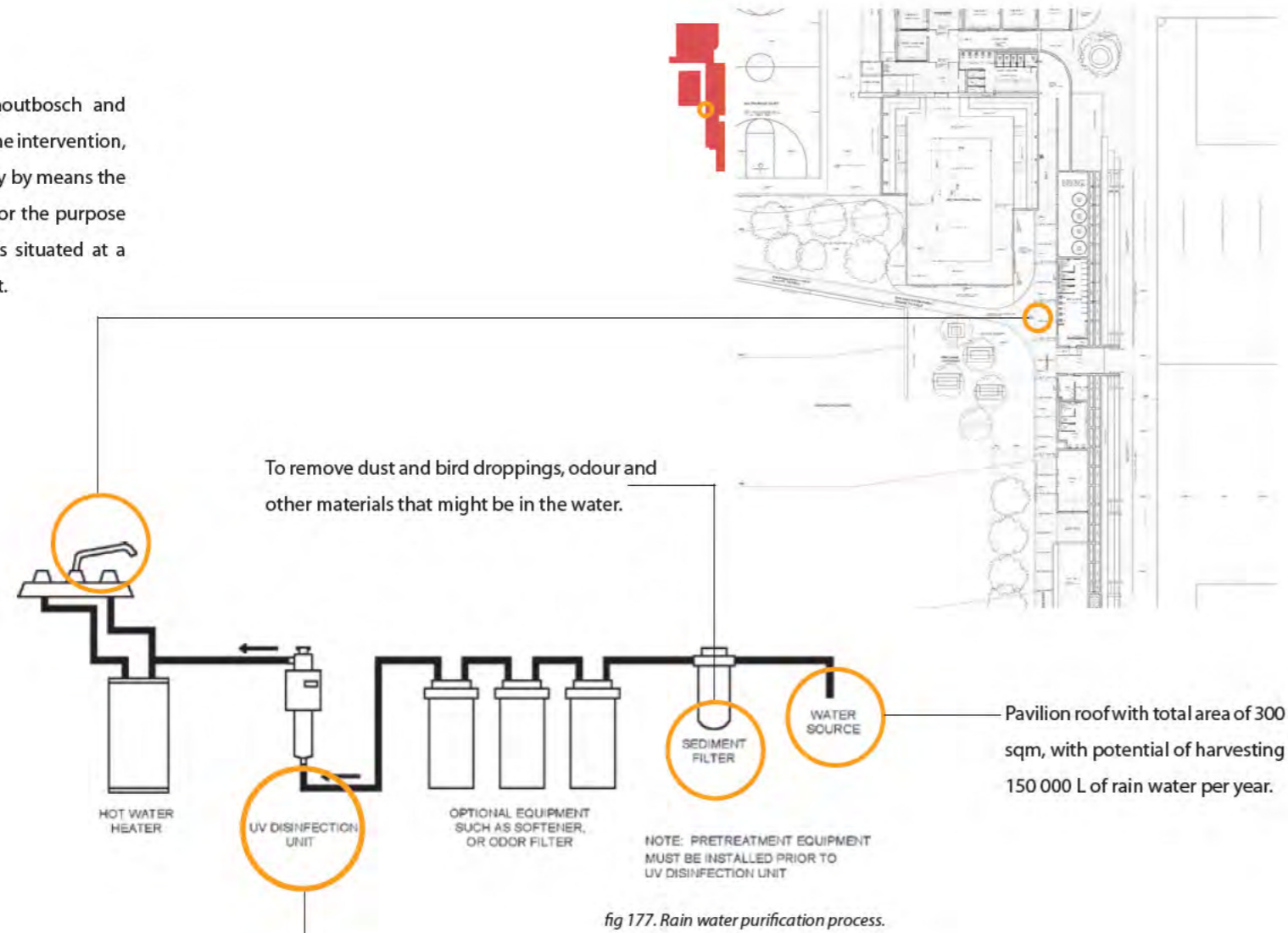
AREA (m ²)													TOTALS	HIGHS	LOWS
1479															
LITRES (m ³)	201,144	110,925	121,278	75,429	19,227	10,353	4,437	8,874	32,538	105,009	144,942	162,69	996,846		
HARVEST (m ³)	181,0296	99,8325	109,1502	67,8861	17,3043	9,3177	3,9933	7,9866	29,2842	94,5081	130,4478	146,421	897,1614		38,6019
MONTHLY USAGE (m ³)	100	100	100	100	100	100	100	100	100	100	100	100	100		400
SURPLUS/DEFICIT	81,0296	80,8621	90,0123	57,8984	-24,7973	-115,4796	-211,4863	-303,4997	-374,2155	-379,7074	-349,2596	-302,8386			
HOARDING	81,0296	-0,1675	9,1502	-32,1139	-82,6957	-90,6823	-96,0067	-92,0134	-70,7158	-5,4919	30,4478	46,421			361,3981

fig 176b. Rain water calculation results 2.

