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Connecting the digitally disadvantaged - the digital bridge: a model for the enrichment and empowerment of the people of Alexandra

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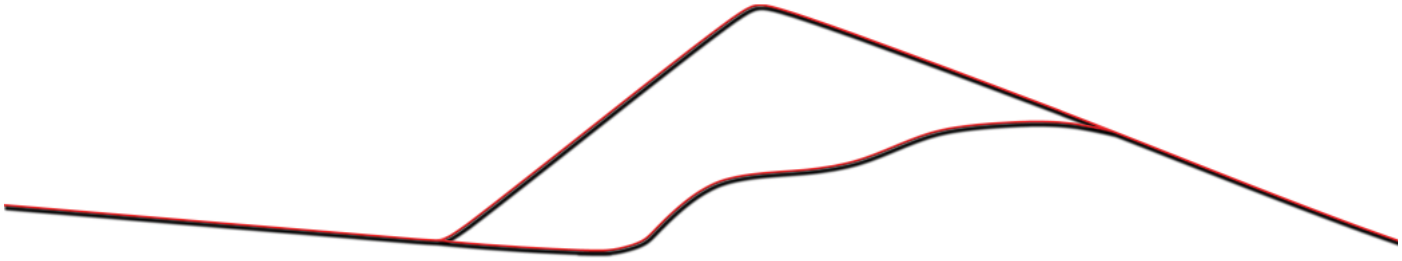
ARPL 7003

Connecting the Digitally Disadvantaged _the Digital Bridge

a model for the enrichment and empowerment of the people of alexandra

University of the Witwatersrand, School of Architecture and Planning

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“There is no better time for a centre such as this one to be built for the previously disadvantaged. I think it’s a brilliant idea.”

Survey respondent (Alexandra resident)

A design project submitted in partial fulfilment for the degree of Master of Architecture (Professional), to the Faculty of the Built Environment, Department of Architecture, at the University of the Witwatersrand.

I, Davide Slaviero am a student registered for the course Master of Architecture (Professional) in the year 2010. I hearby declare the following:

I declare that this thesis is my own unaided work and I have given full acknowledgment of the sources used.

_____

Davide Slaviero

_____

Date



Image 1

Dedications:

My parents:
Lucy and Luigi, for your unconditional support throughout my studies. It has been a long road but with your guidance and love you have provided me with the chance to complete my dream. I will forever be grateful for your patience, persistence and kindness. Thank you for all the sacrifices you have made for me.
I love you.

Alexandra:
My love, thank you for helping me realise what can be achieved with dedication and hard work. The little light at the end of the tunnel has only got bigger and brighter with your incredible belief that this thesis would be made possible. In demanding times you have always been there and encouraged me to see past them. Thank you for taking every step with me and for being the most amazing person you are.
I love you.

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Kirsten, for your support that you have extended to me during the course of the thesis. You were very tolerant and determined to see me do my best. Your belief in me helped me through times when I felt lost. I thank you for your hard work and guidance.

My family:
For always believing in me.

Marguerite:
For your time and giving valuable advice when I was most in need.

Research participants:
For your participation and co-operation.

Finally I would like to thank all those who have helped, encouraged and been supportive of me during my post graduate studies.



Image 2

Abstract

‘The rich are getting richer and the poor are getting poorer’ is a universal saying which has become a cliché in today’s language. And yet there is some stark truth in this saying. Economists and politicians have proposed countless solutions to counter this widening gap (often at odds with each other), but one course of action appears to garner universal favour, viz. education.

EDUCATION EQUALS A BRIGHTER FUTURE.

Countries of the far east (Singapore, Malaysia, Japan, South Korea and lately India and China) which 50 years ago were ranked amongst the poorest world economies, all embarked on intensive educational drives specifically aimed at moving their economies from the smoke-stack type economy into the electronic (read digital) economy. The results speak for themselves when one looks at the economic results and standing of these countries in the world economy today.

South Africa remains a country beset with an educational legacy that leaves much to be desired. The vast majority of the older population have minimal educational levels, often inadequate to cope with the modern world’s ways - which are increasingly relying on technology. The basic process of opening a bank account requires a familiarity with a keyboard – even a simplified one. For the rural person seeing this for the first time in an unfamiliar environment this represents an unknown quantity equating to fear and mistrust. The legacy of apartheid has also ensured that the

majority of the inadequately educated populus are concentrated in the so-called townships such as Alexandra, Soweto, Kathelong etc.

Clearly, if South Africa is to be part of the technological age, it urgently needs to get onboard this train. The question then arises: How can this be done?

This thesis recognises that there is a technological gap, defined as the 'digital divide', which characterises the disadvantaged (inadequately educated and consequently poorer) sector of the population. This divide, unless addressed, increasingly limits the opportunities for progress and development of such communities. The intention of this thesis therefore is to explore and propose how best can architecture contribute towards a solution to closing this 'digital divide'.

This will be done by exploring the opportunities which can be accessed through a high tech skills platform equipped with multi media tools such as audio visual, interactive media etc; which will enable the user the opportunity to become acquainted and interact with the digital medium. The high tech technology and the enabling environment targeted will be that necessary to bridge the digital divide.

The proposed enabling centre is visualised to constitute a world class media/learning platform aimed specifically as a vehicle and means for people to use for their personal educational growth, enrichment and empowerment. It will be a platform that offers the opportunities for improving one's skills and essentially becoming a learning centre for the 'digitally disadvantaged' citizen.

The site chosen for this thesis is located in Wynberg which borders on the township of Alexandra, the latter which is situated in The Greater Johannesburg region of Gauteng. Alexandra was proclaimed a 'native' township 98 years ago and encompasses a concentrated population hub that can take advantage of the proposed facility. Following its proclamation, developments such as housing, services, schools etc. have taken place; however, never has a multi-media/learning centre been developed or been part of the plans with the specific intent to close the digital divide. One can argue that cell phones provide internet for the people and business training facilities have been erected but basic skills development with a focus on digital competency remains lacking in Alexandra.


Sandton
Sandton
Athol Gardens
Park
M1

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Site Wynberg Alexandra Ex. 32 Alexandra Ex. 01

eway

In his book, "Long Walk To Freedom", former president Mandela describes what he observed about Alexandra almost fifty years ago. To quote;

The Township's "atmosphere was alive, its spirit adventurous, its people resourceful...it could fairly be described as a slum, living testimony to the neglect of the authorities. The roads were unpaved and dirty, and filled with hungry, undernourished children scampering around half-naked...a single water tap served several houses. Pools of stinking, stagnant water full of maggots collected by the side of the road".

01_Proposition



1.1 Introduction

The world is moving forward digitally at an ever increasing rate. Accessibility to digital infrastructure and the skills how to use it, determines - amongst other things – people's position in the job market; opportunities for personal advancement – educational and otherwise; possibilities for economic growth and access to sources of information hereto unknown to previous generations.

"Digitalisation is gathering pace and is likely to sweep aside any organisation that cannot respond to this digital 'tsunami'..." (Marshall,I. Business & Decision. www.blog.taragana.com)

Being digitally disconnected means that it is extremely difficult to interact in a meaningful socio-economic manner with what's happening around one's sphere of influence. Without doubt, being digitally unskilled hampers the development of the digitally disadvantaged individual in comparison to his/her competitor skilled in such technologies. The residents of Alexandra and other similar disadvantaged communities should/must be given the opportunity to become acquainted with the digital world viz: computers – internet, Skype, Facebook, Twitter, communications, software packages, operating systems, mail boxes etc. to name a few. Research will be conducted on technology, costs, affordability and access regarding these communities.

This thesis will review the typical skills centre and develop an updated version that focuses on the integration of technology, and skills training in areas of low income and various levels of education. The proposed solution will house various functions that can be adapted to suit formal and informal situations (computer centre to informal meeting areas.)
The programme is aimed primarily at the residents of Alexandra. This will include the learner, the everyday commuter and the unemployed. There are many categories of people who would be able to access this centre, but its main focus is aimed at those who do not have basic access to the digital world. Being a centre aimed specifically at personal growth of the individual, it is envisaged that this will encourage the community to take ownership of the project. If such a facility is seen to provide the necessary means and vehicle for community upliftment, then the probability for its continued sustainability is greatly enhanced. It is the author's hope and intent that it will become a vehicle for community pride, spirit and fulfilment. The centre will also provide a platform where people of different backgrounds and educational levels will be able to meet and interact through its various multi-faceted facilities (computer rooms, lecture areas, meeting spaces, study spaces etc).

To decide on which parts of the digital world that the author will focus on will be done by analysing the current working and living environment with regard to the digital spectrum. This will be done by concentrating on that aspect of the digital environment which can add value to the upliftment of the Alexandra populus.

The digital component of interest is the connectivity of sources of information primarily via the internet and the suitable and enabling environment to house such facilities.

At the outset, it is useful to encapsulate the current working and living environment for digital connectivity as appliable to the local environment.

- Cost of bandwidth is still too high for the average household. The table below indicates the typical cost for the use of an ADSL line for a household per month. Month to month contracts, start from as high as R339 per month. There is a cheaper option of R139 per month, over a minimum of 12 months.

ADSL line & data combos:		pm
1GB + 384k line	12 month contract; R139pm for the first 6 months, R189pm thereafter	*R139
1GB + 512k line	12 month contract; R326pm for the first 6 months, R389pm thereafter	*R326
1GB + 4096k line	12 month contract; R413pm for the first 6 months, R489pm thereafter	*R413
5GB + 384k line	Month-to-month contract	R389
5GB + 512k line	Month-to-month contract	R549
5GB + 4096k line	Month-to-month contract	R649
10GB + 384k line	Month-to-month contract	R649
10GB + 512k line	Month-to-month contract	R779
10GB + 4096k line	Month-to-month contract	R999

*for the first 6 months

ADSL line uncapped combos:		pm
Uncapped 384k	True uncapped ADSL. Month-to-month contract	R339
Uncapped 512k	True uncapped ADSL. Month-to-month contract	R589
Uncapped 4096k	True uncapped ADSL. Month-to-month contract	R889

Image 3

- Cost of PC and associated computer equipment is not affordable by all levels of the population. As seen by the advert below the average cost of a standard personal PC set-up is R 6 000. The average household in Alexandra Township has 1.6 earners and an average household income of R 2 448 per month.



Image 4

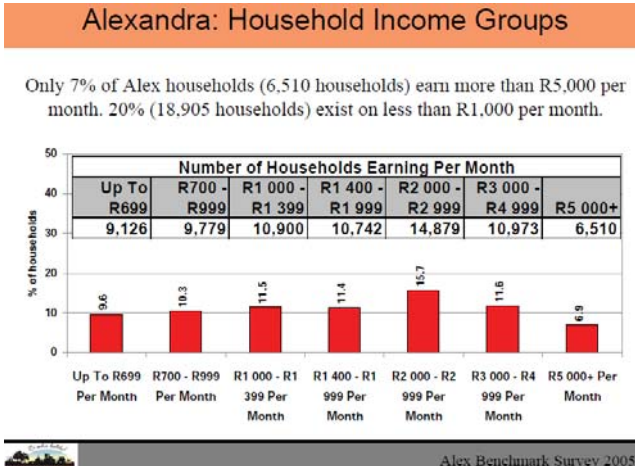


Image 4.1

- From the Alex Benchmark Survey 2005 document, it is noted that not many homes are on fixed line communications – there is however a high percentage of cell phone communications but it is very expensive to connect via 3G etc. The table below shows the percentage of households with cell phones and personal computers in Alexandra Township.

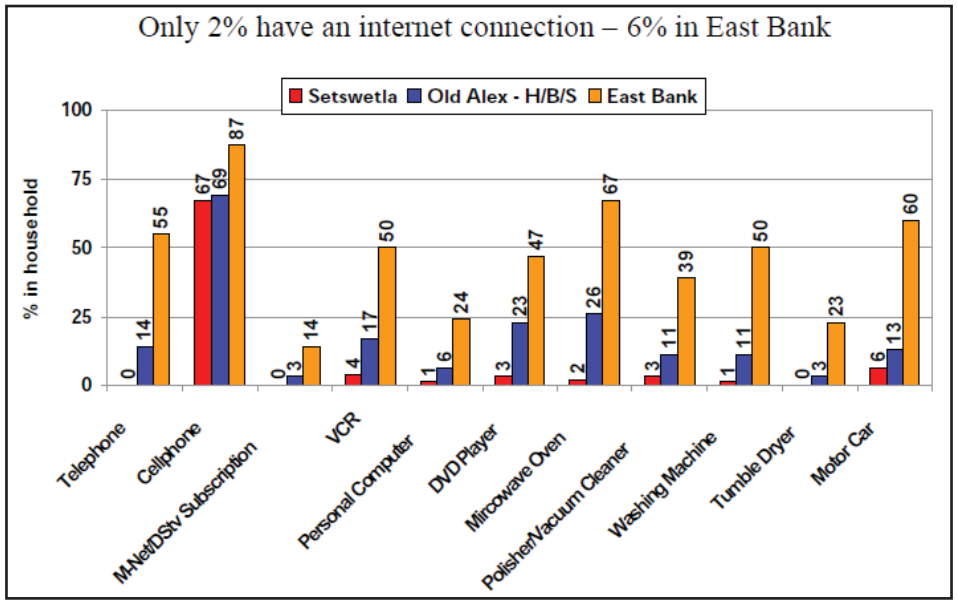


Image 5

- Cost of electricity has become a deciding factor in the case of digital connectivity. A single PC running for 8 hours per day will cost an average of R30 per month (see attached table). With the electricity cost projected to rise steeply at approximately 25% per annum over the next 3 to 5 years this will have a negative impact on household discretionary expenditures.

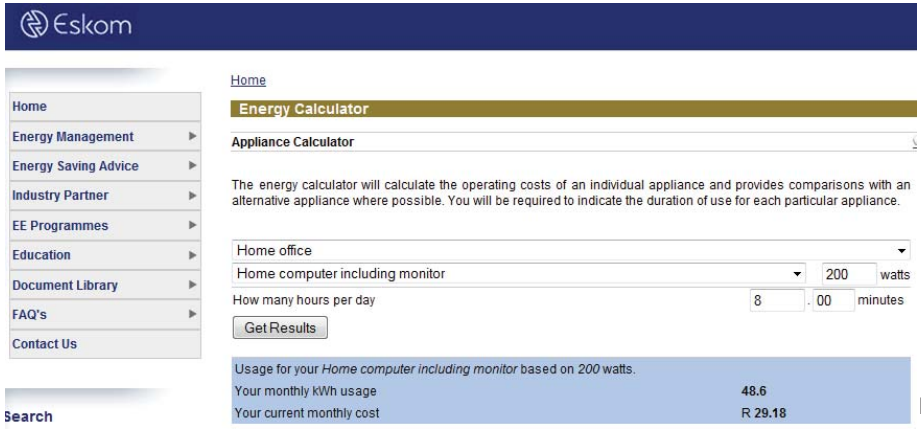


Image 6

- Power interruptions are expected to continue for the time being. Below is an article from the City of Johannesburg web site explaining that as residents we can expect power interruptions at infrequent times.

Joburg
a world class African city

home > news archive

Expect rotating power outages

Friday, 12 October 2007

Eskom is undertaking a series of load shedding to cope with the demand for power during the present cold and wet weather. Outages should not last for more than two hours.

JOBURG, along with the rest of the country, is being affected by electricity blackouts.

The temporary power shortages are caused by load shedding, which is done by Eskom when there is insufficient electricity supply to meet demand; as a result, there are power outages in specific areas.

Load shedding is a controlled way of rotating the available power between all its customers. Shortages on the electricity system unbalance the network, which can cause it to collapse. By rotating the load in a planned and controlled manner, the system remains stable, claims the utility.

"Load shedding is caused by bad weather, wet coal, planned maintenance and unplanned outages," said Moses Mamba, Eskom's senior communications adviser.



Electricity blackouts even affected many traffic lights across the city

Image 7

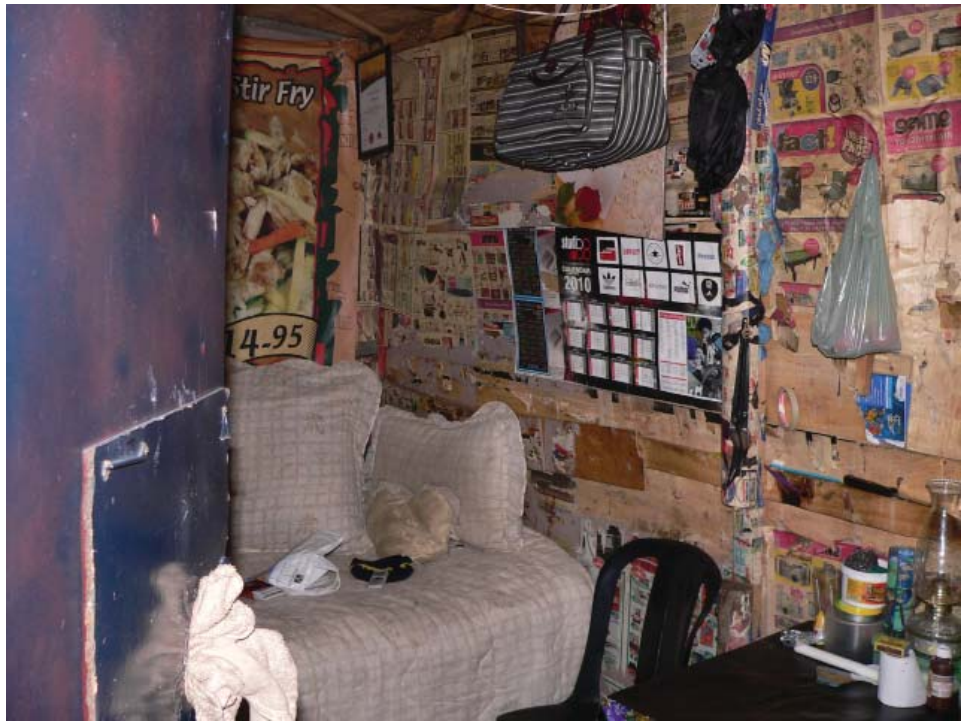
2010 WORLD CUP
VISIT THE
OFFICIAL HOST
CITY WEBSITE

SITE MAP

RSS 2.0

tracked by AbsolStats

- The general lack of space in the typical shack dwelling for housing such equipment is a problem. The sheer size of these small homes is a problem as space is organised in accommodating the basic general needs for living. Below are two photos taken inside two different shack dwellings. The first shows that this dwelling has enough space for a bed, small table and chair. The second shows a lady in her dwelling that is only big enough to accommodate a bed, she uses her bed during the day as a cupboard which to store her clothes on.





Photos: By author

- Generally poor internet security on home PCs regarding viruses, phishing scams etc. Anti-virus software needs to be current to be effective but this comes at a cost. This is often unaffordable to the home-user.

- Problem of theft. According to the Alexandra Benchmark Survey 2005 only 20% of adults felt very safe living there – 41% did not feel at all safe. 13% claim to have a family member who had been a victim of crime in the past 6 months. Residents of the poorest and most densely populated areas with least secure housing and tenure are those who feel least safe living in Alexandra. Women, poorer residents, younger residents as well as those in wealthier (relatively) East Bank feel unsafe.

Alexandra: How Safe do Residents Feel?

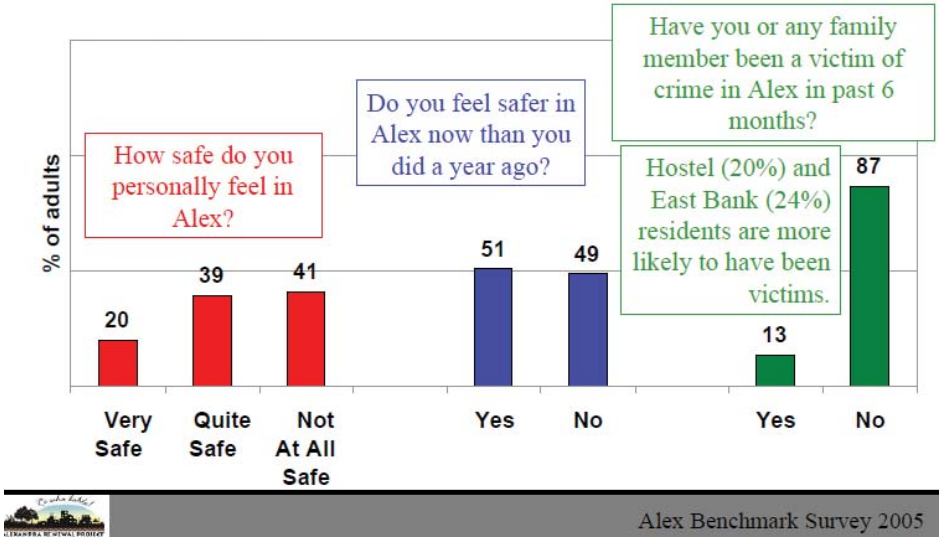
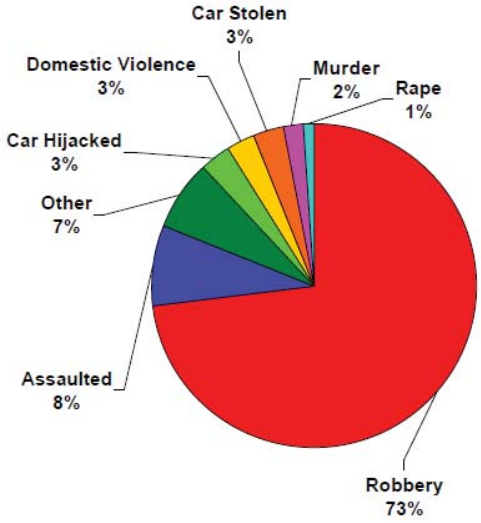


Image 8

Alexandra: Type of Crime

Base: Victims of crime in Alex (personally or household member) in last 6 months



Robbery is by far the most common crime in Alex. Those most affected are:

TOTAL	73
River Park	83
Alex Transit Camp	81
Marlboro	79
East Bank	76
16-19 Years	100
20-24 Years	87

Alex Benchmark Survey 2005

Image 8.1

The above problems can be addressed by the establishment of a centralised facility which is safe, secure and readily accessible to residents. Costs are reduced by economies of scale e.g. software licences, ADSL connections, power generator back-up etc. A mediatech-type facility will open many doors for the users. Benefits include:

- Working group peer learning
- Introduction to PCs and the internet
- School projects, research and learning
- Student research
- Adult ABET learning and classes
- Training on computer packages and usage
- Housing books, educational video, blind aid library etc
- A place of “self learning excellence”
- A place to engage in learned debate
- A place to present presentations and talks on matters academic and others
- Opportunities for mentoring

The foremost intent of such a facility is to enable the user to be computer literate. As noted earlier this is essential in the modern world in areas such as job competency, preparation and submission of CVs, personal banking, money transfers, payment of services on-line, SARS returns, logging of requests and complaints with service providers, interaction with companies and service providers etc. E-mail, Facebook and other vehicles such as Twitter etc. allow for fast, easy and cost effective methods of communication with family and others anywhere in the world.