Rain water purification

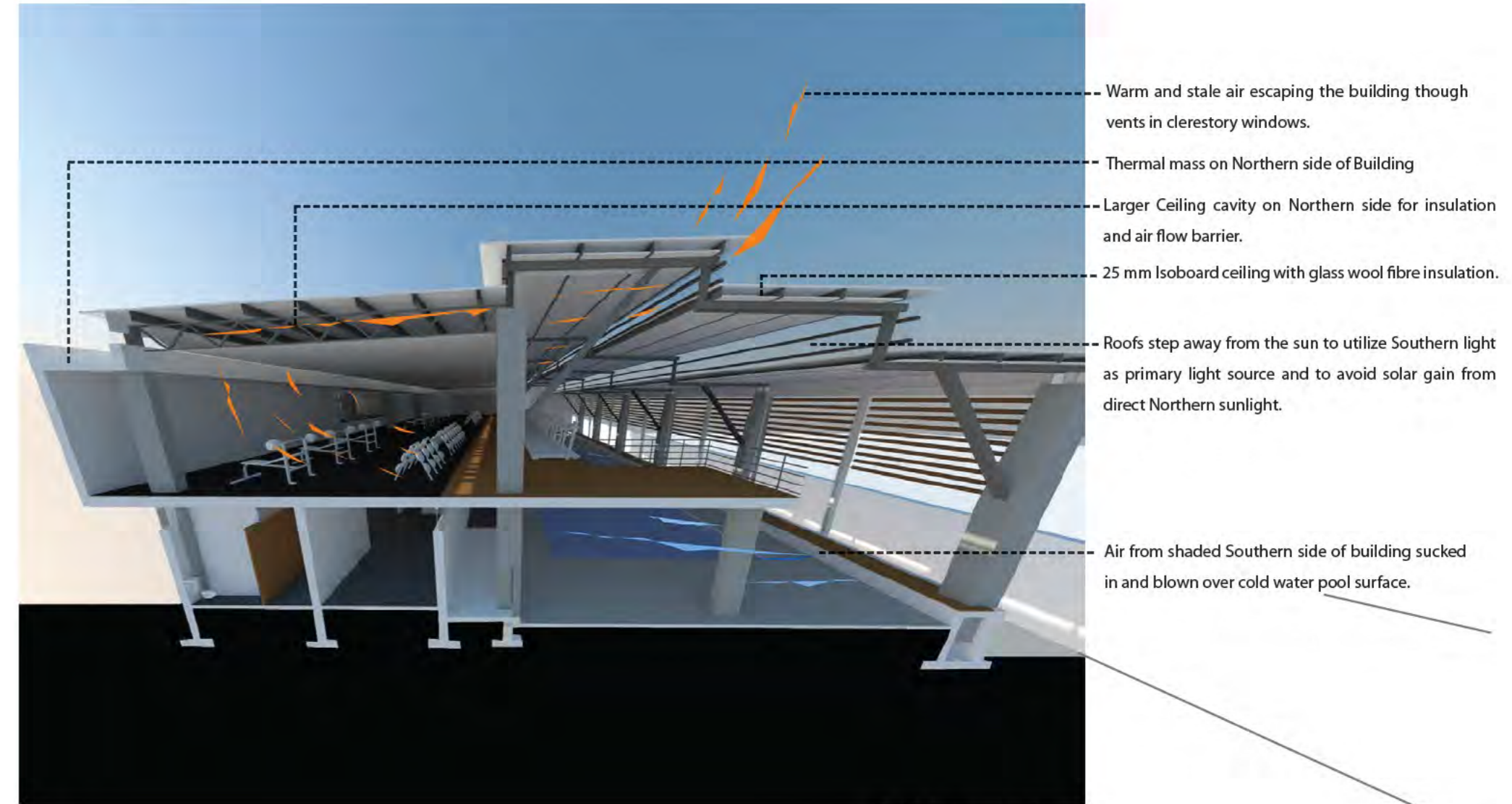
Intent - Celebrating Water

Given the problem of division within Olievenhoutbosch and nutrition as one of the fundamental generators of the intervention, it is the attempt of the author to create community by means the visual act of harvesting and purifying rain water for the purpose of drinking. Furthermore, the drinking fountain is situated at a crossroads where people meet, gather and interact.



UV disinfection or the reverse osmosis process is process were harmful bacteria within water is rendered harmless by means of exposure to UV light.

COOLING



COOLING

Trees provide shade all along the promenade.

Warm and moist air is sucked out by low voltage mechanical extractor fans above the shower area

The gabion is wide enough to prevent rain water penetration, but maintains the moisture within the wall. The cavities within the gabion wall allow for air penetration that cools over the moist stones

Air from the South is cooled as it passes over the pool

The sun screen protects the spectators from late afternoon sun and provides cover for the pedestrians using the walkway under. see figure 174b.

Trees provide shade for pregame gathering areas.

The Site as System

The illustration below illustrates a series of systems that compliment one another to cool the interior of the building in a natural and sustainable manner. The point of departure is to use the site as a system to minimize intricate, expensive and unsustainable air conditioning appliances.

The prevailing wind direction in Olievenhoutbosch is from the South. This brings cooler, moist air from the stream below up toward the site. In both buildings cool air is introduced from the Southern side of the building as it is generally more effective due to the building's shadow. As air moves over the cold swimming pool water, the temperature decreases. For further cooling, air travels through a gabion wall that retains moisture between the stones and cools the air as it passes through.

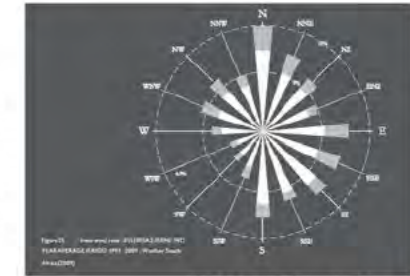


fig 178. Windrose for Irene.



The heat and moisture build up within the locker rooms escape by means of natural cross ventilation through openable windows and voltage extractor vents above the shower area.

Trees and light weight shading elements with low embodied energy provide shade over walkways and seating areas.

The predominant Southern breeze carries cool air from the wetland up toward the buildings.

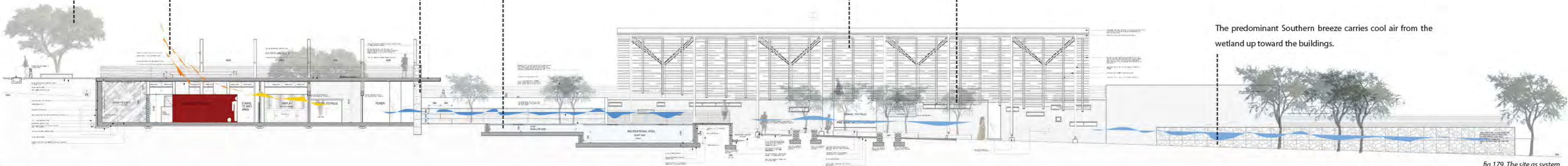


fig 179. The site as system.

SEWAGE

All sewage to be treated with a septic tank system not closer than 12 m from source.

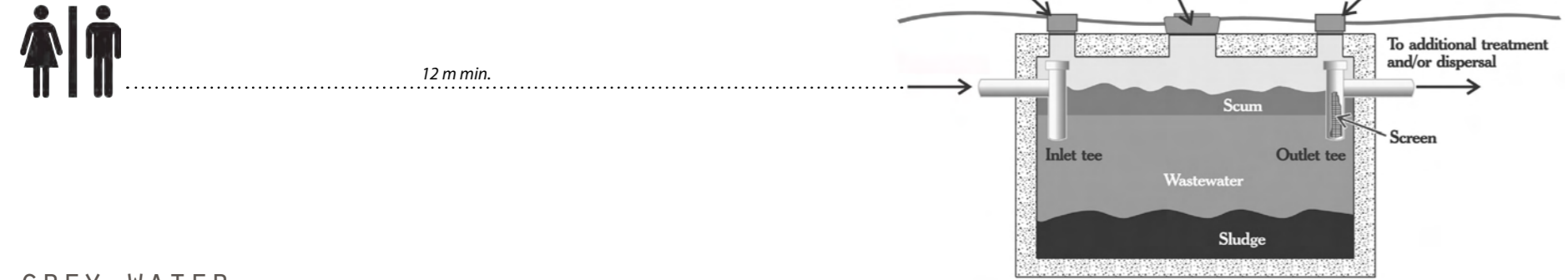


fig 180. Septic tank system. (Google images)

GREY WATER

All grey water from hand wash basins will be used for watering lawns and gardens. The soap in bathrooms and locker rooms are to comply with biodegradable standards.

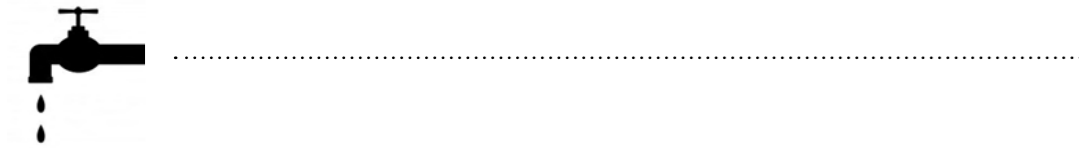


fig 181. Garden resQ. (Google images)

WATER CLOSETS

The Lecico Reveira is a standard water-saving toilet, using just 4.5 litres for a full flush and 2.6 litres for a half flush. The Lecico Reveira water closet available at Plumlink at R1195. The saving compared to a 9 l toilet per 5 users will save R625 every year at current Tshwane water rates.



fig 182. Lecico Reveira water closet. (Google Images)

VEGETATION

Given the nature of the site, vegetation is included as a designed system that responds to environmental issues. Strategies are used that promote local bird life, require minimal irrigation and regulates cooling.