The age-old question of how this sort of project would be financed needs to be addressed; likewise who makes the profit and who would be interested in investing in such a proposal. Possibilities are:

Provincial/Government initiative:

Since the intent is to raise the overall computer level skill of the Alexandra population, its primary aim should not be profit driven. If driven by profit, some of the poorest sectors (and by definition being the sector that most needs such intervention) will in all likelihood be excluded from such a centre as will probably also school children. Government’s Training Sector funds are available for precisely such a project. Public/private partnerships can also be a viable solution if the right partnerships are identified and brought together.

Companies:

Private companies could be encouraged to invest in such a project as part of their social investment commitment but with the added ‘carrot’ that it provides a good marketing opportunity for their (information technology – IT) products as well as a potential talent ‘recruiting office’. This can also serve as a useful test-bed for soliciting public users’ views on new products etc. as the environment can be monitored and controlled.

Cell phone companies:

These organisations are involved in the lives of ordinary South Africans through corporate social investment programmes, which focus on large-scale national projects in both urban and rural areas. An example is the Cell C containers and Cell C educational initiatives. Since cell phones (‘smart phones’) and computers are increasingly closing their functionality and usability gap, cell phone companies are intricately linked into the proposal.

Global brand:

One such brand could be the Virgin Group. This brand is all about media, cell phones, entrepreneurship, money and a better lifestyle.



1.2 Methodology

The theories behind the digital divide, both globally and locally are the starting point of this thesis. A collection of data will be compiled from interviews and published material; books, journals, magazines, internet and encyclopaedias. Thereafter, the link between specific South African opportunities (or lack thereof) and potential skills learning principles will be identified and capitalised upon, through architectural intervention. Following this, a site is selected where the proposed intervention would be most feasible in terms of fulfilling the requirements of digital skills training.

Embarking on this exercise, one of the starting points is to contextualize an understanding of the current social, cultural and economic factors and data of the selected community and site. Through investigation of the local Site Development Framework (SDF), mapping and site visits, an understanding of the socio-economic landscape will be acquired. Through one-on-one conversations and interviews, gaps in the areas requiring attention will be exposed highlighting opportunities for intervention.

The theories and principles drawn from the research into multi-media centres will be used, where appropriate, to give guidance into the architectural programme with the aim of determining an appropriate solution.

Research will be used to highlight specific theories, facilitating the marriage between the proposed architectural intervention and the land to which it belongs. Such research will be applied to the chosen site.

The extrapolated key principles of multi-media centres and the digital divide will be applied to the local context. Such key principles will suggest and provide input into the parameter set of what constitutes a ‘successful’ multi-media facility.

The findings from the above will be used as a significant contributory input into the final design, where elements from the research will be adopted to ensure the successful integration of the local community needs and the digital world.

1.3 Approach

There are over 350 000 people living within the borders of Alexandra. Following various visits to Alexandra and interacting with 'common-man' residents, the author was informed that most of the residents do not have access to or either do not know how to access the digital world beyond the cell phone. Whilst digital applications and internet cafes have been around for many years for the public, such facilities come at a cost which not everyone can afford.

Also, whereas the use of technology is becoming increasingly evident in every day practices in the many parts of the world, two problems exist in Alexandra, viz:

(i) The evident lack of funding and development, and
(ii) The general low level of education

The sheer number of people who were either not previously exposed to a formal education or do not currently have a chance to further their education has a significant impact on the localised society and economy. Such social challenges need to be seriously considered and addressed if whatever solution implemented is to be successful.

Education is universally acknowledged as the first step necessary for emerging and developing economies to succeed. Upgrading educational levels implies that:

- the illiterate person needs to be able to read the newspapers, be able to write and sign his/her name.



- the school learner and the ‘common man’ is afforded the opportunity to progress his education if he/she so wishes by having access to the tools and means.

- the modern market economy requires computer literacy as an absolute non-negotiable skill.

The proposed mediatech solution will offer the opportunity and means for achieving the above. The potential is there for a ‘holistic learning centre of excellence’.

The new knowledge gained from this exercise will be an invaluable contribution to aid the future development and enhancement of educational levels and skills in poverty stricken areas.

1.3.1 Site Selection

After reviewing three potential sites, the identified and selected site is in Wynberg, Johannesburg in Gauteng Province and which borders on Alexandra Township. Characteristics and opportunities associated with the selected site are as follows:

(1) Alexandra is enclosed by a ring road and, as the proposed site is adjacent to this road, it provides easy access for the residents and visitors. This can become a high tech showcase for Alexandra; it can show the development of what can be achieved even in disadvantaged areas.

(2) This can become the gateway into Alexandra - an introduction to Alexandra. It will also be easily accessed by non-residents.

(3) This facility can be used to facilitate adult basic education and training (ABET)

(4) The main centre would facilitate study groups. It is close to many schools which could use the facility after hours and during vacations.

(5) There is a general lack of resources available to the community; having future sub-centres scattered around allows the whole community availability and access to the centre’s services.

(6) The opportunity is there for mentoring and training; if linked to a tertiary institution the students can become the educators.

(7) A successful development can become the model for transfer to other similar disadvantaged areas and townships.



Image 9

1.4 The digital divide

The digital divide refers to the gap between people with effective access to digital and information technology and those with very limited or no access at all.

It includes the imbalances in physical access to technology as well as the imbalances in resources and skills needed to effectively participate as a digital citizen. In other words, it is the unequal access by some members of society to information and communication technology, and the unequal acquisition of related skills. The term is closely related to the knowledge divide as the lack of technology causes lack of useful information and knowledge.

The digital divide may be classified based on gender, income, and race groups, and by locations. The term global digital divide refers to differences in technology access between countries or the whole world.

(Wikipedia, Sep 2008)

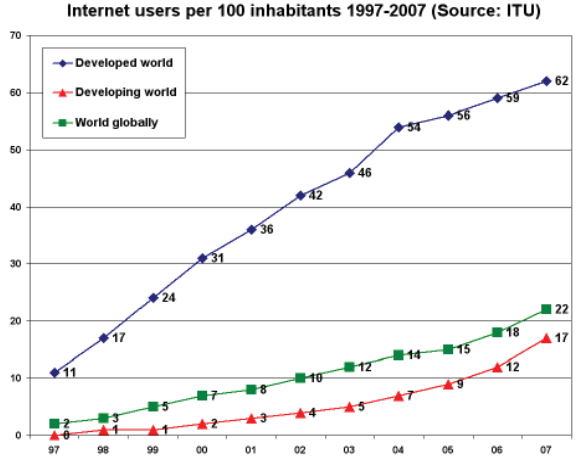


Image 10

In analysing the topic further, there are various definitions of the term 'digital divide'. Bharat Mehra defines it simply as the troubling gap between those who use computers and the internet and those who do not.

This term initially referred to gaps in the ownership of, or regular access to, a computer. As internet access came to be seen as a central aspect of computing, the term's usage shifted to encompass gaps in not just computers but also access to the internet.

Lisa Servon argued in 2002 that the digital divide is a symptom of a larger and more complex problem - the problem of persistent poverty and inequality. As described by Mehra (2004), the four major components that contribute to the digital divide are socio-economic status, with income, educational level, and race among other factors associated with technological attainment.

Recognition of the digital divide as an immense problem has led scholars, policy makers, and the public to understand the ".....potential of the internet to improve everyday life for those on the margins of society and to achieve greater social equity and empowerment. Technology offers a unique opportunity to extend learning support beyond the classroom, something that has been difficult to do until now. The variety of functions that the internet can serve for the individual user makes it 'unprecedentedly malleable' to the user's current needs and purposes".

(Wikipedia, Sep 2008)

The global digital divide reflects existing economic divisions in the world and directly contributes to the widening gap in economic divisions around the world. Countries with a wide availability of internet access can advance the economics of that country on a local and global scale. In today's society, jobs and education are directly related to the internet, in that the advantages that come from the internet are so significant that neglecting them would leave a company, organisation and individual vulnerable in a changing market.

Andy Grove, the former chair of Intel, noted that "…..by the mid-2000s all companies will be internet companies, or they won't be companies at all" (Flew, 2008; 199). "In countries where the internet and other technologies are not accessible, education is suffering, and uneducated people and societies that are not benefiting from the information age, cannot be competitive in the global economy" (Burks, Michael R. Economic Factors Involved with Universal Internet Access and People with Special Needs - A Working Paper)

"This leads to these countries, which tend to be developing countries, suffering greater economic downfall and richer countries advancing their education and economy. However, when dealing with the global aspect of digital divide there are several factors that lead to digital divide. For example, country of residence, ethnicity, gender, age, educational attainment, and income levels are all factors of the global aspects of digital divide" (Cheung, 2004, 63). Further, "…in addition, a survey shows that in 15 Western European countries females, manual workers, elderly, and the less educated have less internet access than males, professional, the young, and the well educated" (Cheung, 2004,63). The digital divide also refers to the skills people have – the divide between people who are at ease using technology to access and analyse information and those who are not.

According to Jakob Nielsen's paper 'Alertbox' the digital divide is broken up into three stages:

Stage 1: Economic Divide. In its simplest form, the digital divide is manifested in the fact that some people can't afford to buy a computer.
(Solution: Provide for such community based equipment to be accessible under controlled conditions)

Stage 2: Usability Divide. Far worse than the economic divide is the fact that technology remains so complicated that many people couldn't use a computer even if they got one for free. Many others can use computers, but don't achieve the modern world's full benefits because most of the available services are too difficult for them to understand. Senior citizens face accessibility problems.
(Solution: Encourage for the establishment of civic minded mentors and tutors who would be allowed extended privileges in exchange for their services)

Stage 3: Empowerment Divide. Given the chance not everybody would make full use of the opportunities that such technology affords. Participation inequality is one exponent of the empowerment divide that has held constant throughout all the years of internet growth: in social networks and community systems, about 90% of users don't contribute, 9% contribute sporadically, and a tiny minority of 1% accounts for most contributions.
(Solution: Allow for the establishment of civic minded mentors and tutors as outlined above)



In Christopher D. Sessums's blog post 'Teachers and the Digital Divide: If the solution is not you, then who?', he discusses how complacency is part of the reason we have a digital divide. He goes on to say "Participants in a class I am teaching seem to believe that they must wait for someone else to solve this problem of finding adequate resources to insure every student has internet access at home. It is not knowledge of the issues that these teachers lack, but it could be a time and/or leadership constraint". Further he notes: "While there are a number of tremendously complex factors associated with the cultural, social and economic conditions that prevent children and families from having access to computers and the World Wide Web, it is the responsibility of all of us with the creative brainpower, the social capital, and social networks to address and right this divide".

According to a paper, 'Digital Divide: What it is and why it matters' it took digital divide researchers a whole decade to figure out that the real issue is not so much about access to digital technology but about the benefits derived from access. Extracts from the paper say that closing the digital divide is a precondition for reducing poverty. Whilst some anti-poverty experts would argue that closing the digital divide is not a top priority, noting instead that the poor need clean water and jobs before they need computers, it is the author's contention that access to digital technology greatly enhances the effectiveness and affordability of efforts to improve the water supply, improve rural health and education, generate jobs and address many of the other interrelated problems of poverty. Closing the digital divide is not a silver bullet for reducing poverty - but there is a much lower likelihood of large scale and sustainable poverty reduction without doing so.

DigitalDivide.org believes that there are nine digital divide truths that have been discovered over ten years by lessons learned through a model being developed in Indonesia by DigitalDivide.org and its partners. It is of relevance for the purposes of this thesis to review these truths and to note the learnings that flow from these assertions.

Truth 1: The divide is widening, not narrowing, at an ever-increasing rate. The lower-income groups, being given access to the digital world, could face negative consequences when exposed to the enticement and allure of unsustainable consumerist culture.
(Learning: Access to internet etc. needs to be ensured under controlled conditions preferably with mentors or under the guidance of experienced personnel to ensure that no advantage can be taken of the technologically unsophisticated person.)

Truth 2: Closing the digital divide may be the only way to make globalization work for the poor. In 1990, the world's most affluent 20% of citizens were garnering 85% of the wealth. By 2000, the percentage of wealth held by the low-income groups was cut in half from eight to four percent. In this period digital technology became the driving force of globalization, Nobel economist Joseph Stiglitz is on record as having asserted that new technologies are driving this inequity.
(Learning: The disadvantaged have little choice in the matter. Of necessity they need to get on board the technological train as quickly as possible.)

Truth 3: The consequence of not closing the divide can lead to civil disorder . The Irish experience has shown that during the mid 90s when information communication technologies were broadly disseminated throughout the Irish economy and after Irish youngsters got recruited into

high tech jobs, they forgot about their parents' religious grievances and terrorism all but disappeared. Coincidentally or not, today's pockets of terrorism are also pockets of digital exclusion.
(Learning: Of particular relevance to South Africa, where there is still a very high unemployment rate, it is absolutely essential that such fertile grounds for nefarious deeds are not prolonged. Digital exclusion must be overcome with urgency. This aspect in itself should be a prime and urgent motivator for the establishment of the proposed facility.)

Truth 4: Closing the digital divide is fundamentally about empowerment, i.e. it is about using new technologies to empower the low-income groups just as they now empower the higher-income groups. When the ICT industries talk about providing "end-to-end solutions" to users, they are talking about fulfilling aspirations of users, i.e. empowering them. Thus, closing the digital divide must necessarily involve empowering the low-income groups by studying their circumstances and then finding ways to shift the context that reinforces their poverty.
(Learning: The digital media centre will provide the ideal controlled conditions for such further studies and interventions to take place.)

Truth 5: Closing the digital divide is the only way to sustain the growth of world markets. As prices drop for cell phones, computers and software the private sector will face dropping prices, deflation and overcapacity unless new customers emerge. The only places new customers exist is among the low-income sector.
(Learning: As noted earlier, it is envisaged that private organisations and companies would engage with and be integrated into daily operations of the proposed centre. By being so involved, their products can be visible, tangible and in use by lower income persons. This affords the private sector a marketing and sales strategy hereto untapped when such persons progress to an economic position to acquire such technology.)

Truth 6: All societal sectors - business, government, academia, NGOs can benefit from closing the divide. Yet no one sector has taken the initiative to lead the effort to close this divide. This is the global tragedy of the digital divide. Everyone stands to gain from closing the divide, the private sector gets markets; philanthropists get poverty-reduction; governments become more productive and academic institutions can become spurs for their countries' economic growth. Yet the divide is not being closed because no one has the incentive to be prime-mover.
(Learning: The author hopes that in the context of the Alexandra microcosm the development of the digital media centre can serve as architecture's contribution and model of what can be done to address this problem.)

Truth 7: Closing the digital divide requires building an enterprise ecosystem that offers end to end solutions for the low-income groups. This has been the most significant conclusion from a full decade of experiments in closing the divide. Solutions must offer the less privileged an integrated, holistic solution via information and communications technologies.

(Learning: There is little point in sitting an illiterate person in front of a computer keyboard. Clearly certain fundamental steps have to be in place or put into place before taking advantage of the opportunities offered by digital technology. Similarly, there is little point in presenting a Microsoft Excel document to a person who is unfamiliar with the concepts of a spreadsheet. Once again, holistic programmes need to be put into place



to address such issues. Such interventions in turn require adequate and suitable facilities.)

Truth 8: Countries with relatively advanced emerging markets, not the poorest countries, are the best settings for experimental efforts to close the digital divide. The places that have produced the most innovation in closing the divide are India, China, Thailand, Costa Rica and Estonia. Poorer countries, such as Mali or Ghana can be settings for various useful projects, but they don't make good settings for showing how all information communication technology (ICT) stakeholders could be aligned to close the digital divide.
(Learning: South Africa is regarded as an emerging economy and hence if the DigitalDivide propositions are valid, the proposed project location, in Alexandra, should be an ideal setting.)

Truth 9: Closing the digital divide involves using new technologies to formalise the informal economy, thereby bringing the low-income people into established markets. This can be achieved through access to information and communications technologies.
(Learning: This aspect is the fundamental building block of the thesis and proposed media centre development.)

The illustration on the right depicts how mankind has always been in one way or another divided digitally. This is depicted right from the stone age when man was able to get ahead of the competition by the evolution of his brain. Today computers and technology determine this gap and in the future the development and use of technology will be the deciding factors.

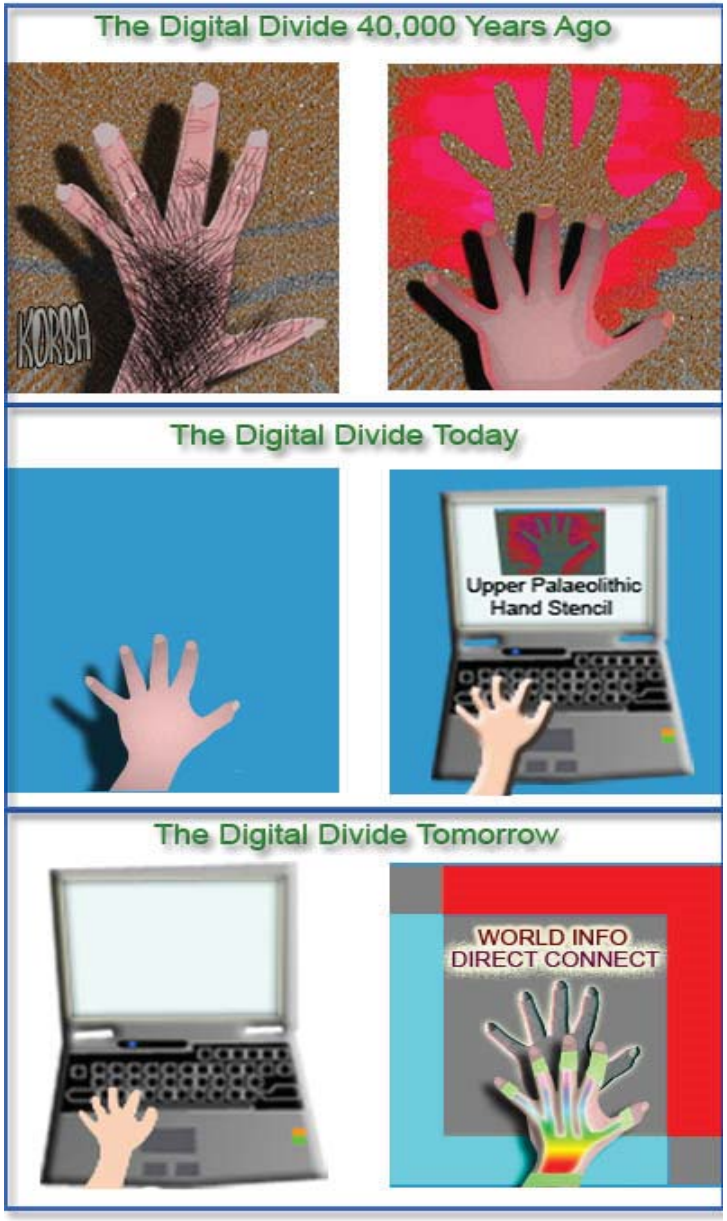


Image 11



Image 12

The XO-3 is a touchscreen tablet device, to be released in 2010 for the One Laptop Per Child project by Yves Behar.



Image 13

Froot, a bio friendly desktop computer concept. It features laser technology and high end projecting for efficient and convenient computing. The need of external peripherals like monitor or keyboard has been eliminated by projecting them onto any flat surface.

1.5 Information Communication Technology (ICT); The use of technology

Jay Naidoo, former minister for Posts, Telecommunications and Broadcasting stated that, “Technology is one of the most important levellers of any society; we need to harness the power of technology to leap frog our continent and our country into the 21st century.”