XERISCAPING



Xerophytes are plants that require very little water to survive and still have high aesthetic appeal. Xerophytes often have thorns that can be used as natural barriers

TREES



Currently, there are no trees on site. Ingenious trees are to be planted that represent the regional identity of the highveld, provide shade and motivate the habitation of local bird life.



fig 183a. Existing Grassland



fig 183. Aloe. (Google Images)



fig 184. Fever tree "Koorsboom"



fig 185. Acacia Erioloba "Kameeldoringboom"



fig 186. Ziziphus Mucronata "Blinkblaar Wag n Bietjie."



Fig 187. Acacia Sieberiana "Papierbas doring boom"

BASEMENT CONSTRUCTION_

Tanking

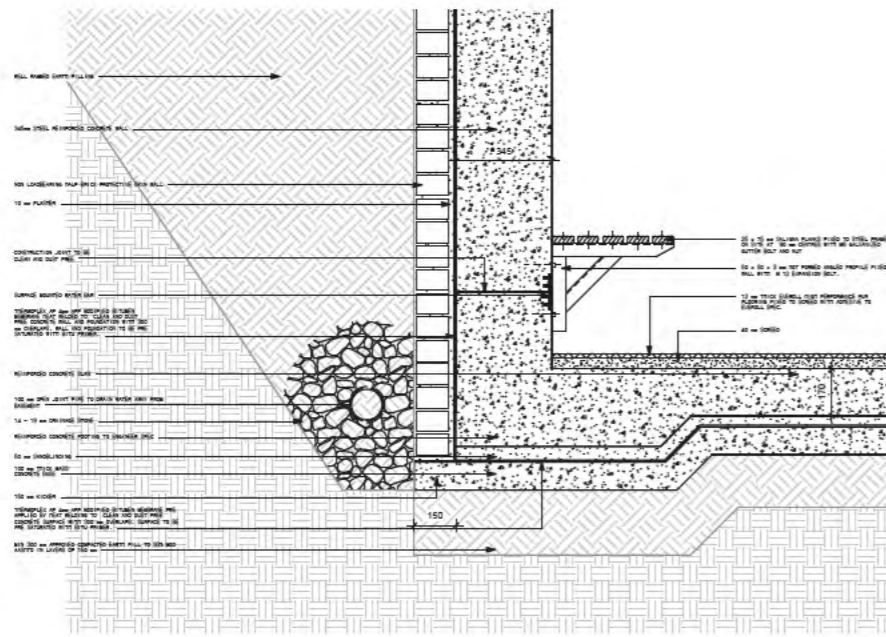


fig 188. Tanking detail.

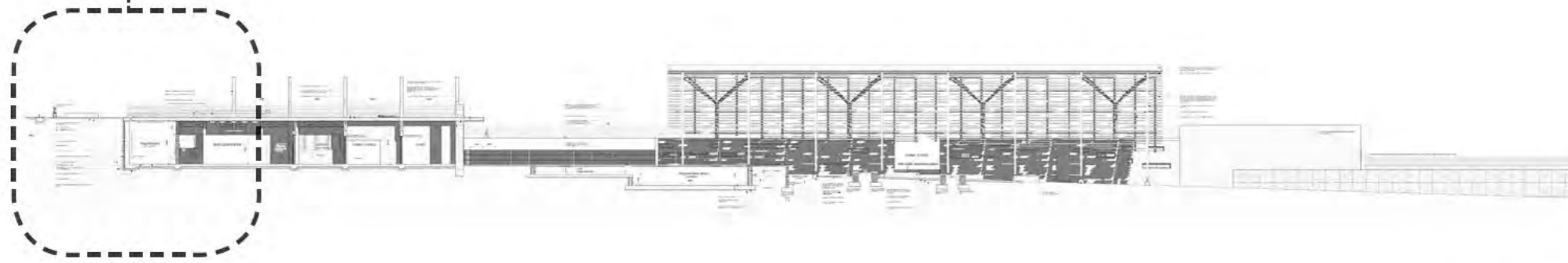


Fig 189. Section elevation.

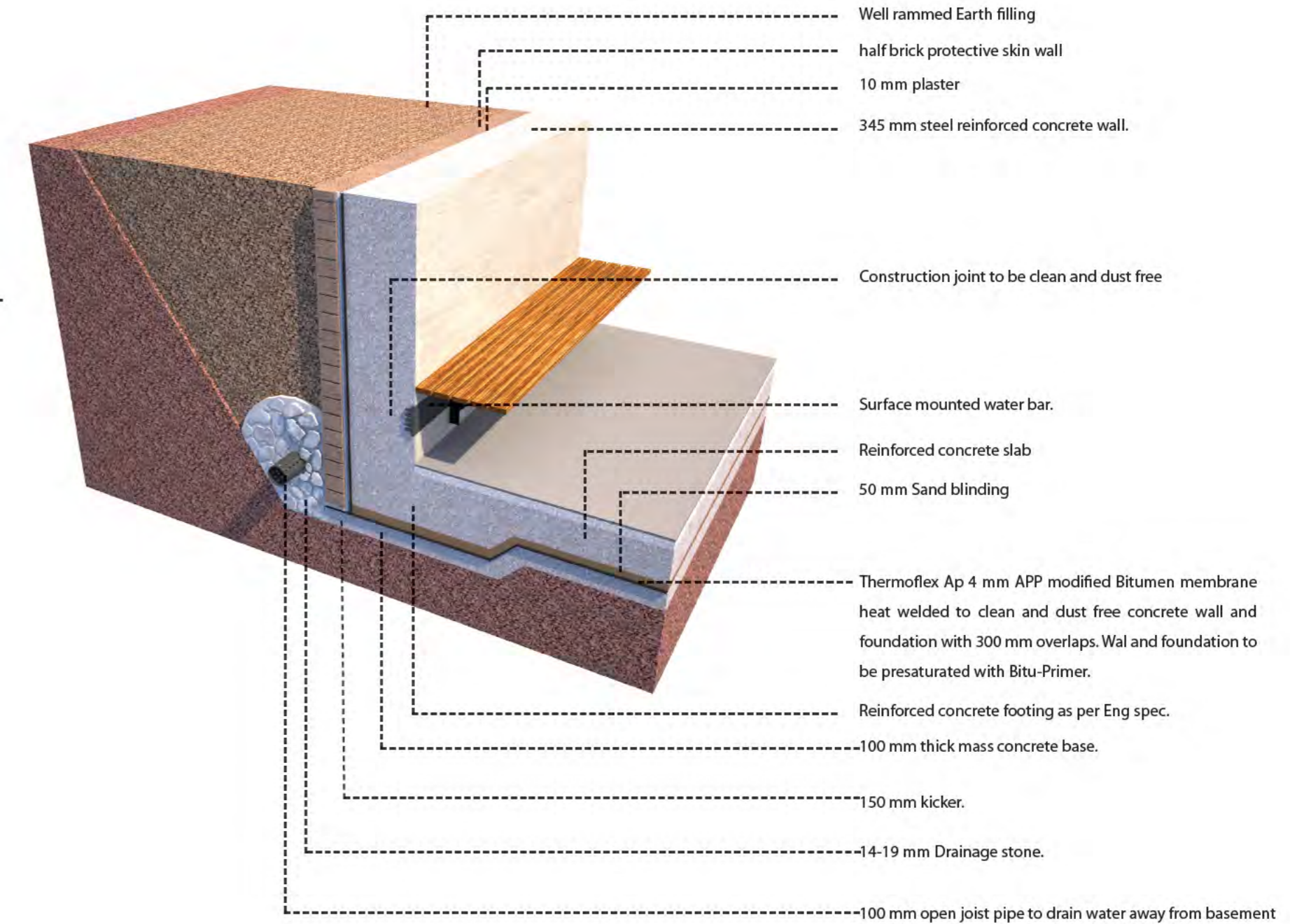


fig 190. 3D of Tanking detail.