Day by day, as a society, we are becoming more dependent on technology whether we like it or not. Social activities such as trading, transport, communication, entertaining and education are making increasing use of some form of technology. Today the digitally educated citizen will be at an advantage to the digitally uneducated citizen in terms of employment and social integration. Possible solutions to help cross this bridge facing the digitally disadvantaged citizen are to provide and facilitate access to computers, technology, internet etc.

The state of ICTs in the low-income, digitally disadvantaged areas such as Alexandra Township are in need of development and some serious ‘catching up’ if they are to function and progress to similar levels as their neighbours such as Sandton.

By means of this thesis, the author wants to establish the effectiveness of Low Income Digitally Disadvantaged (LIDD) areas with regard to:

- Information communication technology (ICT) usage.
- Reflect on how LIDD areas are using ICT in unique ways within development initiatives.
- Establish whether ICT helps LIDD areas to make a positive difference in serving their needs.
- Determine if LIDD areas are being properly served by the ICT industry.
- Highlight the ICT resources LIDD areas currently have, and see how they use such resources.
- Review the expectations LIDD areas have of these resources and what benefits they might gain from such resources.

More often than not institutes, schools, communities, places of work etc. benefit from ICT which has had a major impact on the ability to strengthen their specific needs. LIDD areas are now poised to explore the cutting edge of mobile technology and social networking. These LIDD areas are now being presented with technology at their finger tips; however they are not nearly achieving the full potential available.

It is the author’s best intention that this situation must and will change. LIDD areas are becoming adept at the use of cutting edge tools like mobile applications and social networking services. With most of this available technology being used in a personal social interaction capacity, the author intends to expand its application and make it available for people to use it in pursuit of loftier personal and economic goals both for oneself and the community as a whole.

LIDD areas face numerous challenges in keeping up with rapidly changing ICT developments. These include developing organisational and educational processes, technology investments, electronic communications and staying abreast of a wide range of ICT policy issues that impact on them.

Some of the main contributing factors in this regard are the cost of ICT services, unreliable service providers, operating environment, ignorance, lack of direction and lack of training and support. This has resulted in the uneven adoption of ICT across these areas, and without a significant change in the status of any of these factors, the potential impact of ICTs on LIDD areas will continue to be limited.

The internet heralds a strategic opportunity for the future of LIDD areas as it provides an efficient way to channel and access information and engage with the external digital world. Embracing and integrating ICTs as a tool for communication, organisational development and service delivery represents huge opportunities in the process of transforming and developing the LIDD areas.

The challenge is to expose LIDD areas to ICT issues, encourage them to take an active interest in these issues, sustain and expand this interest, and harness the power of ICTs in meeting their needs.

Telecommunication services which are mainly used in institutions such as schools and NGO's consist of telephones, facsimile service and e-mail. Fixed line telephone have the highest usage figure followed by e-mail, fax, mobile telephone, VoIP (Voice over Internet, e.g. Skype), instant messaging (e.g. Windows Messenger) and then paging.



Programme areas can be headed up to bridge the digital divide gap. Areas that can be addressed are:

- Community developments
- Social services
- Community training
- Human rights
- HIV/AIDS care
- Education
- Economic development

According to Intekom archived material: "….just minutes away from St. Stithian's, the students of Realogile High School in Alexandra township experience learning at a very different level. There is not one computer in the school for the students. There learning takes the form it has for decades: chalk and a blackboard, text-books (when they're available) and handwritten notes. Mrs Moatshe the Deputy Principal at Realogile High School wishes their school could be the same as St Stithian's. Most people in her community do not have computers at home, but if the school could have a computer in the media centre where students could go to and do their projects with information from the internet it would benefit both the teacher and the pupils".

This statement from Mrs Moashe encapsulates the essence of this thesis, viz the undisputed necessity in Alexandra for a centre of digital connectivity and self learning.

To summarize, the author intends to utilize an innovative blend of high-tech and low-tech technologies to provide assistance in the digital educational development of the user.

The low-tech includes approaches towards social integration, education classes and one-on-one learning. The high-tech approaches seek to exploit an integration of multiple types of multi-media channels. If successful, it is the author's belief that the proposed effort will not only dramatically improve the basic education landscape, but also put in place a digital infrastructure that will serve the needs of a wider array of applications in health care, commerce, information dissemination, and entertainment.

Scarred and isolated by apartheid, overcrowded and beset by problems, Alexandra has developed its own unique identity over a period of almost a century. This is a distinct community, proud of its history and culture. It has influenced the formative years of many of South Africa's writers, musicians, sportsmen, business people and politicians.



02_Alexandra context and its surroundings- a biographical sketch

2.1 Location

Since the birth of Johannesburg, Alexandra was located north of the city and has to this day played a major role in the growth and development of Greater Johannesburg.

In its early history the location of the township of Alexandra was seen as being too far away from the city centre to attract white prospective buyers, hence it was subsequently zoned as a block freehold township - one of the few places where Blacks could own property in Johannesburg.

However, Alexandra is now in a prime location, being close to freeways, Main Reef Road and Marlboro Road.



Image 14

Access:



Image 15

2.2 Context mapping

Population Distribution:

In comparison to Soweto, Alexandra is located in a much more central position to Johannesburg. This has attracted those looking for work in Johannesburg to settle in Alexandra.

Due to the large work force Alexandra provided during the apartheid years, government did not re-locate the township. With no land to expand due to the fact that the township was fenced in and controlled, Alexandra became ever increasingly over populated. As indicated on the attached map it remains one of the highest densely populated areas in Greater Johannesburg. It is estimated that today Alexandra has a population count probably in excess of four times the number for which it was designed - hence the service systems have become overloaded and this frequently leads to delays and blockages.

The formal residential stands and houses that were built on them were designed for single family living. Backyard shacks now cover the area of most such stands. The original stand size of 500-600 sqm are characterized by sizeable houses but usually with 3 – 6 additional separate rooms built in the original gardens, each usually housing an additional family who rent from the main householder. The additional rental units, which provide a significant income to the main householder, are termed “backyard shacks” although many are of brick or block construction. There are an estimated 20,000 shacks of which approximately 7,000 are located in “backyards”.

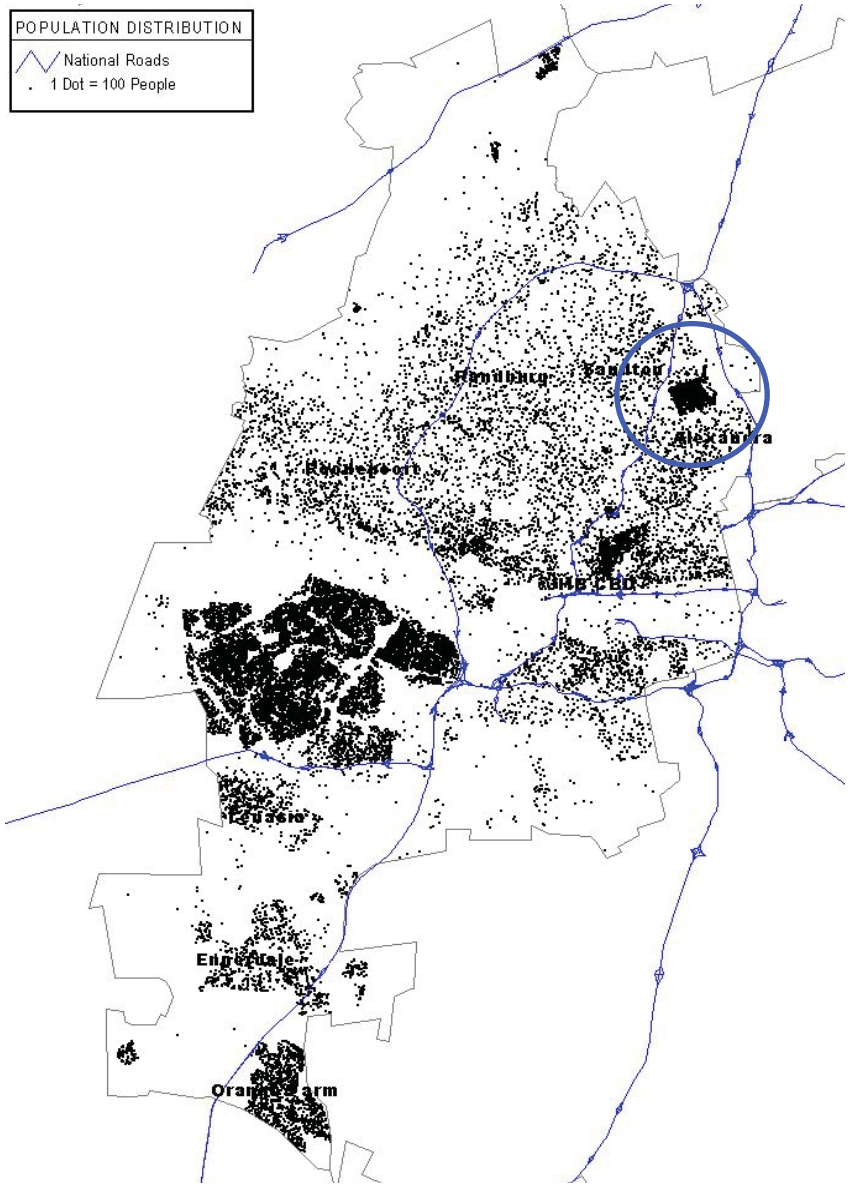


Image 16

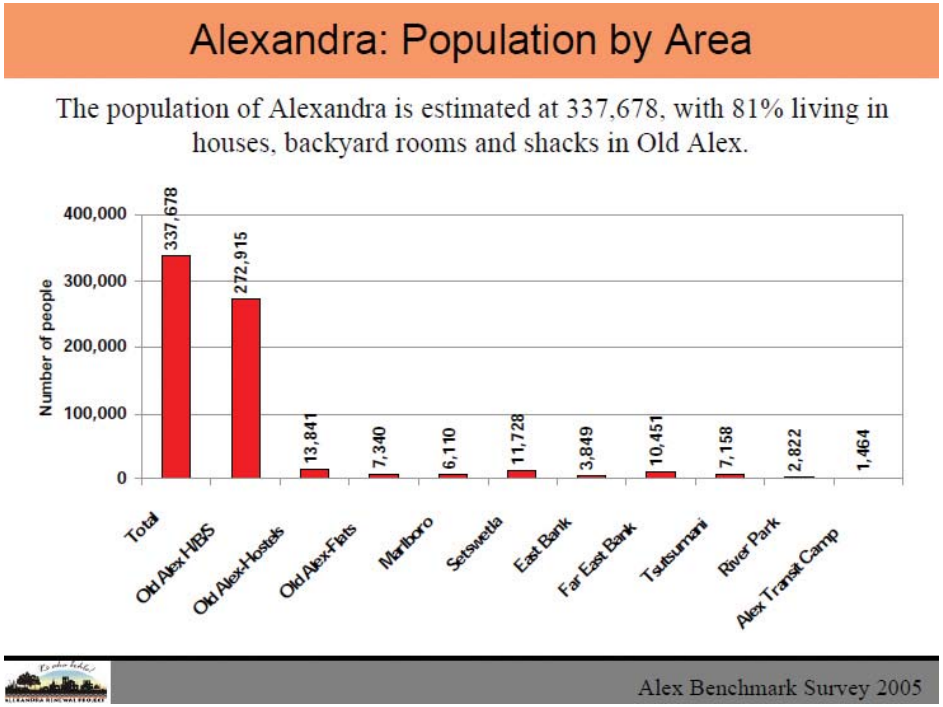


Image 17

Population Density

Alexandra is under enormous pressure due to the limited land available and the high population density living within its borders. Old Alex is extremely densely populated. It compromises mainly low rise houses which came about from the past and poor urban planning.

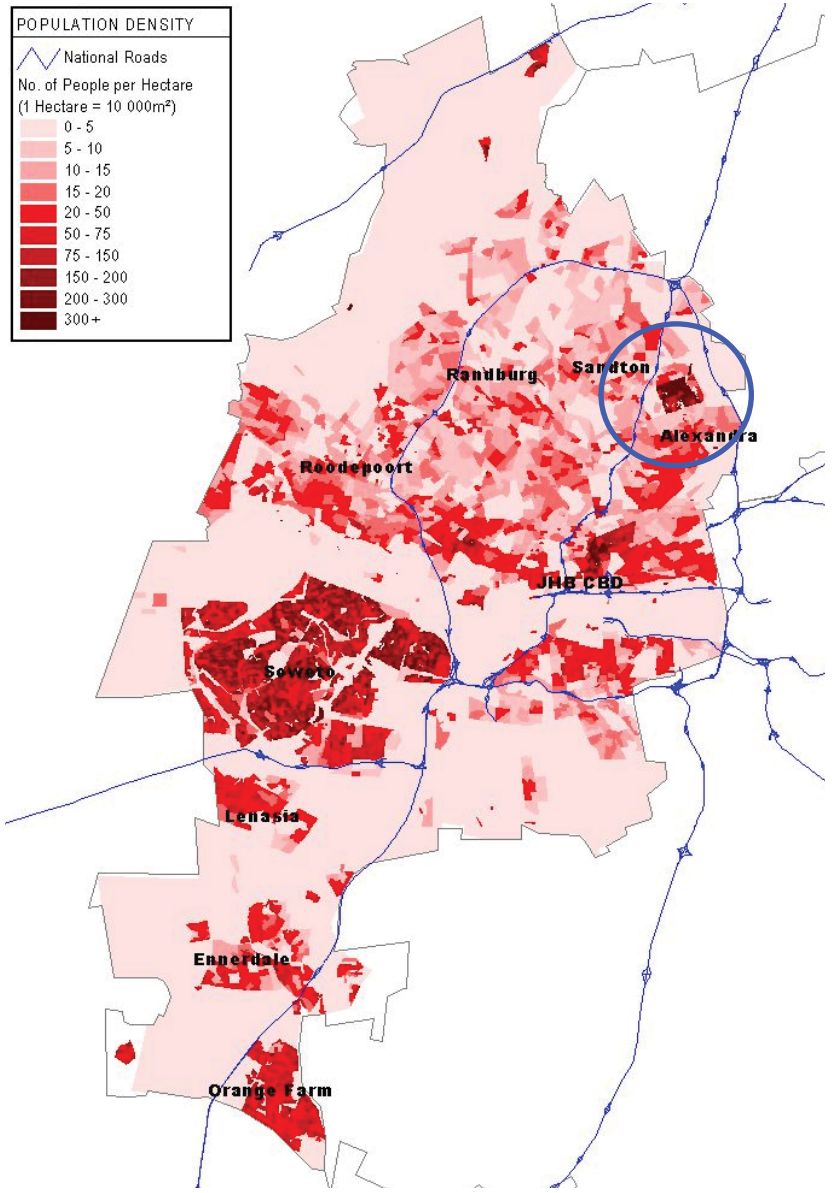


Image 18

- Agricultural
- Amusement
- Business
- Business 1
- Business 2
- Business 3
- Business 4
- Cemetery
- Commercial
- Commercial 1
- Commercial 2
- Community Facility
- Ecclesiastical
- Educational
- Existing Public Road
- Existing Public Roads
- General
- Government
- INSTITUTIONAL
- Industrial
- Industrial 1
- Industrial 2
- Industrial 3
- Institutional
- Municipal
- No Use
- Parking
- Parkings
- Pedestrian Mall
- Private Open Space
- Proposed New Roads and Road Widening
- Proposed New Roads and Widenings
- Public Garage
- Public Open Space
- Reservation of land
- Reservoir
- Residential
- Residential 1
- Residential 2
- Residential 3
- Residential 4
- Residential 5
- S.A.R
- Sewage Farm
- Sewer Farm
- Special
- Undetermined



Image 19

Land Use:

Due to the planning regulations of the past, Alexandra was prohibited from developing businesses or any form of income generator. The urbanism of Alexandra was formed by a number of factors that supported many small enterprises selling consumable goods. Schools and civic buildings were placed around the old square due to a lack of economic and space considerations.

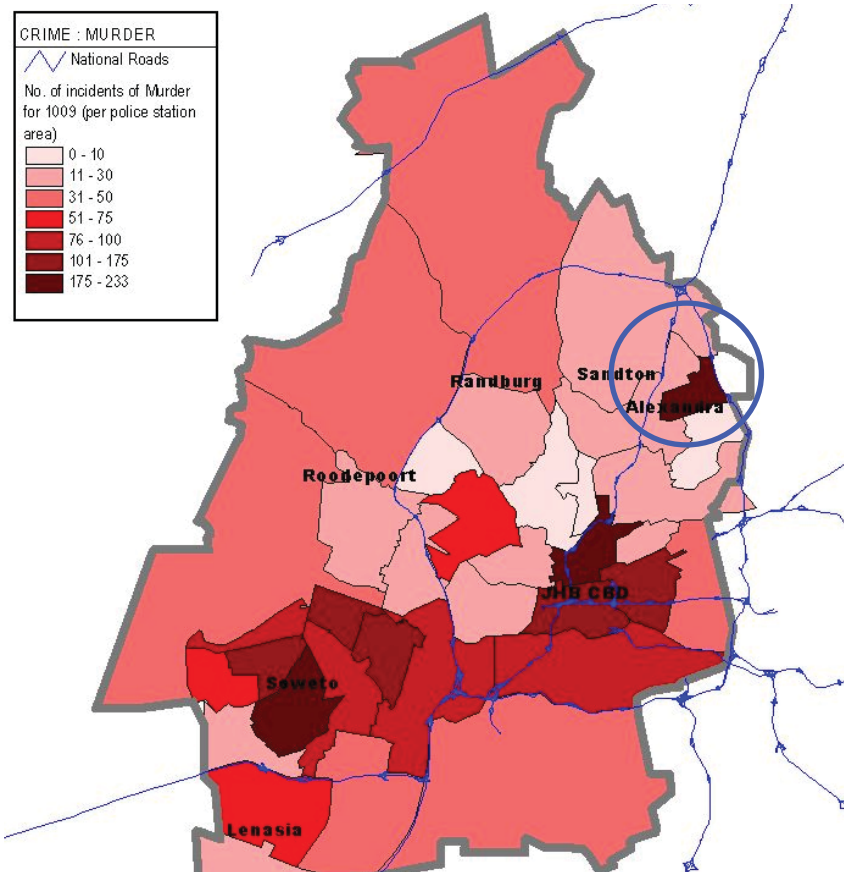


Image 20

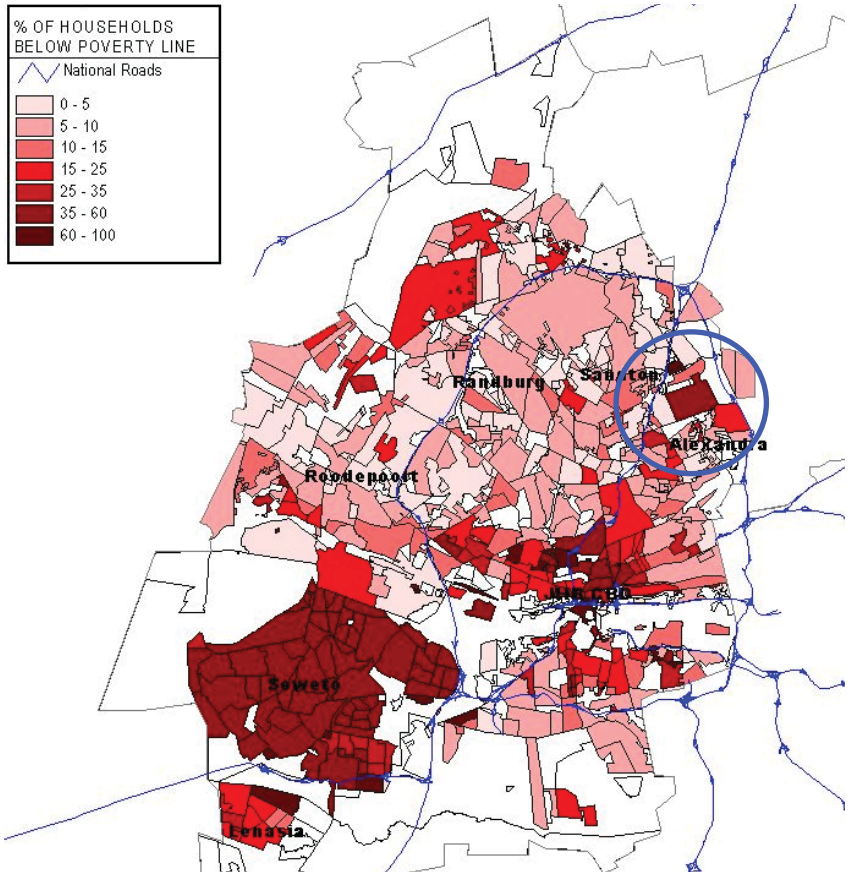


Image 21

Crime:

Years back Alexandra had a relatively low crime rate because the community leaders enforced their own justice and people respected this law. There was only one police station based in adjacent Wynberg that dealt with police cases in Alexandra. Since the rapid expansion of Alexandra the crime rate has risen and has become a serious problem for the community to deal with.

Poverty:

The rapid expansion of Alexandra is due to the fact that those who migrate there are looking for work and therefore Alexandra has an extremely high unemployment rate (57%). The Reconstruction and Development Programme (RDP) housing tends to be too expensive for the residents, therefore most of the inhabitants of the RDP houses are not prior residents of Alexandra.

2.3 Typologies



1



4



7



2



5



Photo by author 8



3

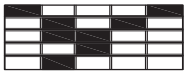


photo by author 6



pics 1-5 & 7-8 9
www.alexandra.co.za

1. Alexandra Hostels
men's and women's hostels



2. Alexandra Flats



3. RDP Housing



4. Alexandra 'old core' housing



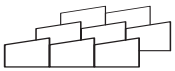
5. Transition housing



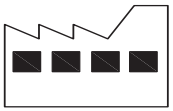
6. Alexandra 'old core' housing with shacks clipped on the sides



7. Informal shacks

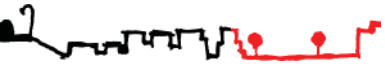


8. Illegal occupation and renting of warehouse space



9. Low density housing





2.4 Time line of Alexandra

The development of Alexandra Township dates back to 1912. As indicated earlier it was the only place where black people could buy free-hold land until J.B. Hertzog became Prime Minister in the 1930's and abolished it. Black people in Alexandra became the victims of unscrupulous white landlords who exploited them for exorbitant rentals. An ineffectual health committee administered Alexandra until 1960 when it was brought under direct government control. For purposes of this thesis it is useful for the reader to have an overview of the history and development of Alexandra. This history can be categorised into six distinct periods.

Period of **Emasakeni,** Nobody's Baby.

1904 - The beginning

The land on which Alexandra is situated was originally part of a farm owned by a Mr Papenfus. He endeavoured to establish this as a white residential township, which he named after his wife, Alexandra. However there were no takers, owing to the considerable distance of the township from the centre of Johannesburg, and this idea was soon abandoned.

1912 - Township proclamation

Alexandra was proclaimed a 'native township'. The township was proclaimed prior to the 1913 Land Act and was thus one of the few areas where black people could own land under freehold title in urban areas.

1913 - Native Land Act

Native Land Act was established. Alexandra was excluded from this provision and was still open to purchase.

1916 - Funding

By the First World War, Alexandra had grown to 30 000 inhabitants and the Health Committee was established to manage this growth.

1940 - WW2

The population of Alexandra starts to spiral and so the government decides to demolish it; however this does not happen as there is not enough money to go ahead with the plans. During this time unemployment stood at 30 000 residents.

1942 - Bus Boycotts

When Mr. Baloyi's buses which served Alexandra are confiscated the residents of Alexandra go on a boycott of Putco busses which were introduced.

1948 - Apartheid control

Under apartheid the administration of Alexandra fell under the direct control of the then Department of Native Affairs. The main strategies for Alexandra were the reduction of the population, the control of movement into the area and the expropriation of freehold property. Approximately



50 000 people were forcibly moved to Tembisa and Soweto.

1956 - Women of Alexandra

The women of Alexandra participated in numerous marches and protests against the extension of the pass laws to women.

1957 - Second Bus Boycott

Another Bus Boycott was triggered by a penny increase on the Putco buses. Residents used the slogan ‘Azikhwelwa’ and walked to and from Alexandra to work along Louis Botha, a trip that often was 15 to 30km.

Period of **Slagpaal,** Little Chicago, Terror Township.

1940’s - 50’s - Gangsters Controlled Alexandra.

1940 - Unemployment at 30 000

1946 - Slapgaal

Alexandra became known as ‘Slapgaal’. ‘Spoilers’ became known as the most vicious thugs who dominated the streets.

1953 - Gangland

Other gangs formed, the 6 most well known were the Spoilers, Young Americans, Berlins, Stone Breakers, Black Koreans and the Mau-Maus.

1956 - Msomis

The Msomis took control from the Spoilers as the predominant gang.

Period of **The Dark City,** Hell’s Kitchen.

1956 - Health Board

The peri-Urban Health Board replaces the Health Committee.

1958-73 - Removals

56 000 People relocated to Soweto and 15 000 people relocated to Tembisa.

1960- Services

The first street lighting is installed and work commenced on laying sewage pipes and drains.

Period of **The Lost City.**

1960 - Hostel City

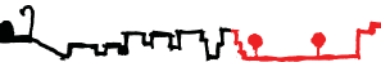
A decision was reached to demolish all properties in Alexandra and to rebuild the area as a ‘hostel city’. Family accommodation was to be eliminated and 25 hostels each housing about 2 500 ‘single’ people were to be built.

1971 - Madala

The first M1 or ‘Madala’ hostel was built.

1972 - Nobuhle

The first M2 or ‘Nobuhle’ hostel was built.



1976 - Riots.

The Soweto Riots in June 1976 spread to other urban areas in the country including Alexandra where 19 people were killed. The government subsequently adopted a softer approach towards urban blacks. They were no longer regarded as ‘temporary sojourners’ and their permanent status was recognised.

Period of **The Bright City.**

1979 - Re planning

Alexandra was given full status as a residential area.

1980 - Master Plan

A ‘Master Plan’ for Alexandra was prepared. This ambitious proposal was described as a ‘Garden City’. Alexandra was to be divided into new suburbs with a central business area, light industry, sports complexes and an interlinked system of parks. The Plan required the acquisition of all properties and the demolition of all houses. Only a small part of the Plan was implemented – areas now known as Phases 1, 2 and 10.

1986 - Alex Six Day War

The ‘Alex Six Days’ upheaval resulted in 40 people being killed. The demands by residents were the rejection of the Black Local Authorities and the forced resignation of the Councillors. This occurred in April and resulted in Alexandra not having a local municipal administration; the implementation of the ‘Master Plan’ came to a halt.

1990 - Urban Renewal Project

This project was abandoned due to a lack of funds.

1992 - M1 and M2 Fighting

Fighting occurred between the two hostels in an area known as ‘Beirut’, 60 people were killed and 600 injured.

1994- Democracy

The first democratic elections took place in April. The African National Congress (ANC) becomes the first democratically elected government in the country..

Period of **The New Transient Era.**

1998 - Development Framework

The decision to reduce the population of Alexandra started with the removal of illegal immigrants and people living below the flood line of the Jukskei River.

1999 - All Africa Games

A new village was built on the East Bank for the competitors.

2000 - Alexandra Renewal Project

Former President Mbeki announces the ARP and a grant of 1.3 billion Rands towards its accomplishment.



2001 - Alexandra Renewal Project Commences

2005 - Alexandra Benchmark Survey Conducted

2008 - Xenophobic Attacks

A series of xenophobic attacks that took place throughout South Africa, started in Alexandra Township, due to the large number of foreigners (mainly Zimbabweans) living there. South Africans living in Alexandra Township allegedly attributed such attacks on the rationale that such foreigners were taking jobs away from the local population.

2009 - Pan Africa Mall

Alexandra receives its first shopping mall, The Pan Africa Mall.

(www.alexandra.co.za)



1914


1936


1938


1947


1974


1985


2001


2008


2009

Image 22



Kgalema Motlanthe



Paul Mashatile



Nelson Mandela



Samora Machel



Alfred Nzo



Joe Modise



Joe Nhlanhla



Poet, Mongane Wally Serotel



Zanele Mbeki



Iron Duke,Irvin Khoza



‘Big Voice’ Jack Lerole



‘Mother of Alex’ Annie Twala



Rev. Sam Buti

Image 23

2.5 Icons of Alexandra

Alexandra has a very rich cultural history as exposed by its numerous personalities from a wide spectrum of life. Among these are:

Public leaders
Public leaders who either lived or were associated with Alexandra include the former State President Nelson Mandela, the previous First Lady Zanele Mbeki, the late former Mozambique President Samora Machel, the late Alfred Nzo (Minister of Foreign Affairs 1994-1999), the late Joe Modise (Minister of Defence 1994-1999), Joe Nhlanhla (Deputy Minister of Intelligence from 1994 and later Minister from 1999 to 2000). South Africa's third democratic President Kgalema Motlanthe and past Gauteng Premier Paul Mashatile, were both born and grew up in Alexandra.

Sports Stars
Well known boxers such as Bra Jason Radebe, Richard "The Hawk" Hlubi, Theo "Black Panther" Mthembu, Kangaroo "Roo" Maoto, Kid "Khekhe" Sibeko and Jersey "Joe" Mahlangu as well as soccer's "Iron Duke", Irvin Khoza, and soccer players Daniel "Vader" Mophosho and Issac Chirwa all came from the Alexandra area.

Musicians
Musicians such as Zakes Nkosi, Bra Hugh Masekela, Bra Ntemi Piliso, Simon 'Mahlathini' Nkabinde, the Dark City Sisters, Joyce Mogatusi of the Mahotella Queens, Caiphus Semenya, and penny-whistler par excellence Jack Lerole all hailed from Alexandra.

Academics
Academics such as Dr. Thamsanqa Khambule, Dr GG Mbere and Mr Leepile Taunyane have called Alexandra 'home'.

The 'Mother' of Alexandra
In 2003 at the age of 99, the first and most famous resident of Alexandra, Annie Twala, passed away. She had experienced firsthand the turbulent history of Alexandra, from the beginning.

Philanthropists
Many Alexandrans have dedicated themselves to saving Alexandra and improving the lives of the people who live there. Amongst their number are well-known "Save Alex' campaigners and philanthropists Rev. Sam Buti and Linda Twala, son of Annie.

Artists and poets
Artists and poets include David Koloane and Mongane Wally Serote, who wrote:

> And Alexandra,
> My beginning was knotted to you,
> Just like you knot my destiny.
> You throb in my inside silences
> You are silent in my heart-beat that's loud to me.

(www.alexandra.co.za)

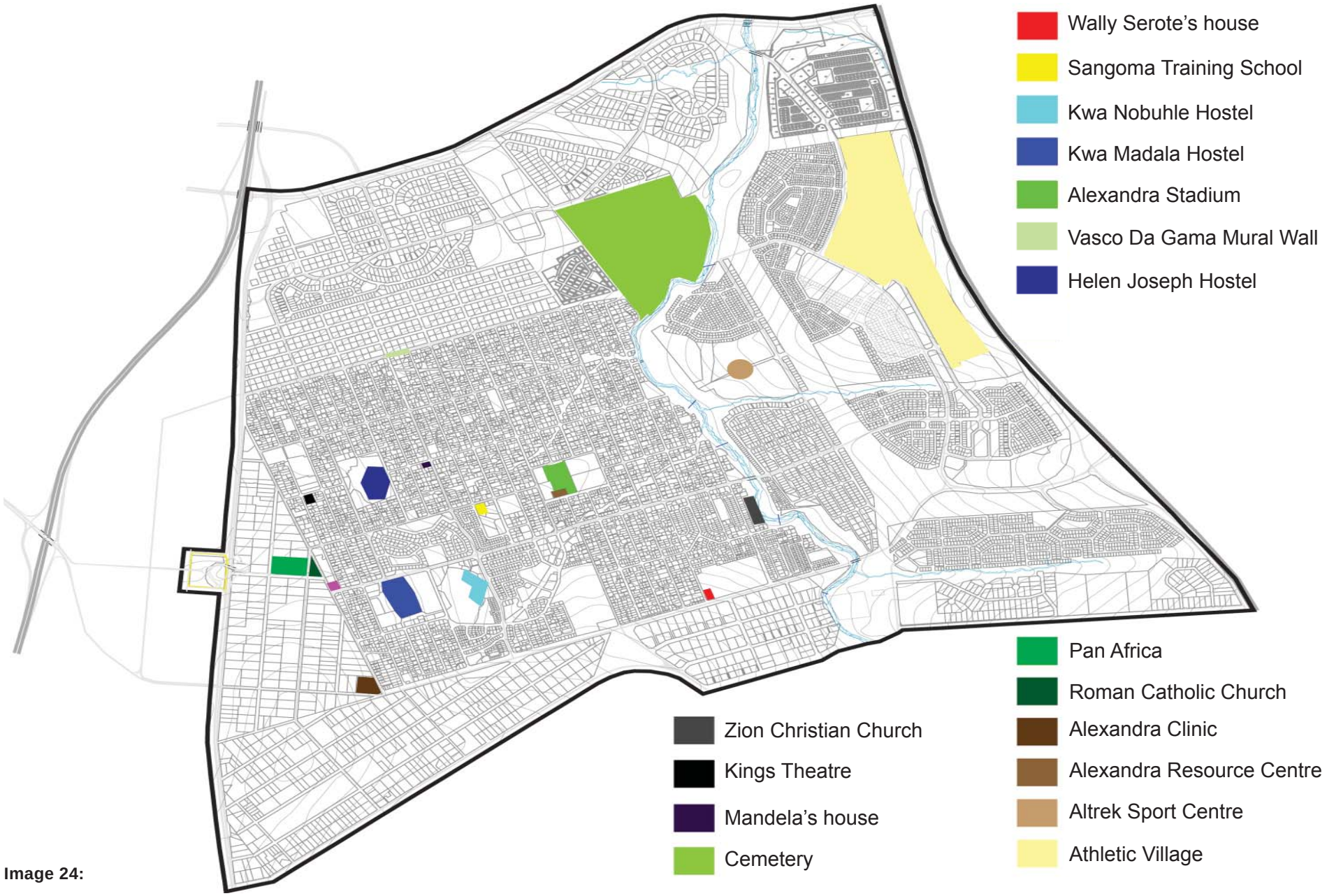

Wally Serote's house
Sangoma Training School
Kwa Nobuhle Hostel
Kwa Madala Hostel
Alexandra Stadium
Vasco Da Gama Mural Wall
Helen Joseph Hostel
Pan Africa
Roman Catholic Church
Alexandra Clinic
Alexandra Resource Centre
Altrek Sport Centre
Athletic Village
Zion Christian Church
Kings Theatre
Mandela's house
Cemetery

Image 24:

2.6 Landmarks and Heritage Sites


Nelson Mandela's house



Zion Christian Church


Wally Serote's house


Alexandra Stadium


Helen Joseph Hostel


Cemetery


Alexandra Clinic



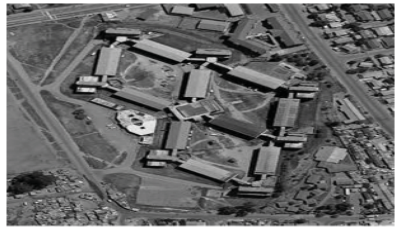
Vasco Da Gama Mural Wall


Sangoma School



Pan Africa Mall


Athletic Village


Kwa Nobuhle Hostel


Altrek Sport Centre


Roman Catholic Church


Alexandra Resource Centre


Kwa Madala Hostel


Kings Theatre

2.7 ARP: Alexandra Renewal Project:

The Alexandra Renewal Project is one of 8 urban nodes that form part of the South African government's Integrated Sustainable Rural Development and Urban Renewal Programme announced by former President Mbeki in his State of the Nation Address to Parliament on the 9 February 2001.

This programme is a key component of the Government's approach to addressing urbanisation and housing challenges in South Africa and comprises the integrated development of an area addressing economic, social and physical challenges simultaneously.

The estimated budget in 2001 for the Alexandra Renewal Project to redevelop the township was R1,3 billion over 7 years.

The purpose of the ARP is to upgrade the living conditions and human development potential within Alexandra.

The dual intention is:

- To create integrated and functional settlements, and
- To rehabilitate dysfunctional urban areas with economic and social development.

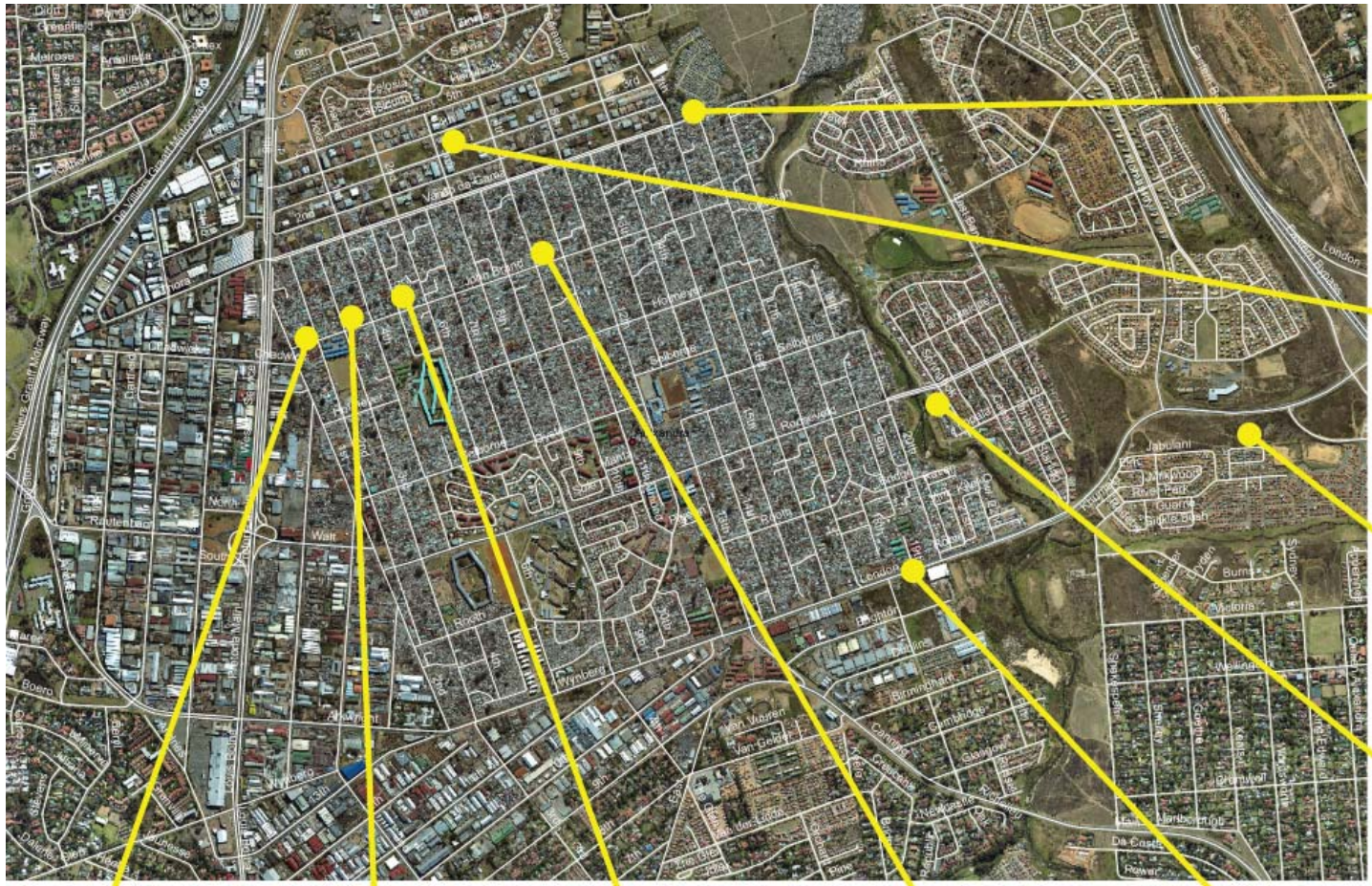


Image 25: Alexandra township, Johannesburg, before the start of the Alexandra Renewal Project

The project is tasked with the following:

- Substantially reducing levels of unemployment.
- Creating a healthy and clean living environment.
- Providing urban services at an affordable and sustainable level.
- Reducing levels of crime and violence.
- Upgrading existing housing environments.
- Creating additional affordable housing opportunities.
- De-densification of households to appropriate land.

(www.alexandra.co.za)




ARP Project: Electricity


Nokuthule Special School


River Park library


Tourism Node


Gordon Primary School


Alexandra High School


Foundation Phase Educators Training in Science and Technology


Early childhood development


Iputheng School Cluster

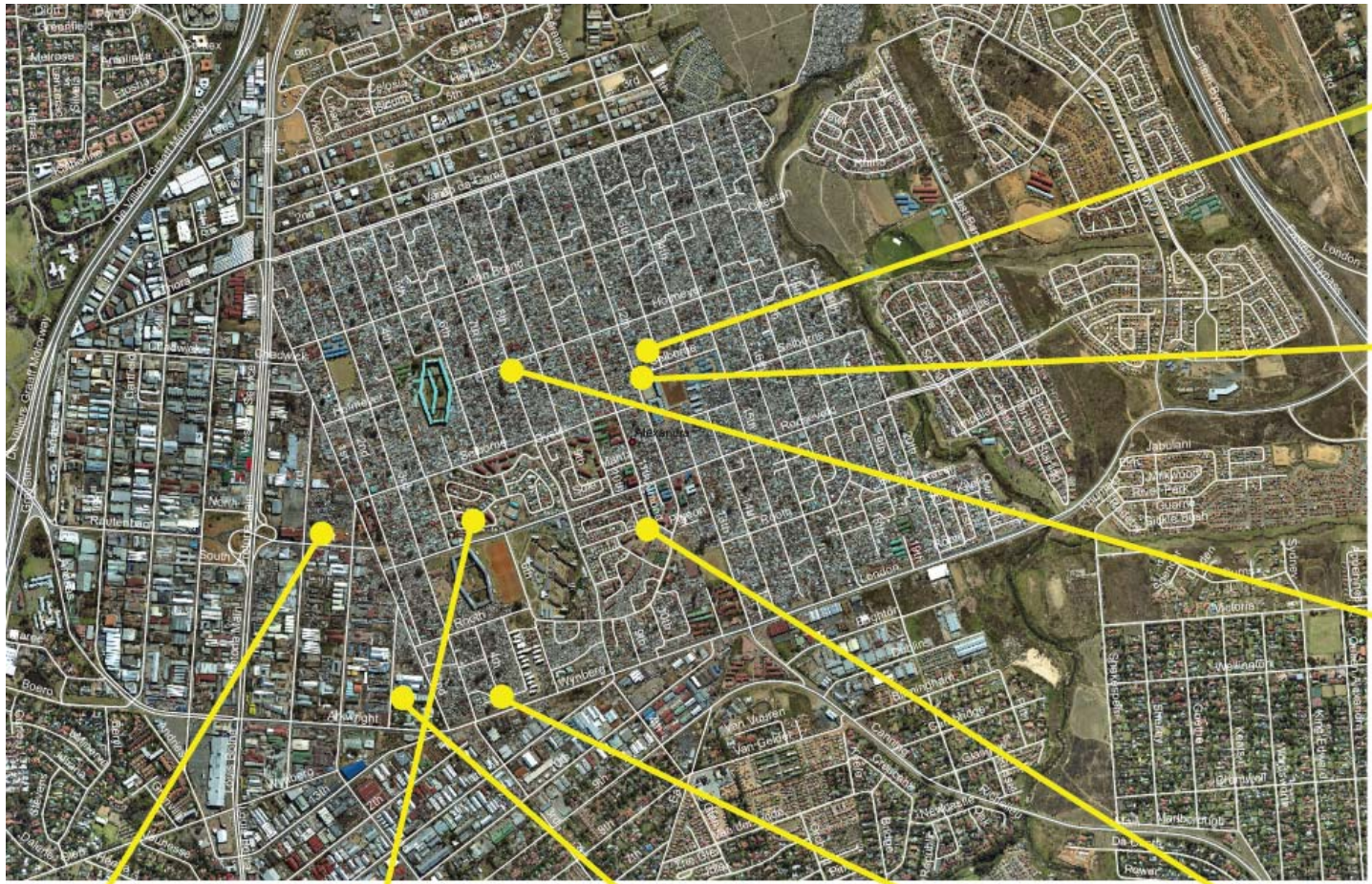
Image 26:
Map of Alexandra and photos with typical places shown where users can benefit from their upskilling of digital know how.