LYF[TAAL]

SPORT FOR DEVELOPMENT COMMUNITY CENTRE- OLIEVENHOUTBOSCH

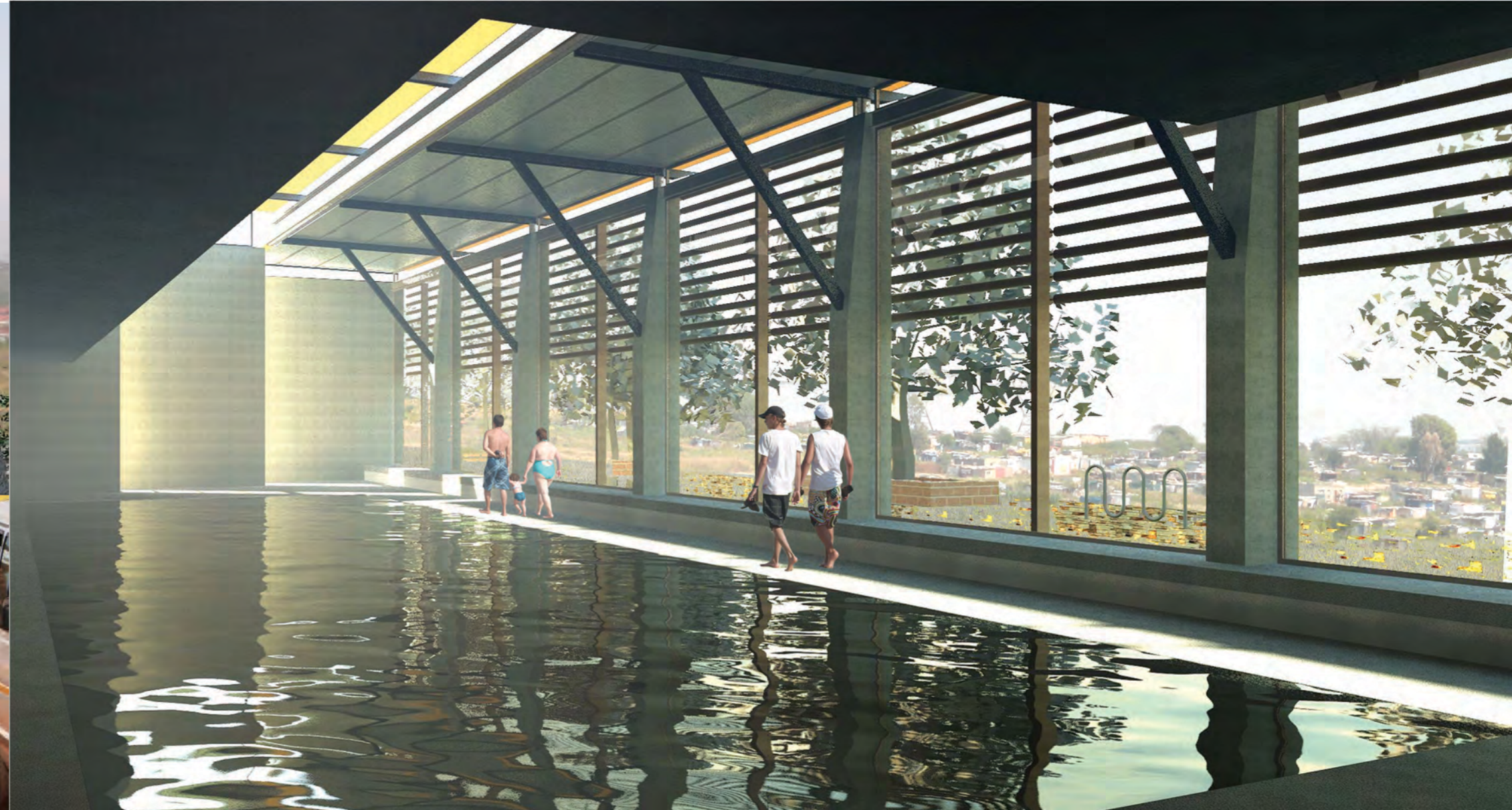
FINAL DRAWINGS

06



LYF[TAAL]

SPORT FOR DEVELOPMENT COMMUNITY CENTRE- OLIEVENHOUTBOSCH



LYF[TAAL]

SPORT FOR DEVELOPEMENT COMMUNITY CENTRE- OLIEVENHOUTBOSCH

SITE PLAN

Not to scale



PROPOSED FUTURE RESIDENTIAL DEVELOPMENT

COMMUNITY NODE

PROPOSED FUTURE RESIDENTIAL DEVELOPMENT

fig 195. Site Plan

LOWER FLOOR PLAN

Not to scale

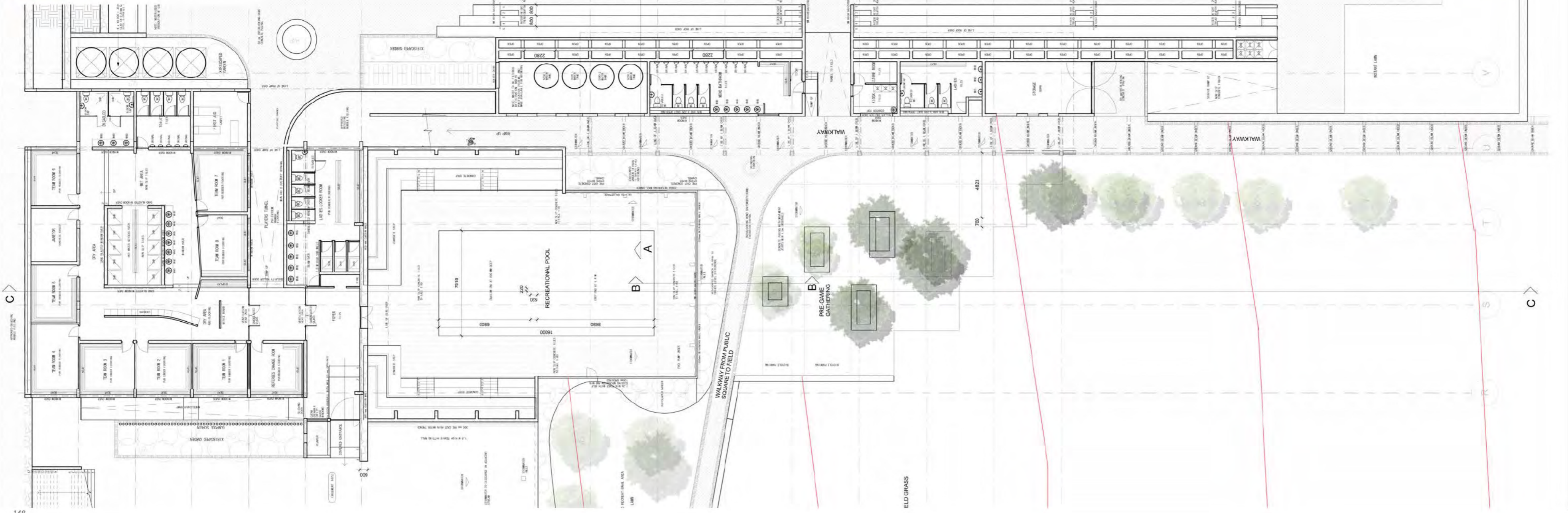


fig 196. Lower Floor Plan

GROUND FLOOR PLAN

Not to scale

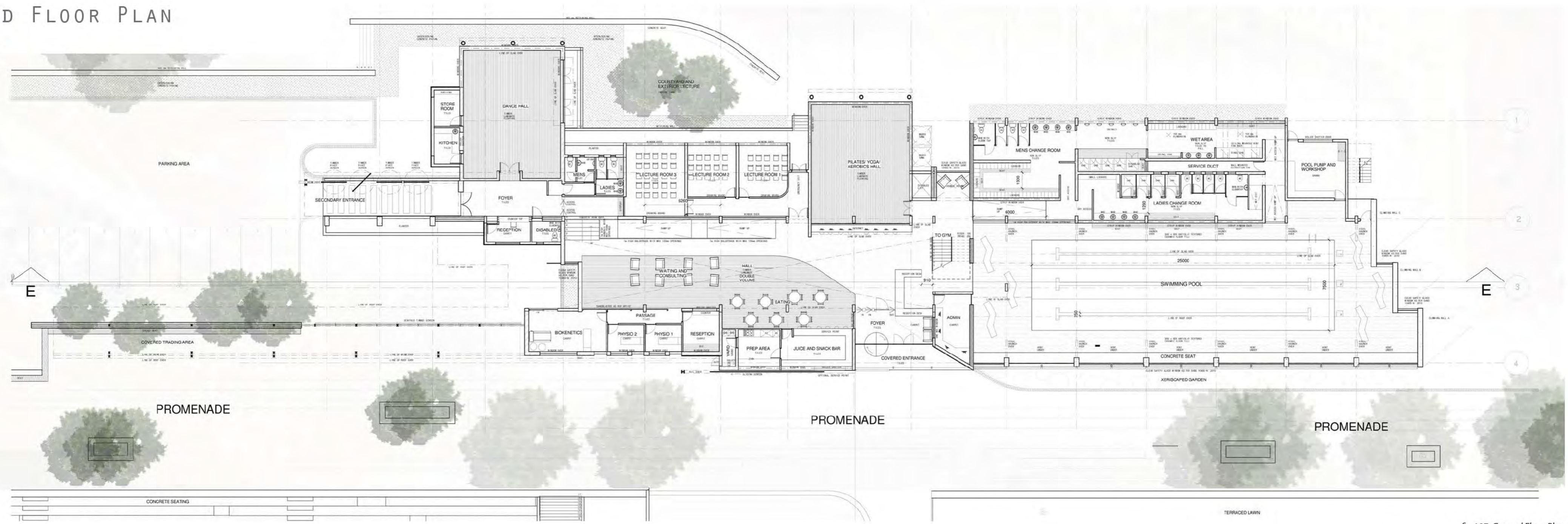


fig 197. Ground Floor Plan

FIRST FLOOR PLAN

Not to scale

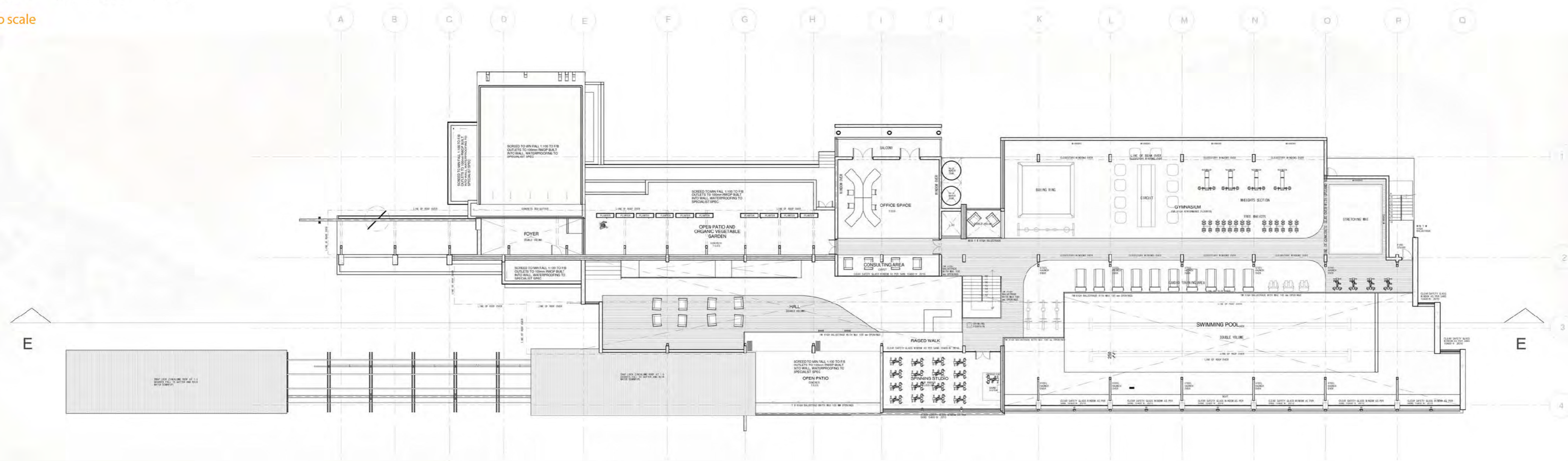
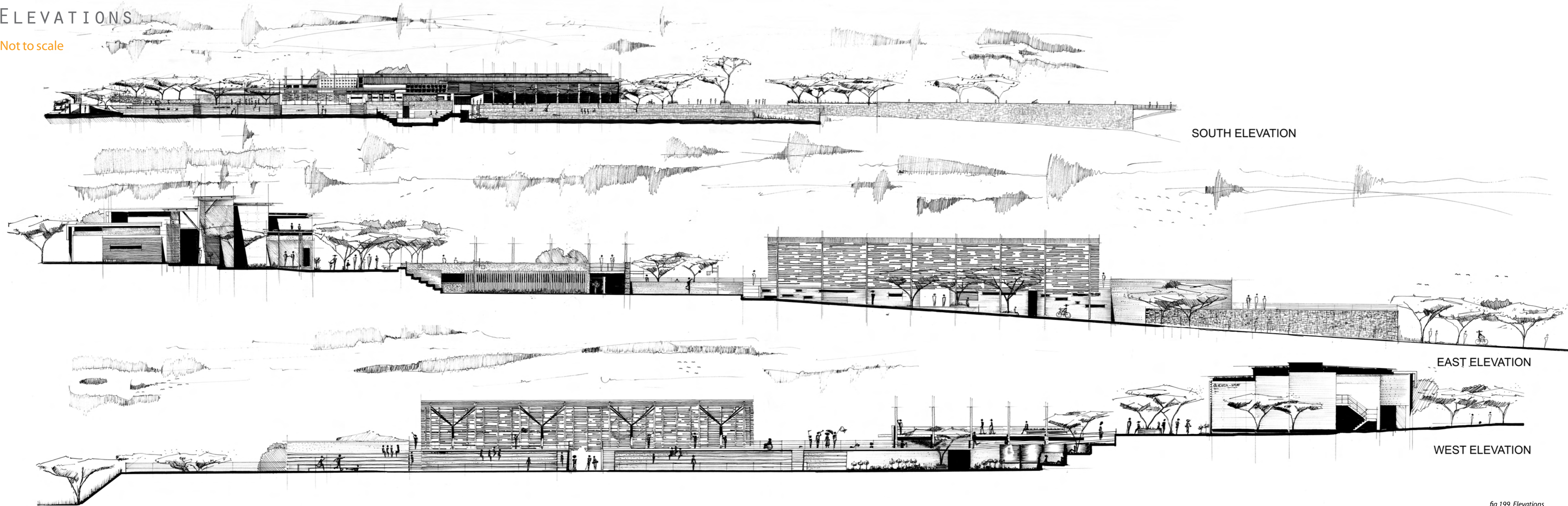