Image 27

The mapping on the attached pages highlight the ARP's achievements that the author deems necessary considerations to this thesis.
These include:

- Nokuthule Special School
- River Park Library
- Tourism Node
- Iputheng School Cluster
- Early Childhood Development Centre
- Educators Training
- Alexandra High School
- Gordon Primary School
- Pan Africa Mall
- Ekukhanisweni School
- Alexandra Clinic
- Literacy Project
- Retail Training Development
- Interpretation Centre





Alex tourism



Local Business Support Centre



Nelson Mandela Yard Interpretation Centre



Pan Africa Taxi & Retail Development



Ekukhanisweni school



Alexandra Clinic



Literacy project



Retail Training & Development

Image 28:
Map of Alexandra and photos with typical places shown where users can benefit from their upskilling of digital know how.

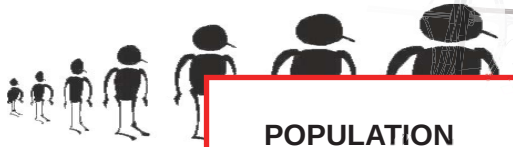
2.8 The Current Situation



ADMINISTRATION



LOCATION



POPULATION

EDUCATION



ALEXANDRA



EMPLOYMENT

HEALTH CARE



TRANSPORTATION





TERRAIN

ADMINISTRATION
- Falls within greater Johannesburg in Gauteng
- Under administration of the Johannesburg metropolitan municipality

LOCATION
- North east of Johannesburg
- On the banks of the Jukskei
- Situated on prime land - key growth area
- Adjacent to Sandton
- Bordered by key roads and highways
- Township is 100% urban
- A central location linked to the Johannesburg Metro
- Areas in Alexandra include Old Alex, Marlboro, Setswela, East Bank, Far East Bank, Tsutsumani and River Park.

EDUCATION
- Functional illiteracy is low
- 10% of the population have no schooling
- 14% have some form of primary/secondary schooling
- 26% have a matric qualification
- 4% of Alexandra population have obtained a higher education qualification

HEALTH CARE
- The health care capita expenditure in Alexandra is R342 per annum
- The number of patients a nurse sees per day is 21.3
- HIV prevalence is recorded at 30% of all patients tested at antenatal clinics

TERRAIN
- An urban township with a high population density
- The Jukskei River separates Alexandra into the eastern and western regions
- Houses are built in the Jukskei's tributaries and on its flood plain
- Formal housing accounts for 69% and informal housing accounts for 31%









Photos: By author

TRANSPORTATION

- Alexandra is adjacent to key main roads and to the highway linking Johannesburg and Pretoria
- It is bordered by the N3 on the east, Marlboro Drive on the north, the M1 on the west and Corlett Drive on the south
- Few people in Alexandra own vehicles; taxis are the primary means of transport

EMPLOYMENT

- 43% of the residents are employed (15 - 65yrs old)
- 64.2% of households live below the household subsistence level
- Wholesale and the retail sectors account for 20.4% of the employment
- The public sector accounts for 12.8% of the employment
- Employment growth from 2000 to 2004 averaged 2.1%

POPULATION

- The population is estimated at 328 579 (ARP, 2005) in an area of 7.6km^2
- The population density is 43 234 persons/km^2
- Services provision relatively high
  - Electricity: 29% of households do not have electricity
  - Piped water: 14% of households do not have access to piped water
  - Waste removal: 1% of households do not have waste removal
  - Telephones: 59% of households do not have access to telephones (cell phones included)
- Households predominantly consist of 1-3 persons (70%)
- 58% of Alexandra residents are younger than 29 years of age
- Zulu (28%) and Sepedi (24%) are the most common spoken languages in the node



Photo: By author



Photo: By author

2.9 The Current Situation - Numbers Summary





Photo: By author

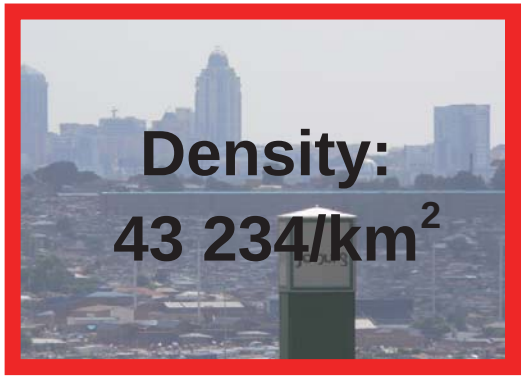


Photo: By author



www.alexandra.co.za



www.alexandra.co.za



www.alexandra.co.za



www.alexandra.co.za



Photo: By author



Photo: By author



Image 29

Township characterised by:

- High population

- High unemployment

- Low household income

- Low levels of education

- High levels of HIV/Aids infections

- Low connectivity to digital medium

“As a Department of Education we have embraced the principle of lifelong learning. This is fundamental to achieving social, cultural and technological change, and to realising our future economic development. Therefore, if we are serious about our economic and social justice goals, as a nation we must get serious about adult and community education”.

Address by the Deputy Minister of education, Mr Mosibudi Mangena, 2002

How can we break out from this circle of poverty and deprivation?
...through the digital medium
Recognizing the fundamental premises that:

- **Society is becoming increasingly reliant on technology.**
- **Most social activities make increasing use of some form of technology.**
- **The high-tech citizen will always be at a distinct advantage in terms of employment and social integration.**

then the solution appears to be:

THE CREATION OF : MULTI-MEDIA CENTRE(S) IN DISADVANTAGED AREAS





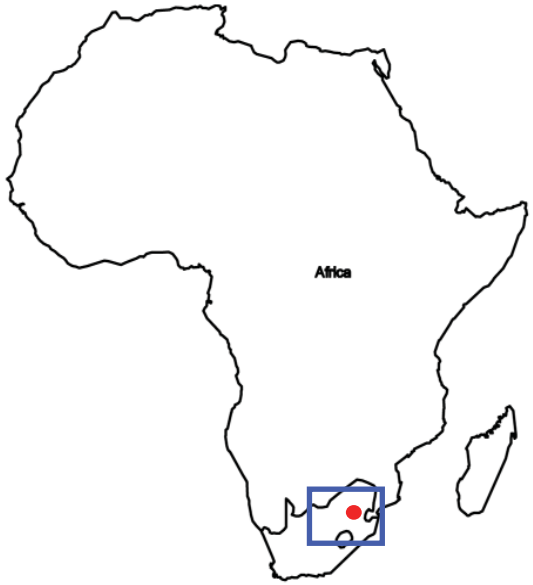



Image 30: ABET

Founded in 1912, the Alexandra community has been so strong that not even Apartheid could destroy it. (www.mojaheritage.co.za)

03_Exploring the site of intervention

Africa



South Africa

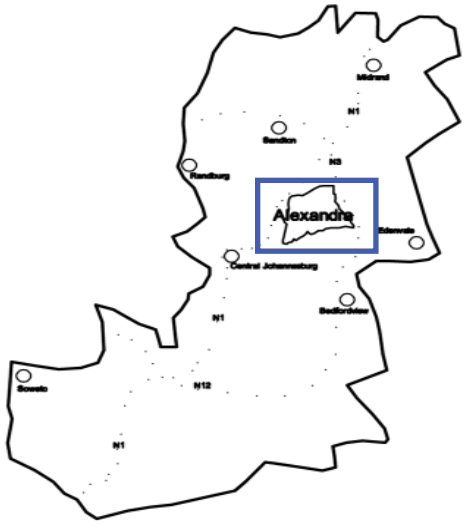


Gauteng

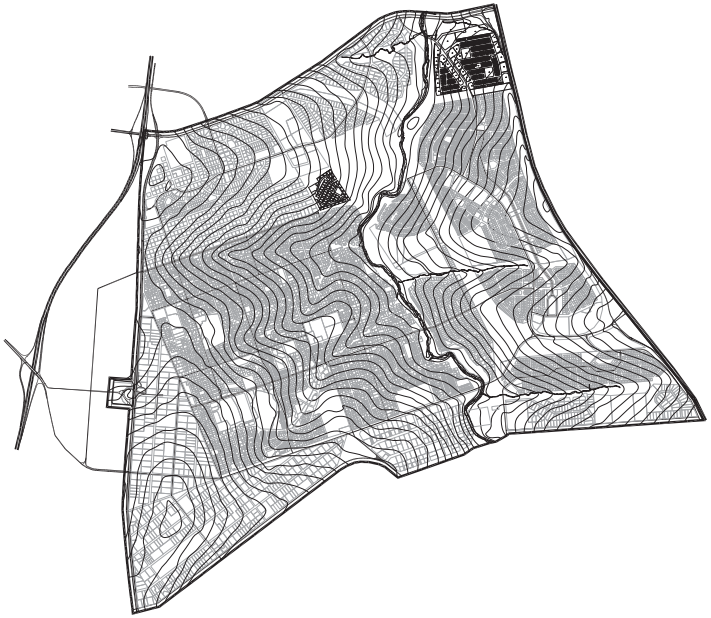


Image 31

Greater Johannesburg



Alexandra



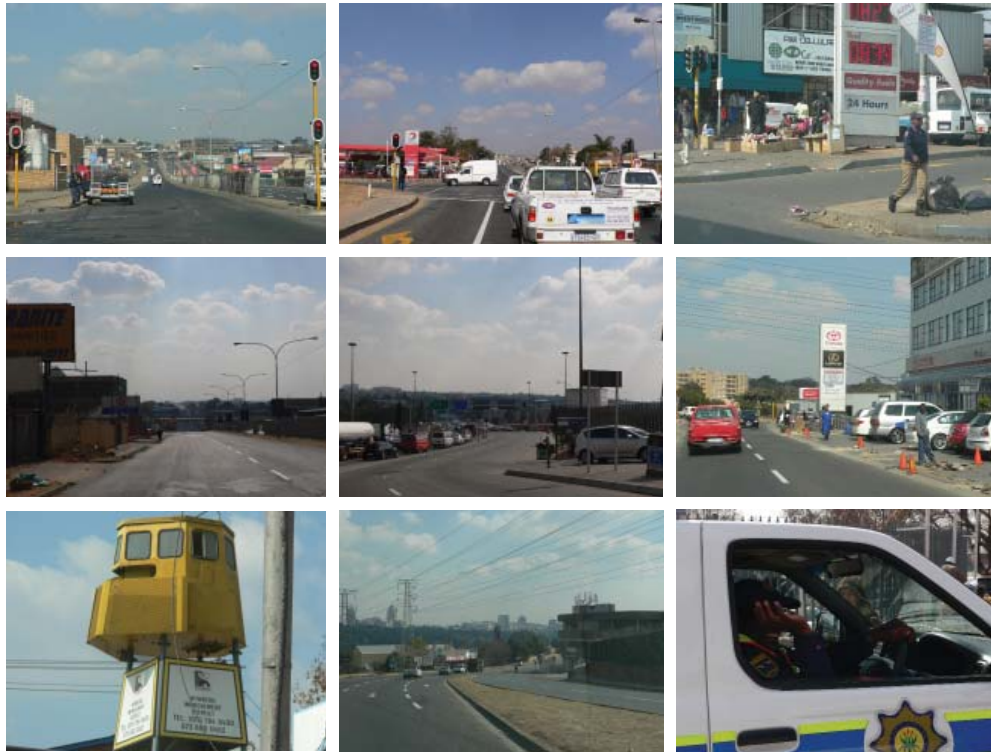
Aerial photo of Alexandra with proposed site highlighted in yellow. The proposed site is located within the suburb of Wynberg.



Image 32

3.1 Wynberg

The photos below depict the typical scenes on the streets of Wynberg. It is an industrial suburb of Alexandra. What is evident are the number of security personnel patrolling the streets and the number of workshops that provid short term services such as motor oil changing and welding of motor parts.



photos: by author

Places within 4 km of Wynberg include:

Marlboro (1.4 Km)
Alexandra (1.6 Km)
Strathavon (1.7 Km)
Kew (1.9 Km)
Sandown (2.0 Km)
Atholl Gardens (2.0 Km)
Wendywood (2.3 Km)
Eastgate (2.4 Km)
Bramley (2.8 Km)
Bramley Gardens (2.9 Km)
Kelvin (3.0 Km)
Inanda (3.2 Km)
Savoy Estate (3.3 Km)
Morningside Manor (3.4 Km)
Birnam Park (3.6 Km)
Illovo (3.8 Km)
Sandhurst (3.8 Km)
Lakeside (3.8 Km)
Benmore Gardens (4.0 Km)
Gallo Manor (4.0 Km)

Organisations and Companies in Wynberg include:

Chemicals (5)
Engineering (1)
Food, Beverages and Tobacco (1)
Manufacturing (12)
Computers and Communications (1)
Equipment (2)
Professional Services (18)
Media (3)
Public Utilities (1)
Security (5)
Transport and Storage (1)
Wholesale and Retail (25)
Waste Management, Pollution Control and Recycling (4)

(www.mbendi.com)

3.2 The site of intervention

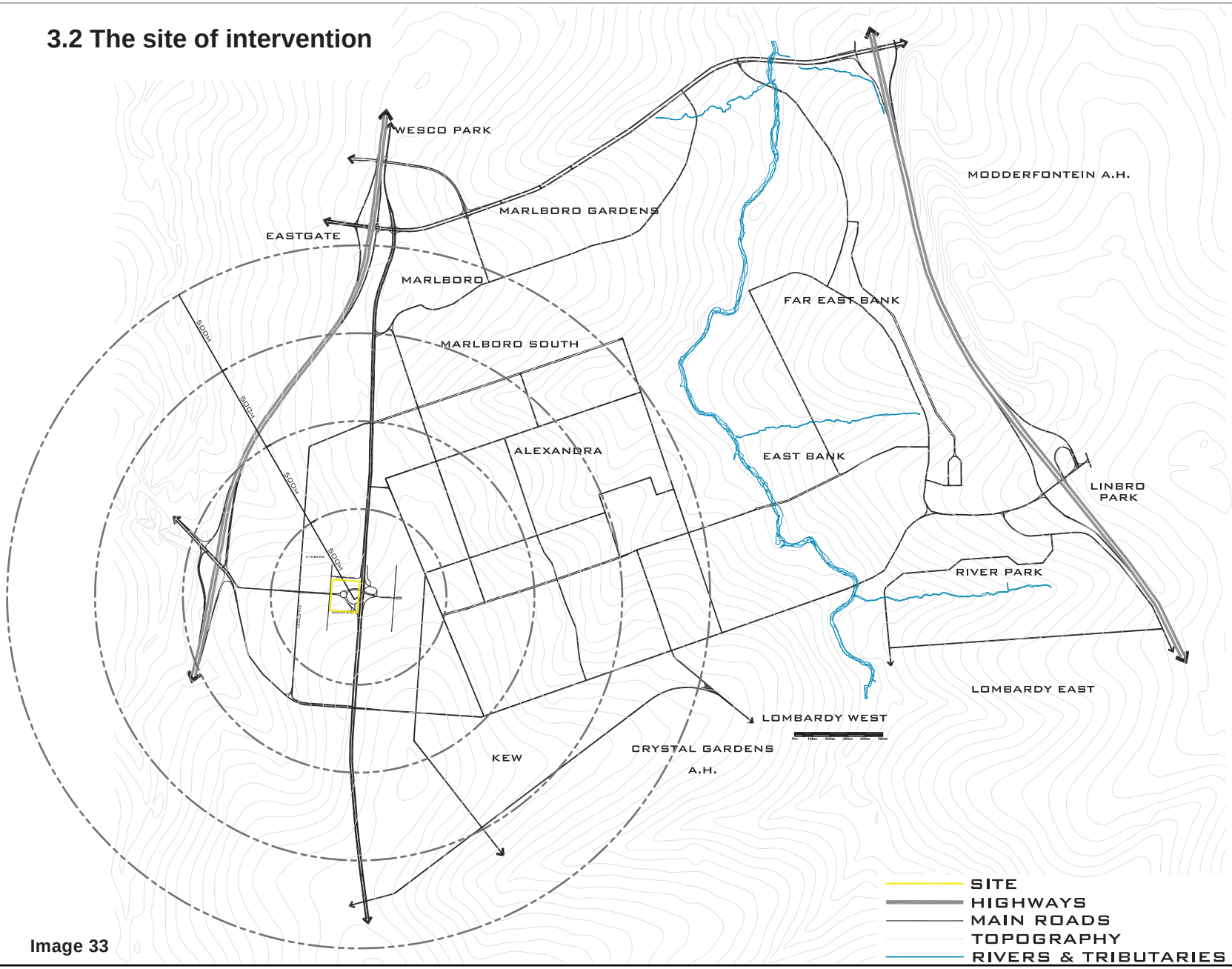


Image 33

Topography and roads

The topography does not define the development of Wynberg as it is located on the Highveld and is generally very flat. However, the topography does determine developments around the Jukskei River which runs through Alexandra. The almost non-existant variations in elevation allows for many different parameters relative to positions of infrastructure. The roads and highways which enclose the proposed site are unaffected by the topography, therefore it is very easily accessible.

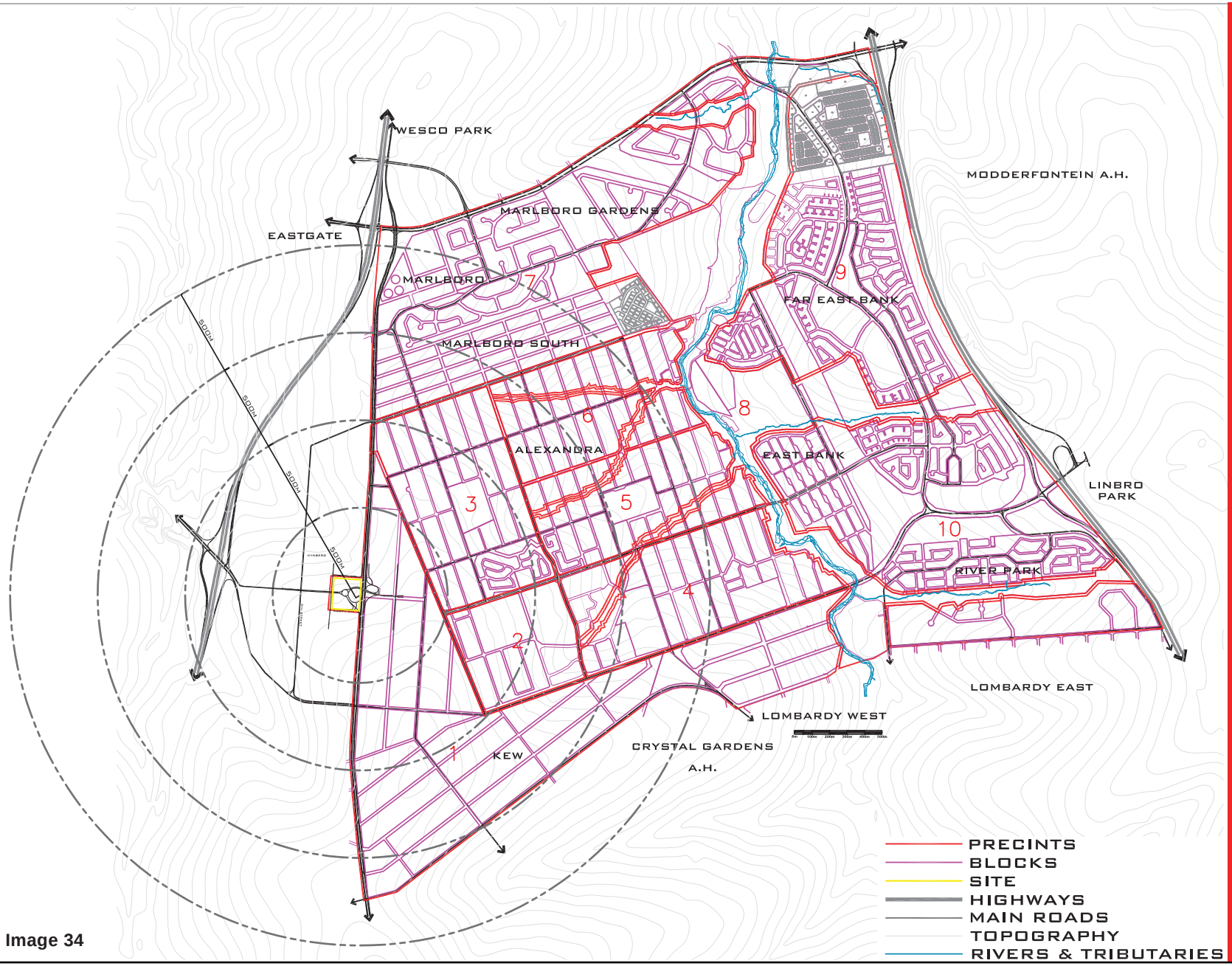


Image 34

Settlements

Guided by apartheid laws and rules, building is at its most dense in precents 5 and 6 where old core housing exists in Old Alex. Where buildings are set and built within close proximity to roads, the construction is guided along the typologies of informal shacks or clip on housing. Moving north and east away from 'Old Alex" settlement takes on the form of RDP and low density housing.

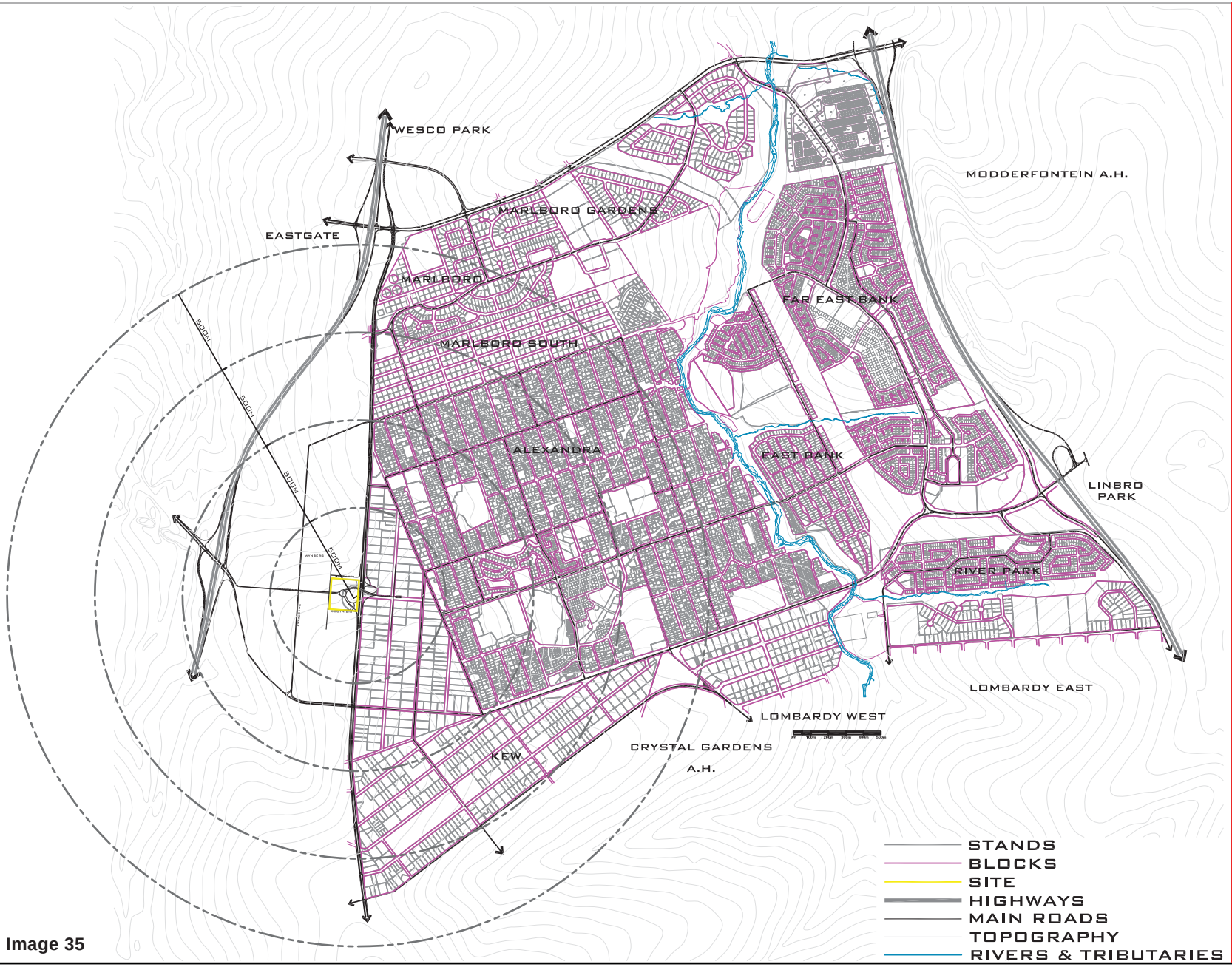


Image 35

People density

In Alexandra there is enormous pressure on the limited land due to high demand and high density levels. Old Alexandra is extremely dense, comprising predominantly low-rise housing, largely as a result of a history of poor urban planning. Residential density is much lower in East Bank, allowing the area to develop in a more orderly manner. High residential densities mean that there is a relatively vibrant and diverse commercial sector in Alexandra, but growth is restricted by residents' low income levels. **(www.btrust.org.za)**

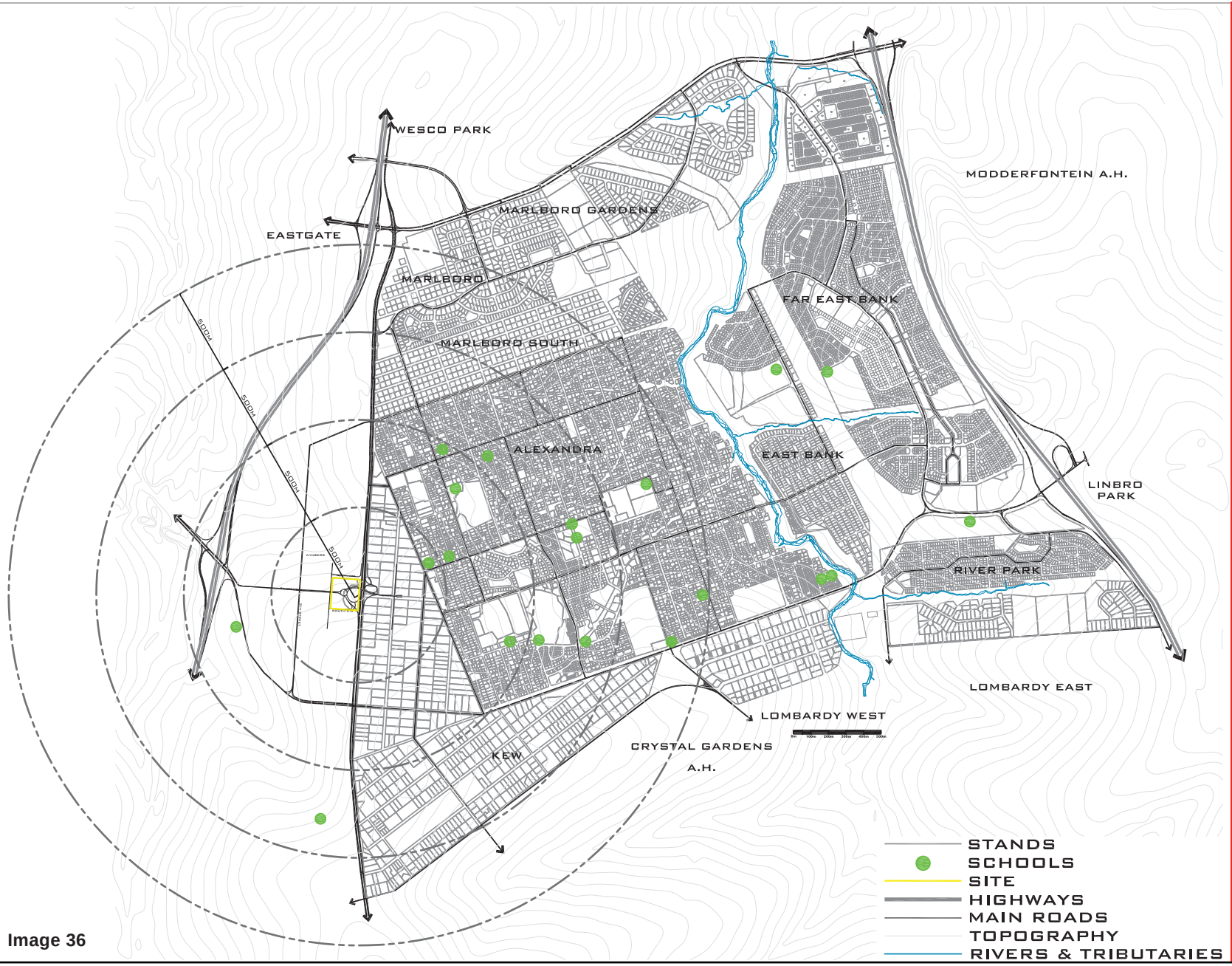


Image 36

Education

Education in Alexandra is limited to primary and secondary education and is easily accessible to all due to the location of schools placed at frequent intervals. Situated within the 2km radius of the proposed site are a number of schools. Many of these education facilities are located next to primary transport routes.

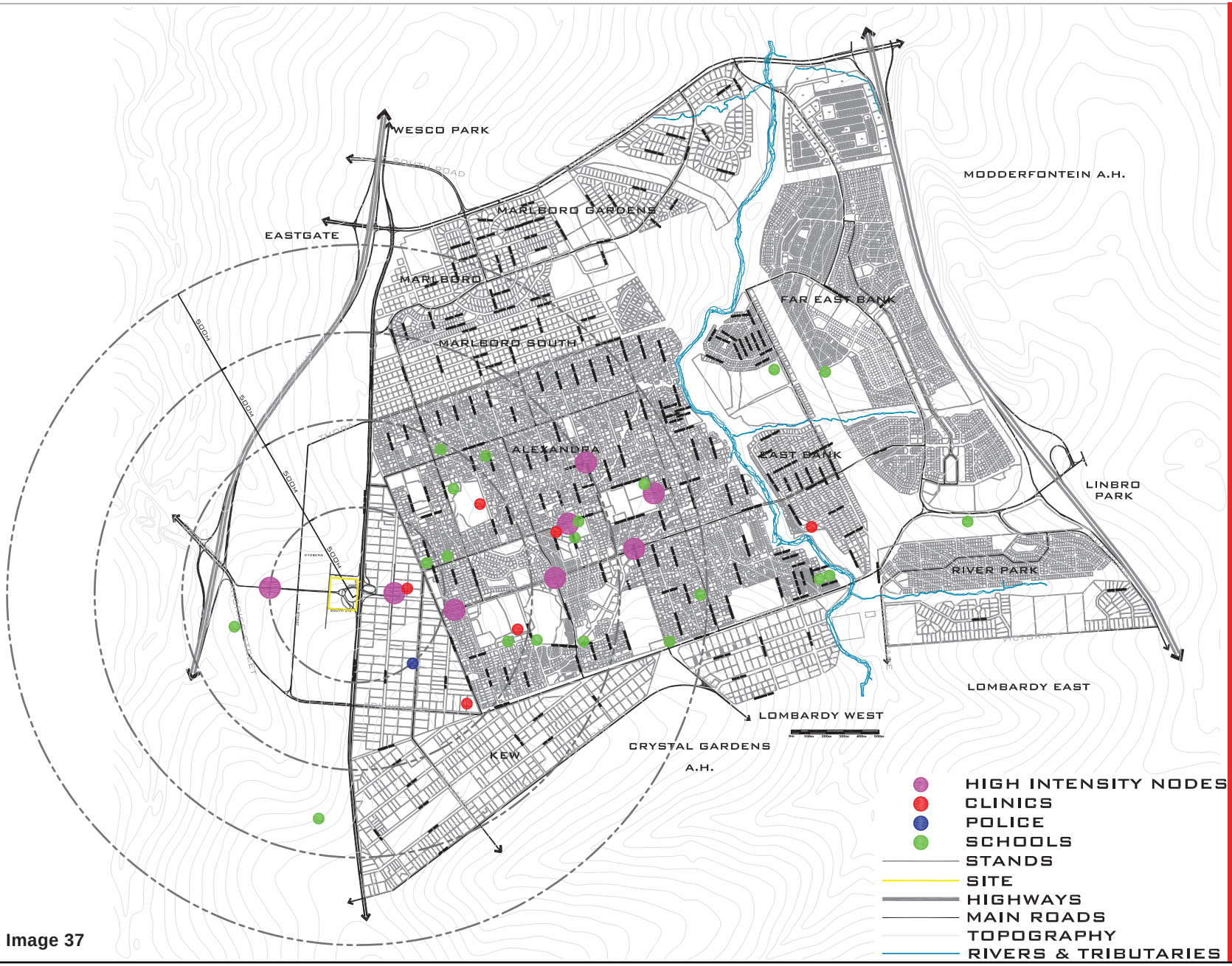


Image 37

High intensity nodes

High intensity nodes occur predominantly at major interchange nodes where transport routes intersect, allowing for stop-offs and increased socialising due to traffic. Retail buzzes around these intensity points and the majority of municipal functions such as the police, clinics and schools are located close to these points.

3.3 Local opportunities

Economic conditions around Alexandra are potentially very good. Growth in Sandton is overflowing into Wynberg and is translating into construction and renovation, and increasing rentals. Development to the east of the N3 is being driven by growth in logistics, IT and other sectors, as well as the construction of a Gautrain station in Marlboro. Alexandra has good physical linkages with Johannesburg, Sandton and Midrand. These linkages may improve in the future. More needs to be done to develop "virtual" linkages such as developing partnerships between Alexandra's businesses and those in the surrounding areas, and offering appropriate training. In addition, efforts should be made to ensure that businesses in Wynberg, Sandton, etc., source goods and services from Alexandra. Training in Alexandra should focus on skills that may be applied in Johannesburg's growth sectors, namely finance and business.

Short term goals which could be considered are:

- Various growth sectors in the region including commerce, construction and the automotive sector.
- Construction and commerce.
- Building commercial links between Alexandra's businesses and those in the sub-region.
- Skills training is needed to grow the subregional economy.
- Business skills development.
- Continuing with the building of low-cost housing.
- Provision of affordable rental accommodation.

Long term goals which could be considered are:

- Ensure continued growth in sub-region by piggy-backing on Gautrain development.
- Commerce, leisure and tourism development.
- Skills development for sub-regional economy.
- Business skills development.
- Developing new housing offerings, including franchised rental.

(www.btrust.org.za)

In conclusion, the proposed site sits squarely within a strong economic region. The potential for taking advantage of the available opportunities is definitely present - but contingent on having the necessary business and communications skills. Skills will be learned at the proposed development.

The township of Alexandra has a proud but tragic history, which ushered it into the new century in desperate need of regeneration.

Alexandra Township: Status in the Year 2000, August 2001



04_Case studies

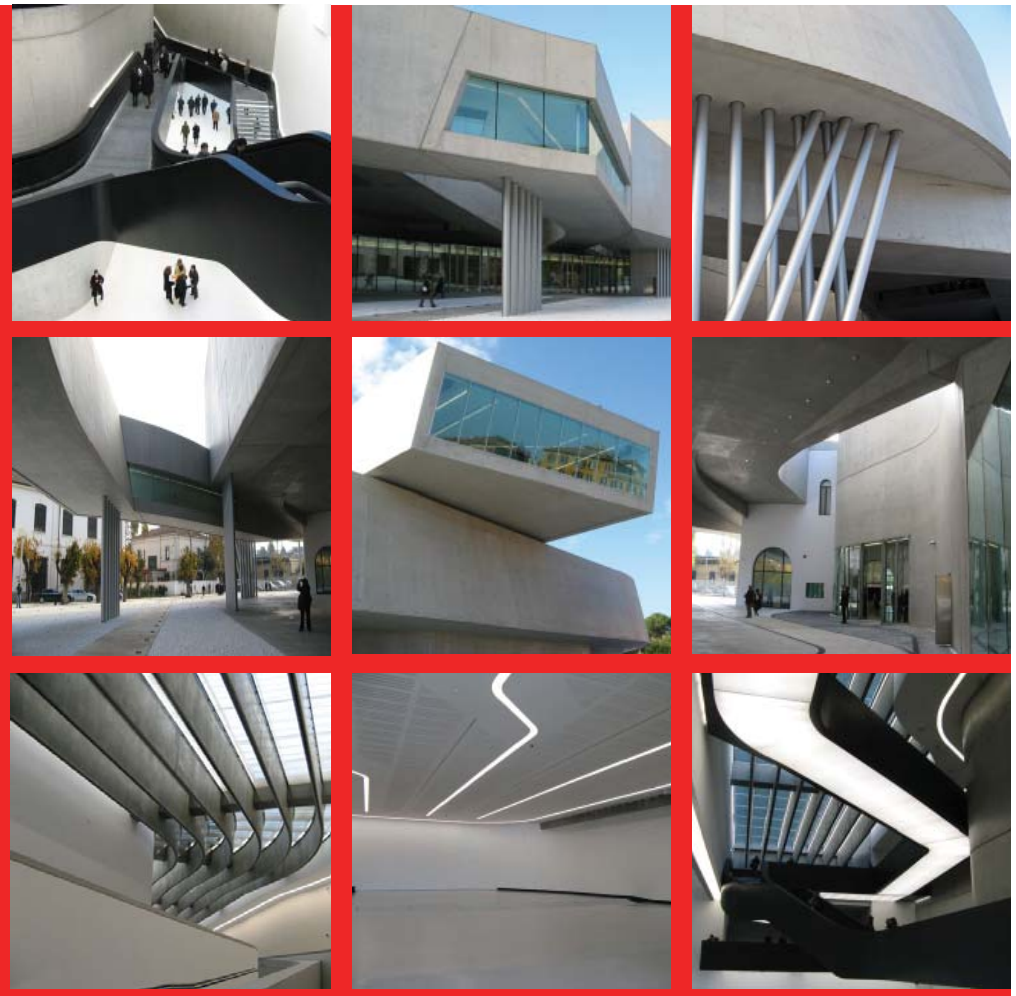


Image 38

4.1 Introduction to case studies.

The case studies have been divided into different issues so they can directly inform or pose questions for the proposed design solution.

Globally, there are various centres comparable to that of the proposed facility in this thesis. Similarly, these centres aim to introduce multi-media facilities to local community users, thus ultimately empowering people and improving their skills. However, each centre approaches multi-media differently, placing more emphasis on different elements in response to their needs. As a result, these centres can be considered as case studies in which their degree of success, can be analyzed, within the framework of the previously identified principles of multi-media, the digital divide and the local context.

4.2 MAXXI: Museum of XXI Century Arts, Rome, Italy.

MAXXI, the National Museum of XXI Century Arts, designed by Zaha Hadid, located in Rome's Flaminio quarter is the first Italian national institution devoted to contemporary creativity and conceived as a broad cultural campus.

This building can be seen as a significant influence on t he author's design process which is later explained in the document. The conceptual ideas of layering and weaving are visible just as they are in MAXXI. Similarly, the program of activities of the author's building and MAXXI are based along the same lines. In MAXXI there are– exhibitions, workshops, conferences, shows, projections, educational projects and above all, a laboratory for cultural experimentation and innovation, for the study, research and production of the aesthetic contents of our time.

(http://www.fondazionemaxxi.it)



Image 39

MAXXI was conceived to promote today's artistic expressions – which will become tomorrow's cultural heritage. Intended not only as place to exhibit art, MAXXI was also planned as a research workshop for different contemporary languages of design, fashion and cinema to establish a dialogue with art and architecture – its cultural mission inspired by three key words: innovation, multiculturalism and interdisciplinary.

The design concept for MAXXI was to move away from the idea of the museum as 'an object' and towards the idea of 'a field of buildings' accessible to all. The research done over time evolved into a concept of the confluence of lines, where the primary forces of the site are the walls that constantly intersect and separate to create both indoor and outdoor spaces.