fig 198. First Floor Plan

ELEVATIONS

Not to scale



SOUTH ELEVATION

EAST ELEVATION

WEST ELEVATION

fig 199. Elevations

DETAIL SECTION C-C

Not to scale

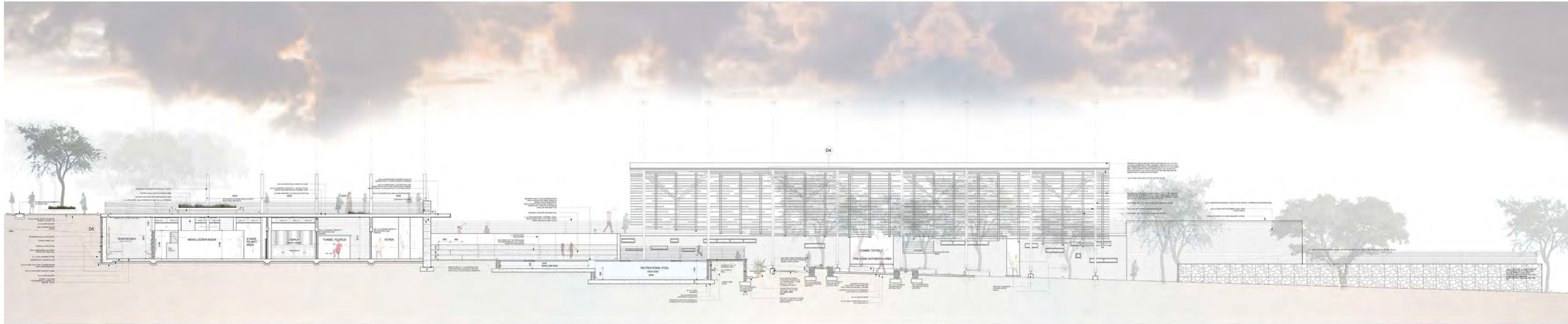


fig 201. Section C-C

DETAIL SECTION D-D

Not to scale

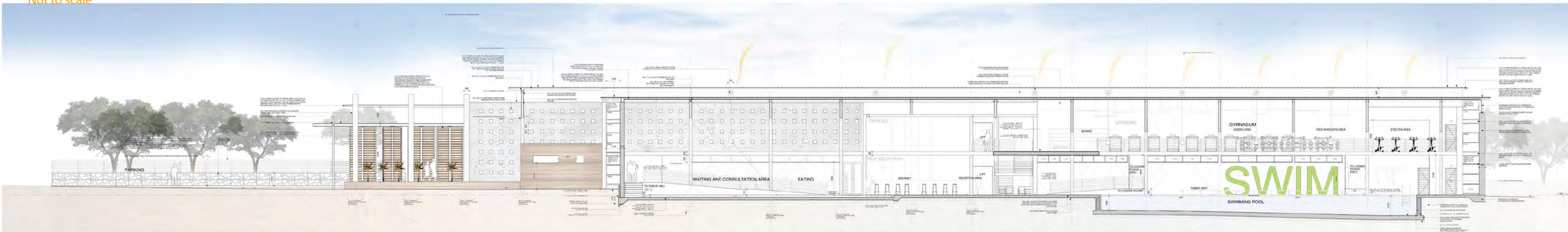


fig 202. Section D-D

ROOF DETAILS

Not to scale