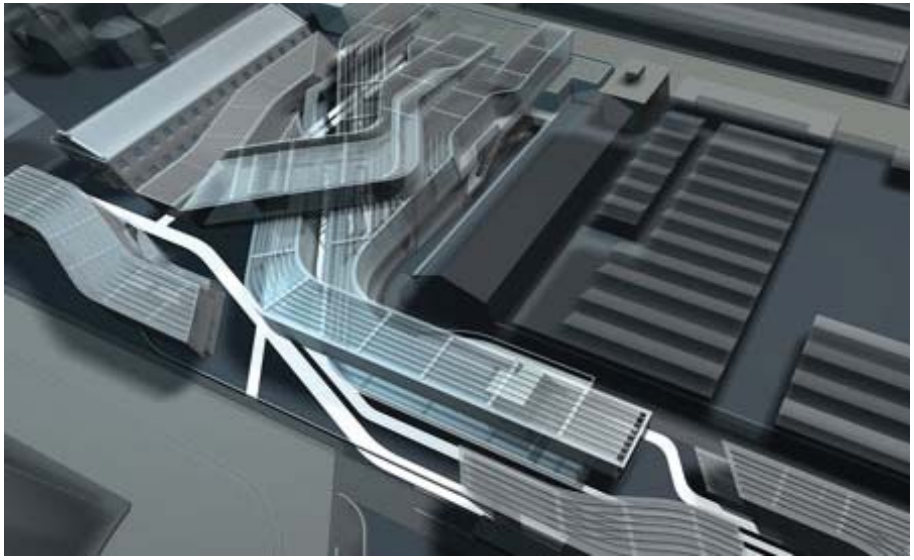


Image 41



Image 40

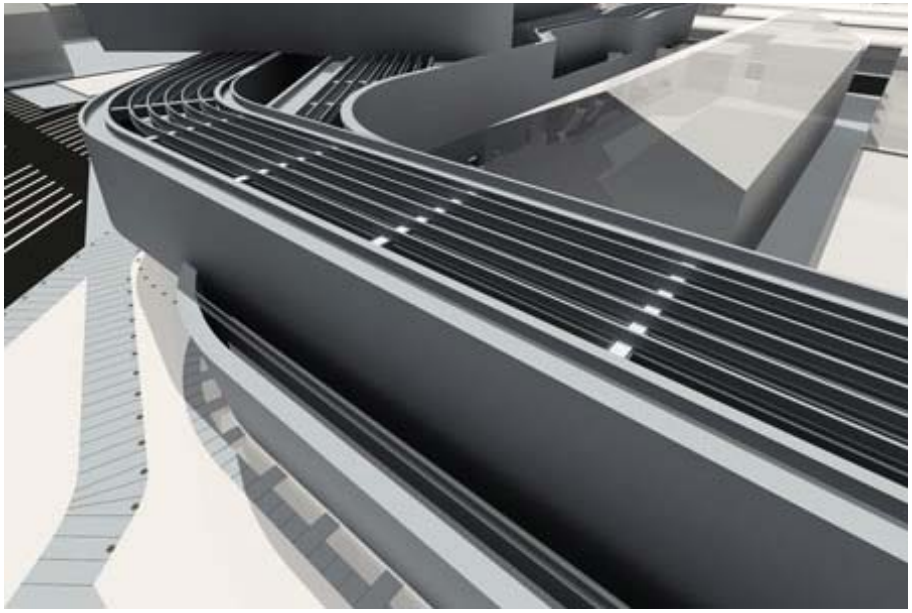


Image 42

The plan aligns itself with the two urban grids that regulate the town planning of the area and the new interpretation of these grids generates the geometrical complexity of the campus. The walls of the MAXXI create major streams and minor streams. The major streams are the galleries, and the minor streams are the connections and the bridges.

The site has a unique L-shaped footprint that meanders between existing buildings. Rather than being seen as a limitation, it was used to advantage, taking it as an opportunity to explore the possibilities of linear structure by bundling, twisting, and building mass in some areas and reducing it in others – thereby creating an urban cultural centre where a dense texture of interior and exterior spaces have been intertwined and superimposed over one another.

(http://www.zaha-hadid.com)

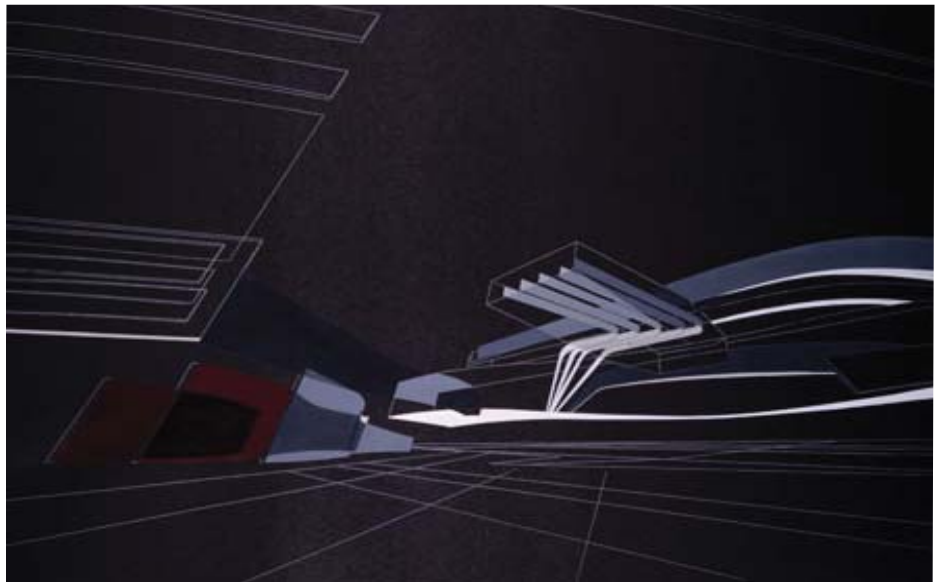
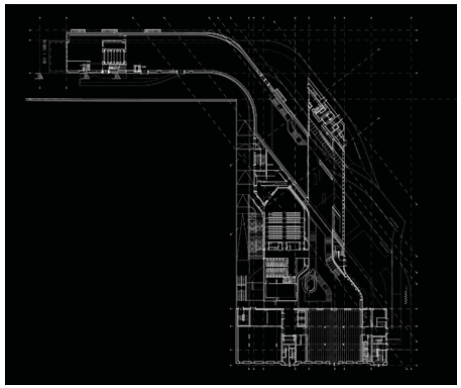
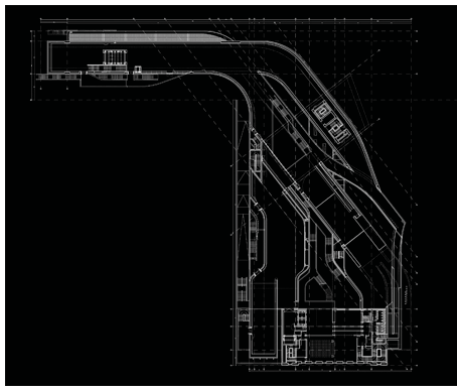


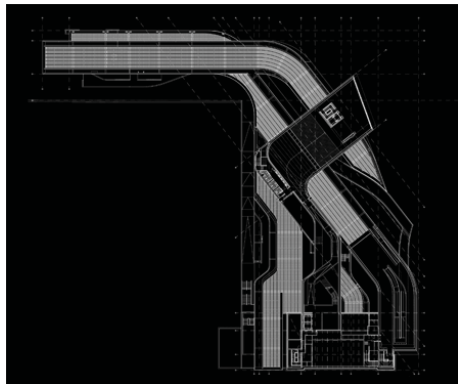
Image 43



Ground floor plan

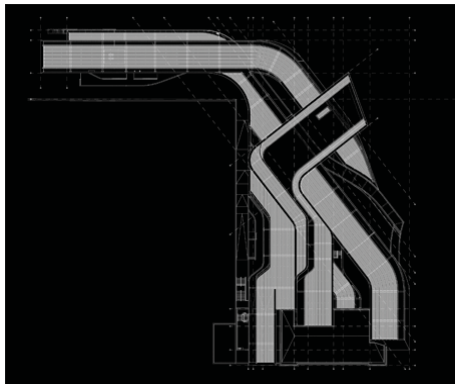


First floor plan



Second floor plan

Image 44



Roof plan



Image 45



Image 46

4.3 Asemic Scapes by Sarah Schneider

This project is a concept design for a 50 patient rehabilitation centre in Rainberg, Austria.

Schneider speaks of her inspiration from calligraphy for the design. “The project develops an architecture that uses rules of natural growth and connects both growth and ornament, with a landscape environment, topologically and calligraphically.”

The ornament creates a symbiotic relationship with the existing environment by framing existing topographic features and at the same time giving a feedback to the landscape by creating topographical irregularities. In the landscape the ornament starts to organize the ground by subtle terracing and it creates paths that break the clear definition of an indoor and outdoor boundary by running through the building, widening up to create bigger platforms and shrinking back to paths when leaving the building again.

This ornamented landscape topography develops the roof structure transforming from a plan calligraphy into a complex volumetric condition of overlay and envelope.

(http://www.dezeen.com)

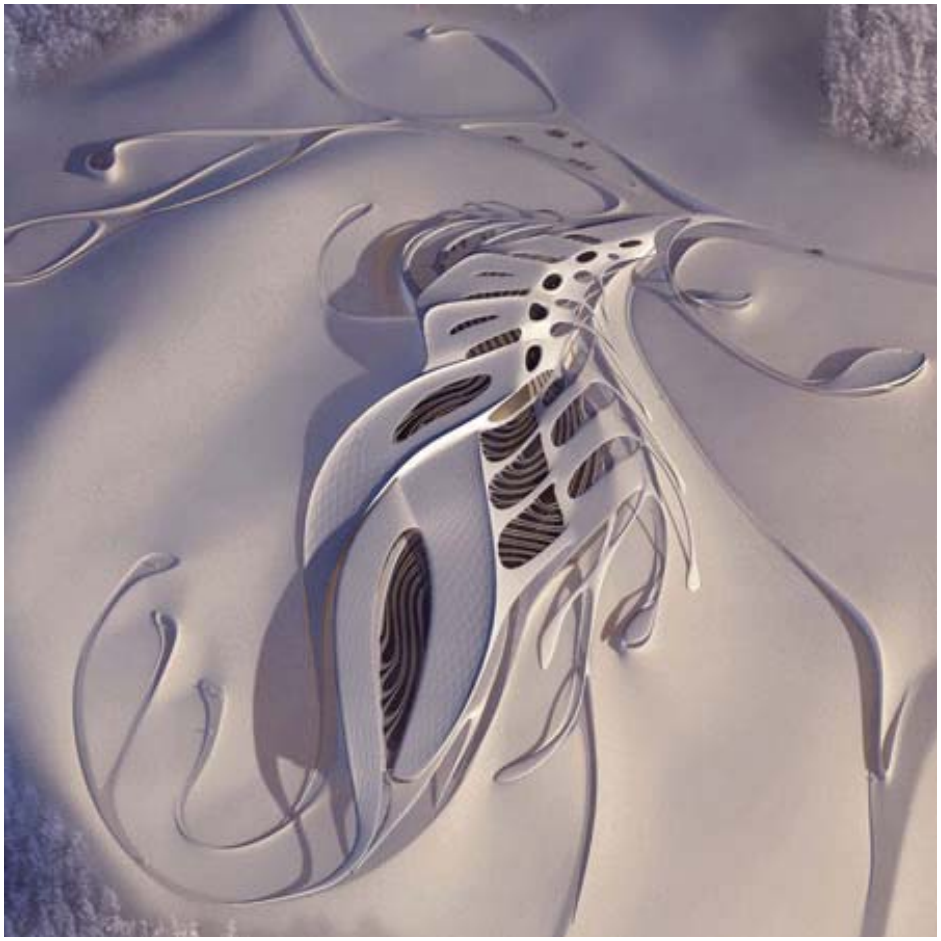








Image 47: Model of Asemic Scapes

Image 48: Plans of Asemic Scapes

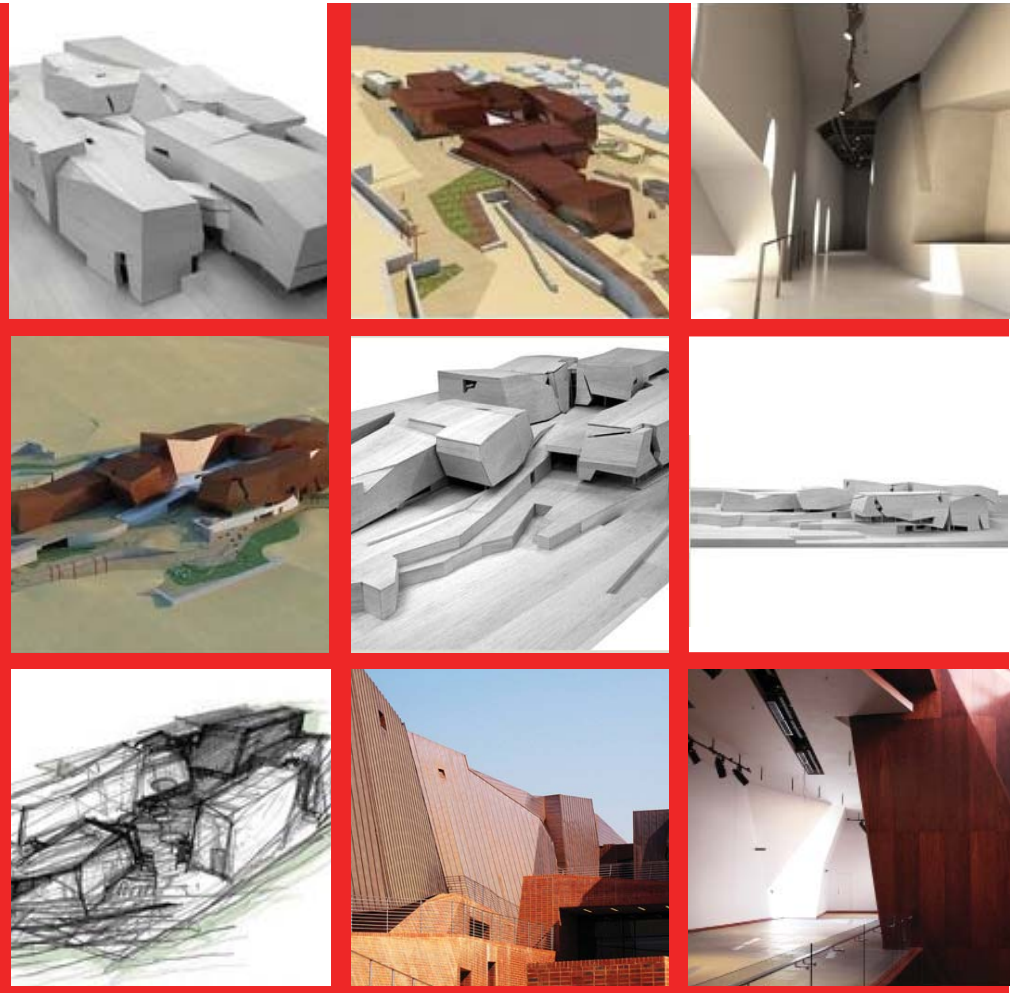


Image 49

4.4 //hapo, Freedom Park , Pretoria, South Africa

The //hapo is a museum dedicated to freedom of the South African people. It sits within Freedom Park, in Pretoria. The museum maps out points at which people have overcome oppression throughout our history. The museum includes a knowledge garden, storytelling and history spaces. //hapo was designed by The Office of Collaborative Architects (OCA), a collaboration between Mashabane Rose and Associates, GAPP Architects and Urban Designers and MMA Architects.

//hapo took on the shape it did in order to resemble boulders; this is done by sculpting the building frames using steel structures and overlaying them with copper. It blends into the landscape rather than imposing itself on it.

//hapo is a place where the historical, cultural and spiritual past of South Africa comes alive – a place where people are able to reach a new understanding of a complex past, explore the diversity that is South Africa and create shared dreams for the future. It is envisaged that the permanent exhibitions will be structured around social spaces that allow for live interpretation, performance and storytelling. In future, many of the exhibitions will include a selection of cultural and historical objects that can be handled, discussed or used, transforming the visitor from a spectator to a participant.
(http://www.freedompark.co.za)

The hard landscaped surfaces, which surround the building, have been gently shaped to echo the boulder forms of the building and to extend the boulder theme into the landscape. Cracks and fissures of natural boulders changing over thousands of years are mimicked in the design of the windows with their deep-set openings and complex irregular shapes, permitting just enough natural light to reinforce the sense of a dimly lit cave. Internally the interconnecting boulders expand and contract providing exhibition spaces which lean and fold through the large volumes and compressed spaces alluding to the mountainous shelters of traditional healers and the Khoisan.
(http://www.worldarchitecturenews.com)



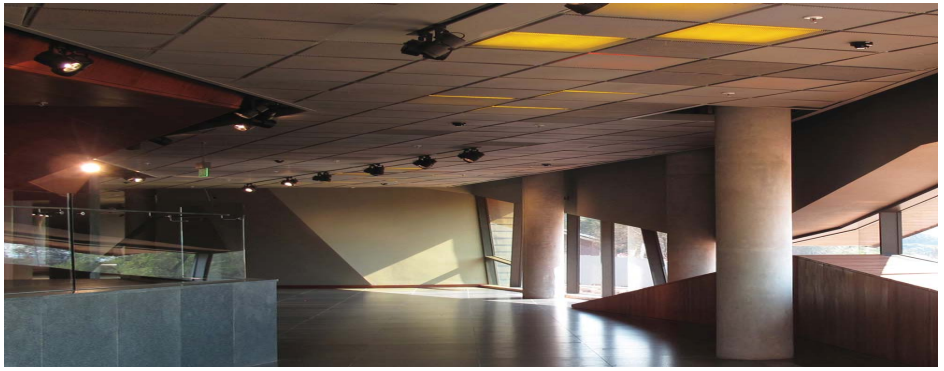


Image 50 & 51



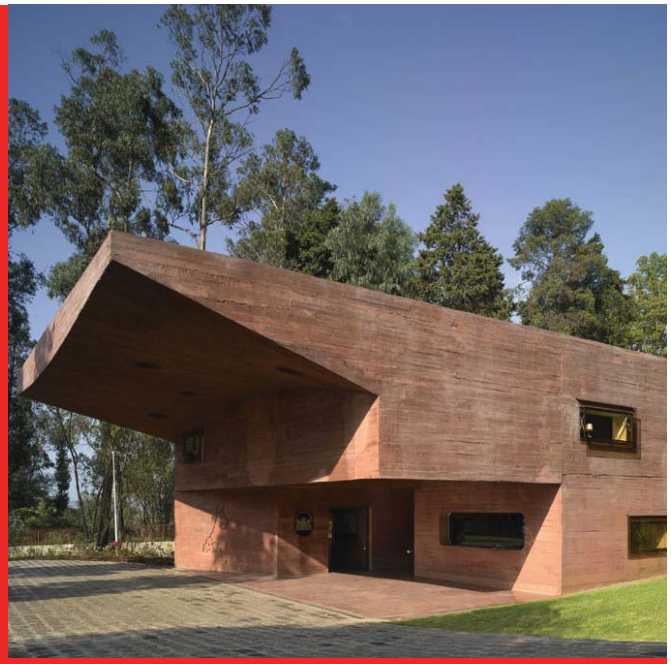






Image 52

4.5 Royal Netherlands Embassy, Addis Ababa, Ethiopia.

The architects' (Dick van Gameren and Bjarne Mastenbroek) guiding principle was to preserve and respect the topography of the surrounding landscape while addressing the functional requirements of a working embassy.

The main building, an elongated horizontal volume, cuts across the sloping terrain on an east– west axis. Walls, floors and ceilings are pigmented the same red-ochre as the Ethiopian earth and are uniformly composed of concrete, creating the effect of a cave-like space, reminiscent of the rock-hewn architecture of Ethiopia. By contrast, the roof garden with its network of shallow pools alludes to a Dutch water landscape.

An unashamedly contemporary and simple organization of spaces, the Dutch Embassy in Addis Ababa overcomes the complexities of security and surveillance normally associated with the design of embassy compounds, intersecting with the landscape to create new and unexpected relationships with the host site.