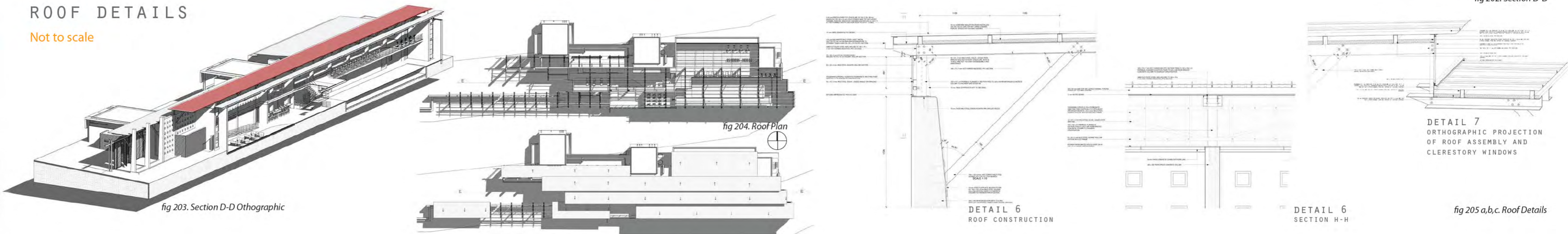


fig 203. Section D-D Orthographic

fig 204. Roof Plan

DETAIL 6
ROOF CONSTRUCTION

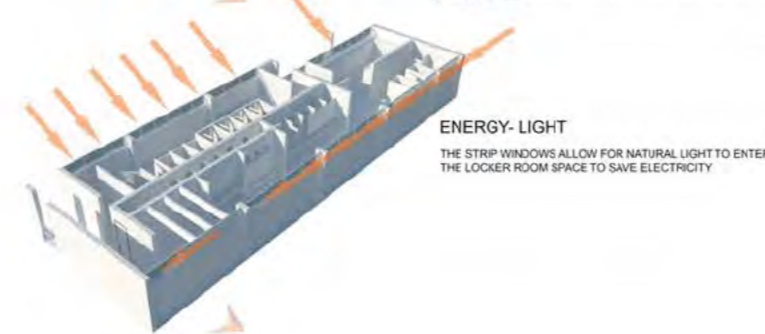
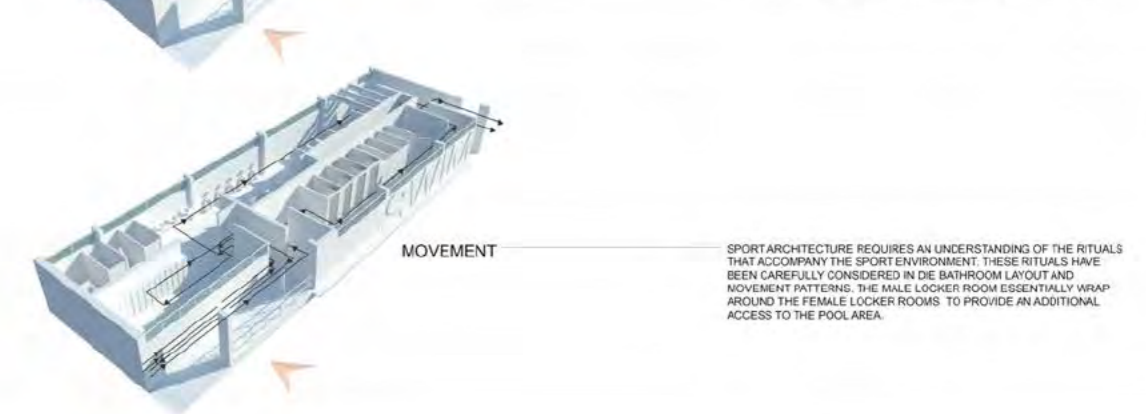
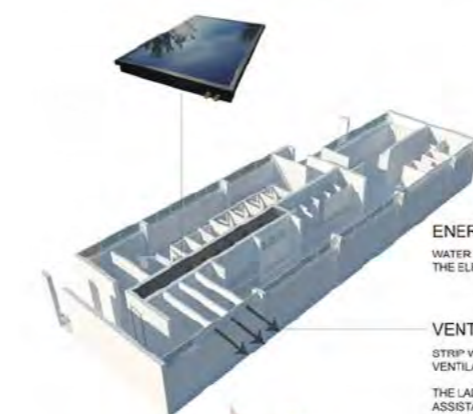
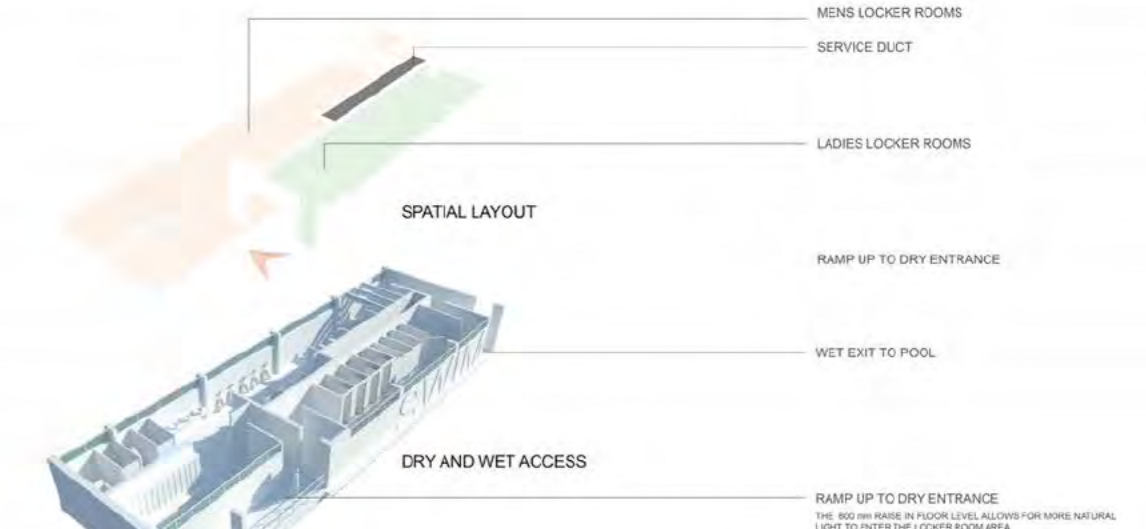
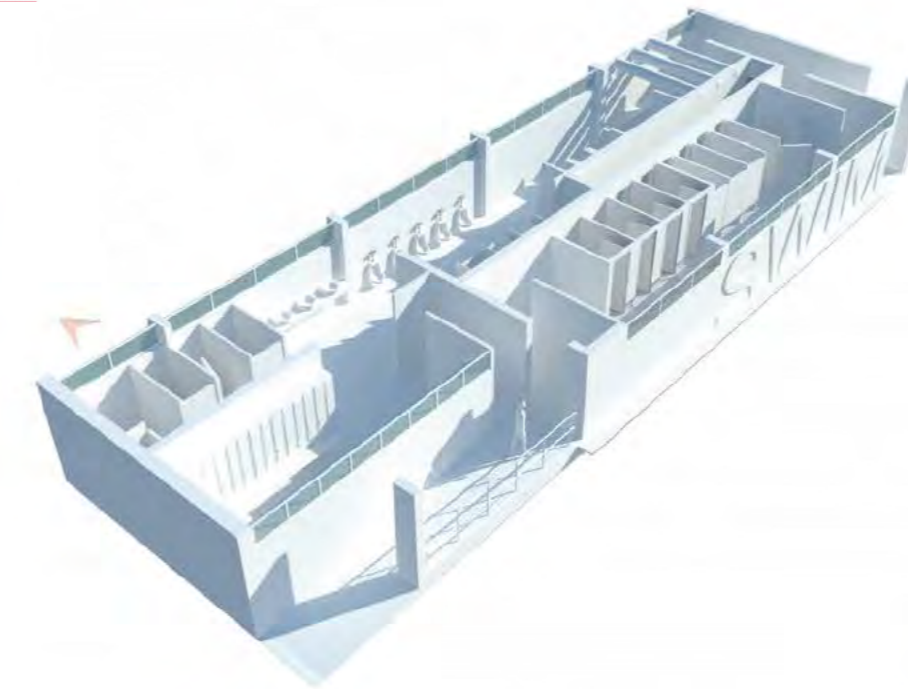
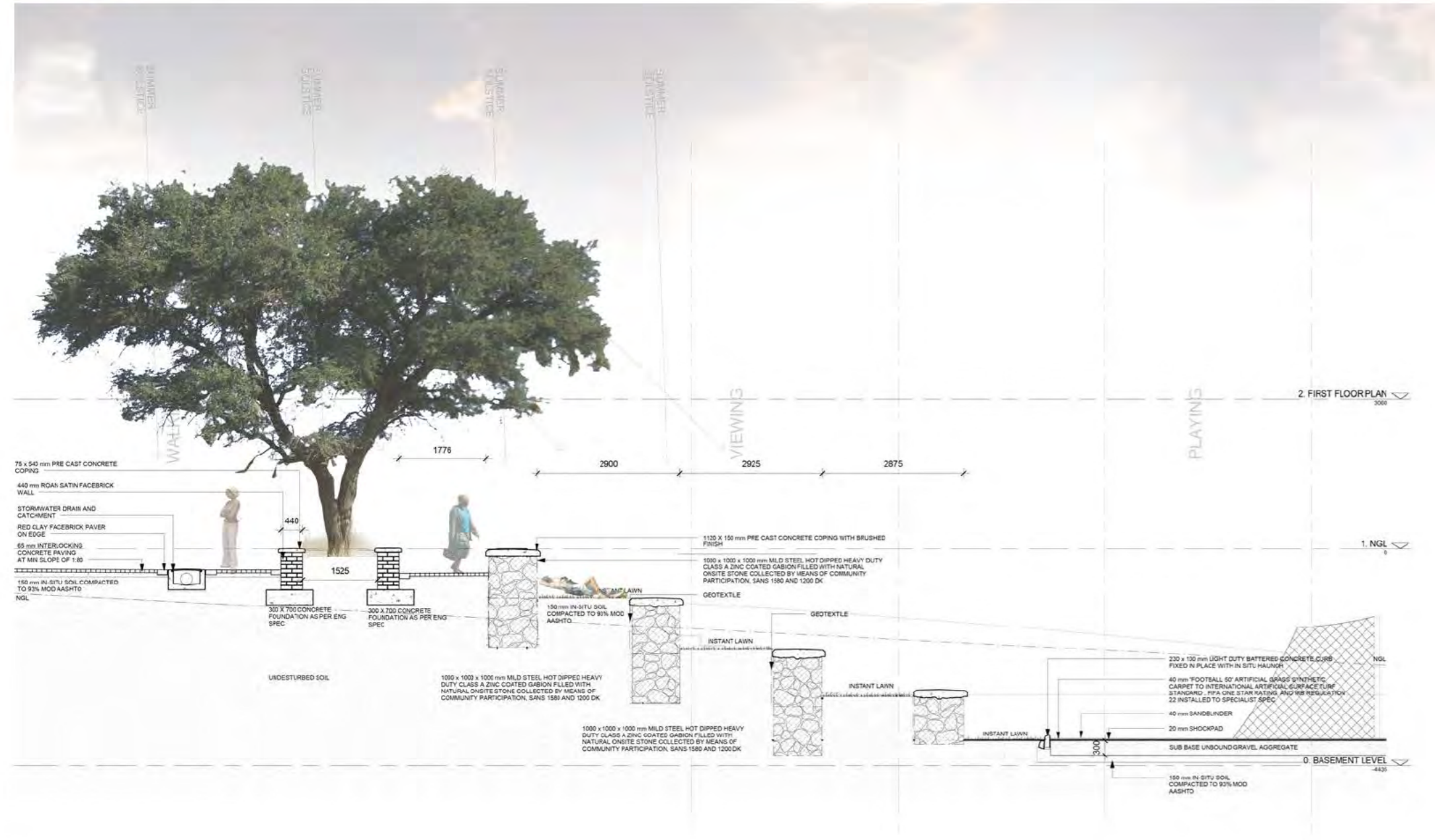
DETAIL 6
SECTION H-H

fig 205 a,b,c. Roof Details

DETAIL 7
ORTHOGRAPHIC PROJECTION
OF ROOF ASSEMBLY AND
CLERESTORY WINDOWS

DETAIL SECTION E-E

Not to scale



GYM LOCKER ROOMS

Isolated view
Not to scale

fig 207. Bathroom Isolated

SCALED MODEL

The Process



SCALED MODEL

Final



fig 211. Detail Model.

CONCLUSION 07

CONCLUSION__

The aim of this dissertation was to amalgamate the potential of architecture and sport and to investigate the reconciliatory benefits of this duality within society.

Through the study of theories it became evident that certain architectural principles could augment on the existing success of sport as tool for peace building. However the author stresses the importance of a thorough understanding of the context, site and local community. This encompasses both the tangible (lyf) and intangible (taal) aspects, as explained in the Streeks[Taal] and Werf[Taal] chapters.

These investigations revealed certain patterns that provide opportunity for architectural interpretation and; given the solitary nature with regard to existing built structure; is of cardinal importance in the design process.

Concerning township architecture and the green field state of the site, the importance of the urban design cannot be understated. The urban design provides the architect with the opportunity to design a building that serves as a catalyst for a future condition as well as the potential for a wider range of influence.

The architecture, governed by the five hyperterms personifies the intentions of sport as language that transcends racial and cultural barriers. The architecture enables the bridging of cultural and physical barriers. This ranges from physical bridging on urban scale to the use of material bridging in detail design and ultimately finds the beauty in the imperfection.

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— 08

LIST OF SOURCES

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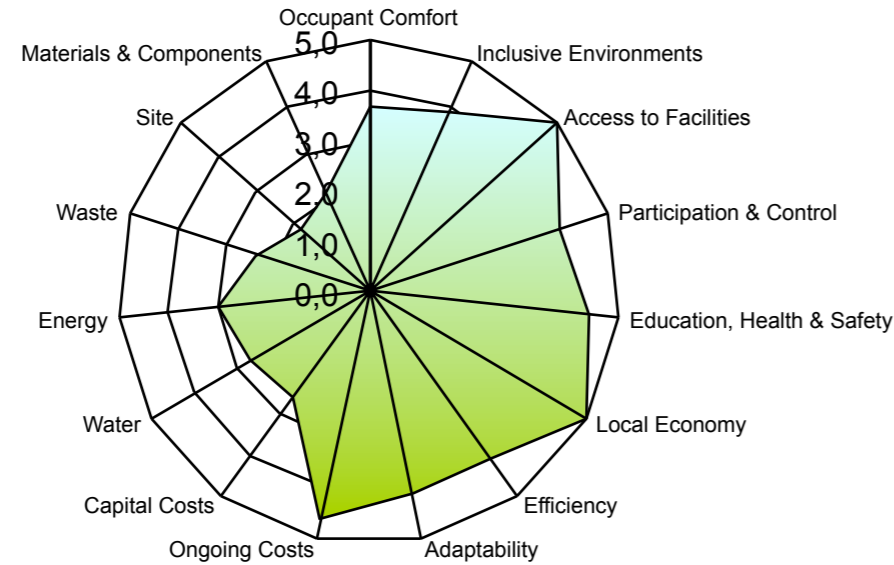
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SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT- P) V1

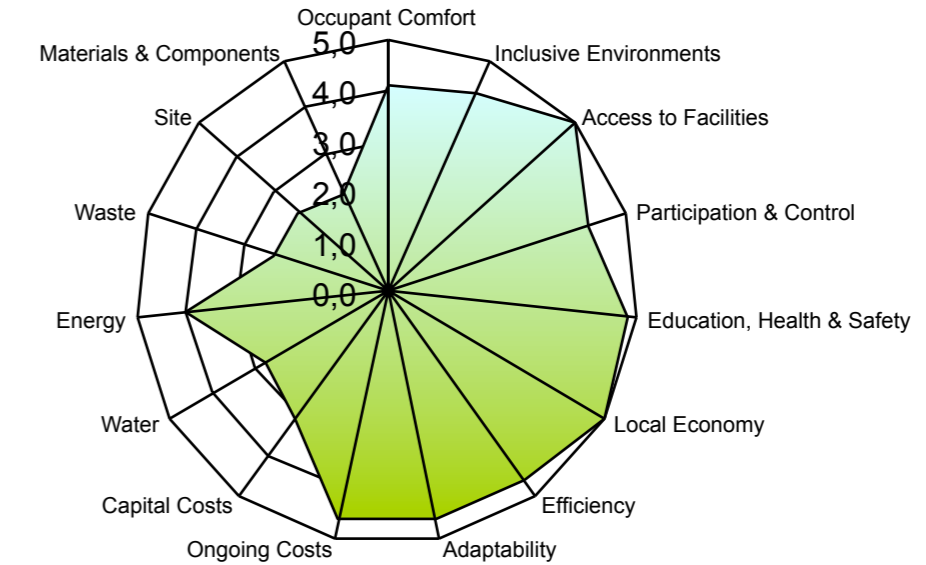
PROJECT	ASSESSMENT
Project title: Olievenhoutbosch Sport for development centre	Date: 02-Aug
Location: Pretoria CBD	Undertaker Francois van Wyk
Building type (≠ Residential)	Company / organisation: Pvt
Internal area (m2):	Telephone: 824792586 Fax:
Number of users:	Email: franvwyk@gmail.com
Building life cycle stage (specify): Design	



Social	4,2	Economic	4,1	Environmental	2,4
Overall		3,6			

SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT- P) V1

PROJECT	ASSESSMENT
Project title: Olievenhoutbosch Sport for development centre	Date: 25 Okt 2012
Location: Pretoria CBD	Undertaker Francois van Wyk
Building type (≠ Residential)	Company / organisation: Pvt
Internal area (m2):	Telephone: 824792586 Fax:
Number of users:	Email: franvwyk@gmail.com
Building life cycle stage (specify): Design	



Social	4,5	Economic	4,4	Environmental	2,7
Overall		3,9			