In its conception and daily operation, the building responds to its social and physical context with inventive design and poetic sensibility. This is an architecture that works with its environment, reducing the use of mechanical services and relying instead on natural ventilation and high insulation. The project's sensitivity to process has left its mark in the raw character of its formation -- another delicate reminder of how buildings, as formations of material culture, can register and enhance spaces of encounter.
(http://www.archidose.org)

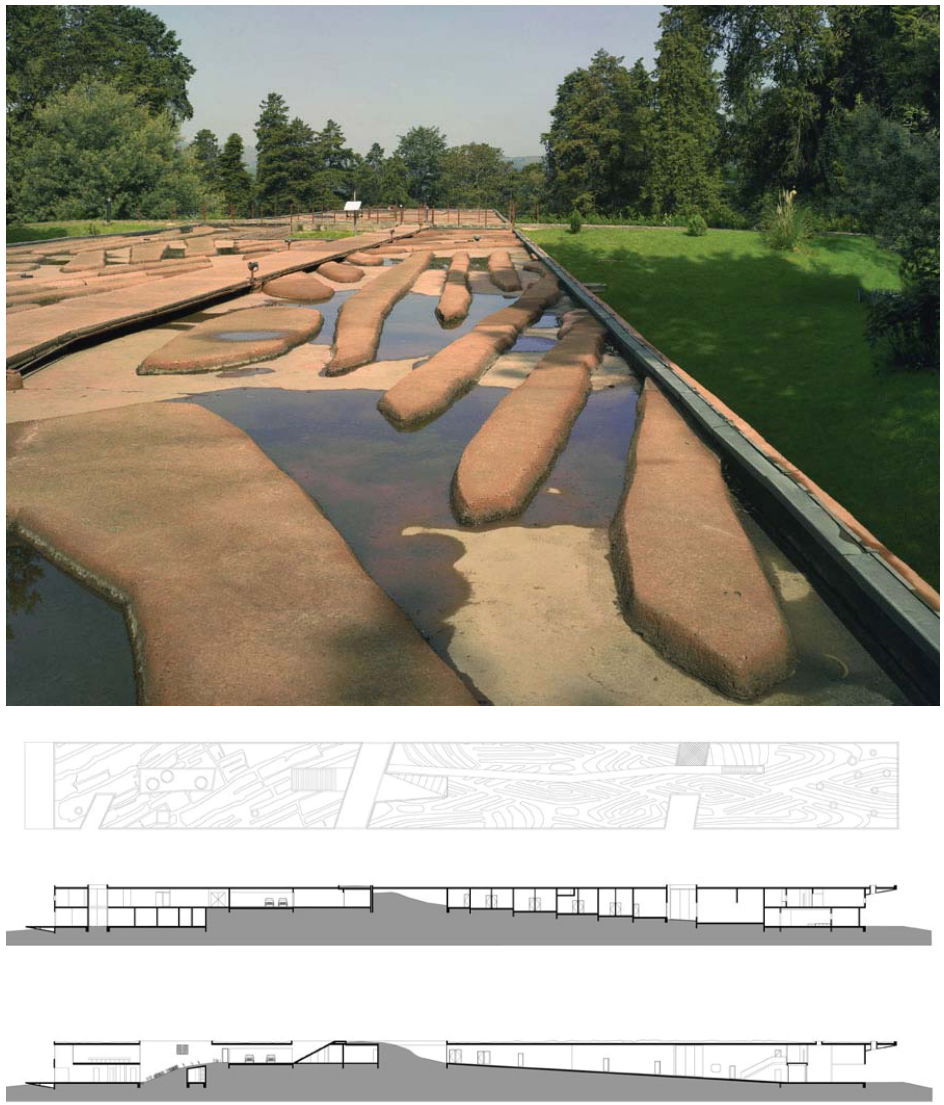


Image 53 & 54


CAPTAIN CANADA
Has Arrived!
Watch The
Latest Episodes
on RPTV!
CATCH da FLAVA
THE ECONOMICS OF GANG DRUG DEALING
THE PRESSURE TO BE UNIQUELY THE SAME

Image 55

4.6 Regent Park, Ontario, Canada.

Formerly the centre of the Cabbagetown neighbourhood before it underwent a major revamp. 41% of the population living in Regent Park are children 18 years and younger. The average income for Regent Park residents is approximately half the average for other Torontonians. A majority of families in Regent Park are classified as low-income, with 68% of the population living below Statistics Canada's Low-Income Cut-Off Rate.

Regent Park's residential dwellings are entirely social housing, and cover 280,000 m² which comprise the community. Regent Park is Canada's oldest and largest social housing project, having been built in the late 1940s. The Toronto neighbourhood then known as Cabbagetown was razed in the process of creating Regent Park.

In the last two decades Regent Park has also become an immigrant settlement community, as immigrants facing difficulties settling in Canada end up living there. Thus, the community is always viewed and administrated as a transitional community.
(www.wikipedia.org/wiki/Regent_Park)

Regent Park Focus Youth Media Arts Centre was established in 1990 in Regent Park as part of a provincial government initiative to promote health in vulnerable communities across Ontario.

What can be learnt from such a media arts centre? By providing a multi media skills centre in Alexandra, the community will build and sustain healthy and economically secure lifestyles by improving their lifeskills. This new centre will seek to increase civic engagement and inspire positive change by giving the users the tools and support to create better lifestyles as Regent Park does by offering youth the chance to do artistic works and media productions.

Youth in Regent Park are encouraged to work collectively to develop resources that explore issues of relevance to them and their communities. These resources include video, radio, music, photography, magazines and graphic arts.

"Today was another great experience for me…we actually got a workshop on how to use a video camera, which was pretty cool… I guess I felt pretty proud of myself for finally learning how to use a video camera properly."
- Jayanthini Kandasamy, participant



Image 56

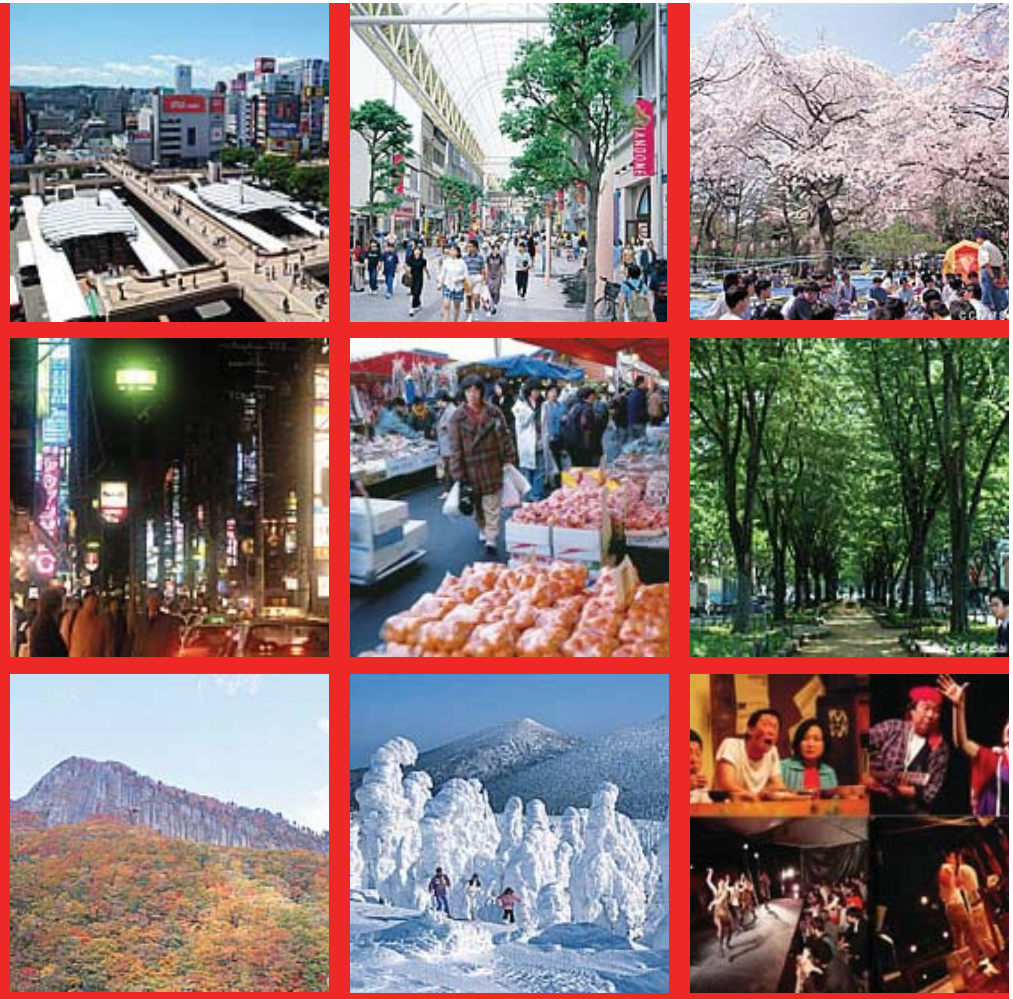


Image 57

4.7 Sendai Mediatheque, Japan.

The Mediatheque has a transparent facade which allows for the revelation of diverse activities that occur within the building. Along the main facade the floor slabs seem to be floating within the space connected only by the 13 vertical tube steel lattice columns that rise up from ground floor to roof, similar to the trunks of trees of a forest.

The tubes are both structure and vector for light and all of the utilities, networks and systems that allow for technological communication and vertical mobility, including elevators and stairs. Each vertical shaft varies in diameter and is independent of the facade, allowing for a free form plan which varies from floor to floor.

The main entrance leads to a double height hall that consists of an information counter, an open square that supports film screenings and other events, a café and retail shop. Through the transparency of the facade and the continuation of the curtain wall to the ground this space reads as a continuation of the surrounding city.

On the ground floor the administrative offices are placed behind a translucent screen. The second and third levels house the Shimin Library and include a browsing lounge with internet access. The fourth and fifth levels contain gallery space; one level an exhibition space with moveable walls and the other an exhibition space with mainly fixed walls with rest area seating. The sixth level houses the multimedia library dedicated to audio-visual and a 180 seat cinema.

The diverse programming creates an intricate spatial rhythm which is defined by varying degrees of public spaces; communal spaces of activity and individual spaces of repose and solitude.
(www.galinsky.com/buildings/sendaimediatheque)

In the beginning plans were called for a multifunctional facility comprised of a library, gallery and visual media.

Subsequently, plans changed so that instead of simply being a “mixed-use” facility, it was intended to encompass a larger sphere of functions that would allow the facility to operate as a unified “mediatheque” with common goals to respond to a continuously changing information environment and users’ diverse needs.



Image 58

The concept of Sendai Mediatheque is about the flexibility that serves the needs of people by supplying the latest knowledge and culture. It maximizes networking potentials not through terminals but nodes.

The service it provides includes the space for presentation, such as gallery and theatre, studio and workshops. Artworks and film works are exhibited for people to appreciate. Media-oriented lifelong education and cultural activities are promoted.

The latest knowledge and information are supplied through the Sendai Shimin library. The environments, in which anyone can collect, accumulate, edit, and dispatch information, are provided.
(www.smt.city.sendai.jp/en/smt/about/character/)

Design Architect (Toyo Ito) notes:
“Two operations are proceeding simultaneously at opposite extremes: one on the construction site, the other on the computer screen. The site is filled with steel; countless slabs and pipes are suddenly introduced into the middle of the urban space. Gradually they are being assembled to become one massive steel sculpture. The sound of dozens of welders echoes from morning until night as sparks fly from their torches, and the steel dust dyes the air like smoke belched from a chimney. This work seems too primitive for a construction site in the computer age; bringing things into evidence seems like a violent act. Meanwhile, innumerable drawings flow across an enormous screen: ground plans, side plans, cross-sections, exploded views, facilities plans, details; plans abandoned when designs changed, plans being studied; a panoply of two-dimensional architectural signs. Superimposed, they appear and vanish by turns, flowing ceaselessly. They seem to follow the trail of the designing process. This space has nothing to do with things, being constituted only by the manipulation of signs folding over and into each other without end. Blurring Architecture is architecture that unsettles. By pursuing two kinds of architecture at once I am attempting to blur the field of architecture; in one instance by making things visible to the extreme, and in the other by purely spatialising the flow of signs.”



Image 59



On the left is an aerial photo of the thesis site with an aerial photo of Sendai Mediatheque super imposed over it.

This scheme would work in a sense that the building can be located centrally and use the site accordingly to maximise the space around it. It is at the point of interchange and overlapping functions. As the building is transparent, the different functions can viewed from far and wide.

On the left is a photo of Sendai Mediatheque imposed onto the thesis site. Such a building like the thesis basis is about connectivity, transpareny and accommodating different functions.

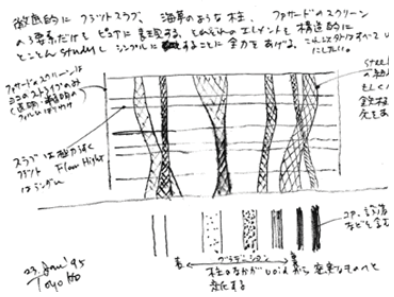


Image 60

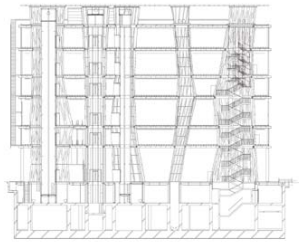


Image 61


CITY OF GOODWILL
SEATTLE
CORPORATE SEAL OF THE CITY OF SEATTLE
1869
THE MOORE
BOX OFFICE

Image 62

4.8 Seattle Public Library, Seattle, Washington

Seattle Public Library houses the library's main collection of books, government publications, periodicals, audio visual materials and the technology to access and distribute information from the physical collection online.



Image 63

The building is divided into eight horizontal layers, each varying in size to fit its function. A structural steel and glass skin unifies the multifaceted form and defines the public spaces in-between.

The entrance level on 4th Street, one of Seattle's main thoroughfares, houses the Children's Library and foreign-language resources.

Rows of escalators lead to the 5th Street "Living Room" lobby located under a sloping glass wall. The lobby can also be reached directly from a covered walkway than runs the length of the 5th Avenue facade.

The "Dewey Ramp"; a four-story ramp allows people to browse through books in a continuous sequence. The author wants to reflect this 'passage' of learning in the proposed centre by creating a journey through the use of different levels and inter changing paths.

As this library is a custodian of books, the author perceives the new centre to be seen as a custodian of the multi media, a showcase for new information, a place for thought, discussion and reflection.

The fact that the contents of a whole library can be stored on a single chip, or the fact that a single library can now store the digital content of all libraries, together represent potential rethinking: new forms of storage enable the space dedicated to real books to be contained; new forms of reading enhance the aura of the real book.
(www.arcspace.com)

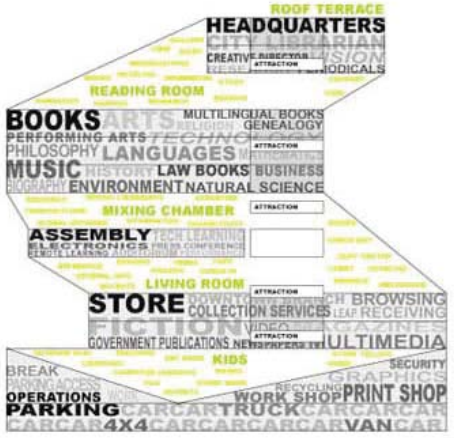


Image 64

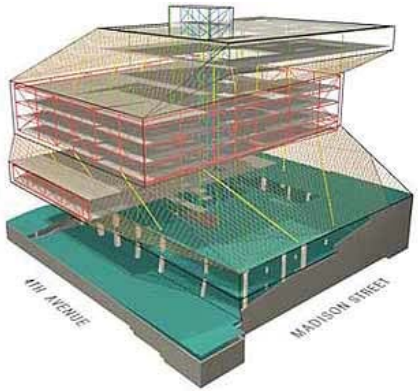


Image 65

Papenfus needed a name for the new township. Twala recalls that Papenfus asked his grandparents what name was suitable. They replied: “Your wife, Alexandra, loves people.” So it became Alexandra.

Lucille Davie, Why Alexandra survived, 27 October 2003



05_Principles to programme

5.1 Skills and learning principles

Users will enter the proposed facility with preset knowledge, beliefs, and attitudes gained through daily life. This will influence how they filter and interpret what they are learning. If a learner's knowledge is robust and accurate and activated at the appropriate time, it provides a strong foundation for building new knowledge. Learning occurs within each individual as a continual process throughout life. People learn at different speeds, so it is natural for them to be anxious or nervous when faced with a learning situation. Learning results from stimulation of the senses. In some people, one sense is used more than others to learn or recall information. Four critical elements of learning are:

- motivation
- reinforcement
- retention
- transference

Having considered such ideas, principles have been adopted in this thesis which can be used as a mechanism for skills learning evaluation. By consideration of these various principles, various initiatives can be identified as 'skills learning friendly' or not.

Considering the selected site in Alexandra, one surrounded by cultural and social diversity, multi-media skills learning has the potential of succeeding and developing in a uniquely South African context if the following principles are taken into consideration and judiciously used as inputs into the process of design.



Principle 1: **Diversity**
By incorporating education with mechanical instruments through multi-media tools a diverse range of job opportunities can be created and skills gained to further the opportunity of finding a job, empowering the people of Alexandra and resulting in decreased competition within an already saturated job market.

Principle 2: **Dialogue**
Verbal exchanges between residents, non-residents, South African citizens and foreigners of Alexandra encourages the interaction and dissemination of cultural and social knowledge as well as the necessary gain of digital literacy for the digitally disadvantaged . Such understanding is absolutely vital if the threat of xenophobia is to be mitigated.

Principle 3: **Integration and education**
Through the integration of learners, educators and mentors, education and skills such as digital literacy and putting to work what has been learnt can be accessed and transferred.

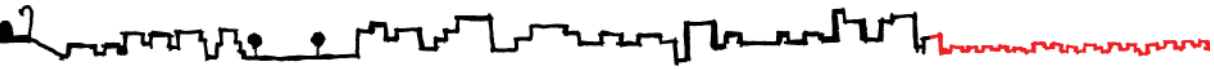
Principle 4: **Thresholds**
Connecting the thresholds between the digitally disadvantaged, digital material and the local context allows for an authentic connection between the three.

Principle 5: **The current situation**
The current activities and facilities on and around the site need to be taken into consideration.

Principle 6: **Transition**
The site (Rautenbach Square) is situated between Pan Africa Mall and Grayston Drive off De Villiers Graaff Motorway. It is the linkage between Alexandra Township and Sandton. This has become a major hub of transition. Using this hub, the site utilization can be maximised by people flow.

Principle 7: **Enhancing local needs**
A vast array of business's (cooking, craftsmanship, vendors etc.) take place on and around the site. Bringing them together under 'one' roof can stimulate and better the local economy.

Principle 8: **Learning spaces**
By creating learning spaces and spaces that learn, the user will maximise his chance of empowering himself. These spaces will range from small to bigger spaces, private to group spaces.



5.2 Questionnaire

A limited survey was conducted by the author in order to assess the need for and desirability of a community based multi-media facility in Alexandra where persons of all ages would have access to, both during and after working/school hours.

The survey was conducted by face-to-face interviews with persons living in Alexandra. The interview process comprised an explanation of the proposed development and then requesting the respondents to document their responses on their individually issued questionnaire form.

The questionnaire was so designed as to ensure easy to understand Yes/ No responses thereby minimizing the time demand on the respondent. A total of eight Yes/No questions were posed. A section for “Any other comments” was also included for those who felt the need to be more expansive.

A sample of the questionnaire form is shown in Annexure 1.
A total of 43 written responses was received. This data was then tabulated and analyzed as shown in Annexure 2 for ease of graphical representation.

The results of the survey are shown diagrammatically in the pie-charts that follow.

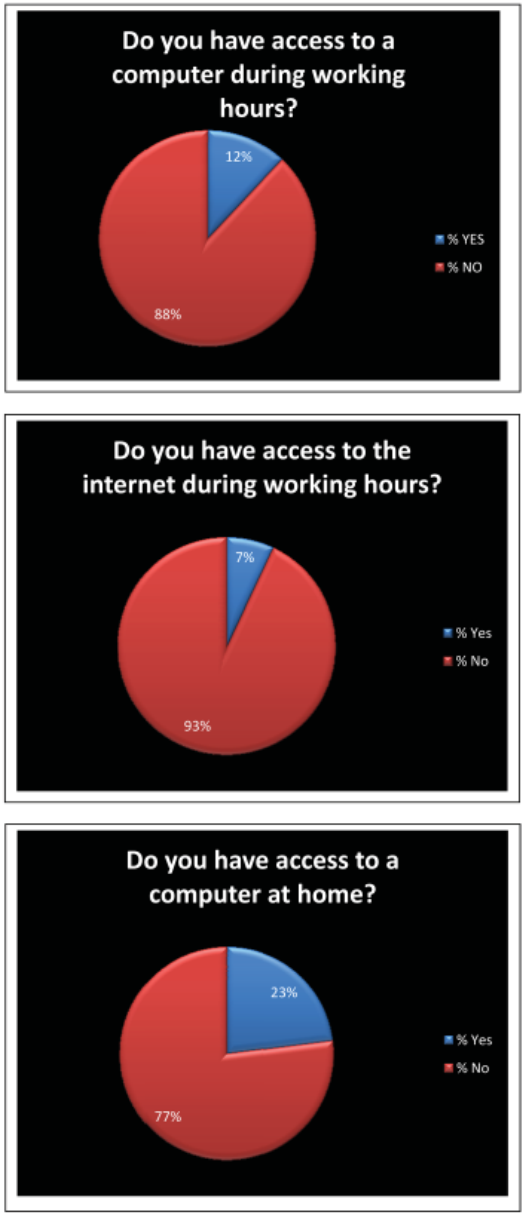
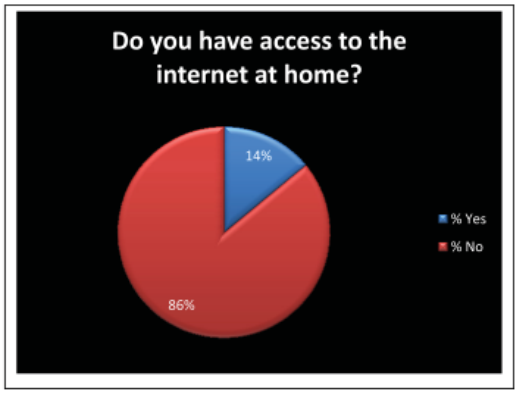
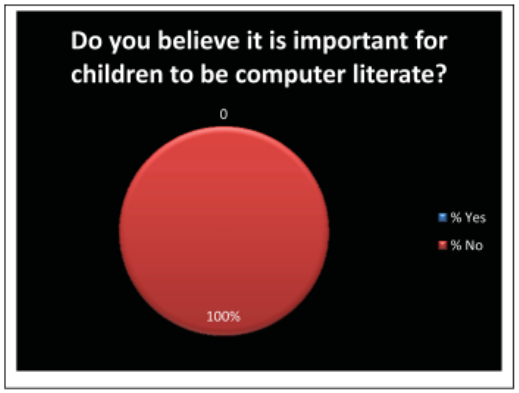
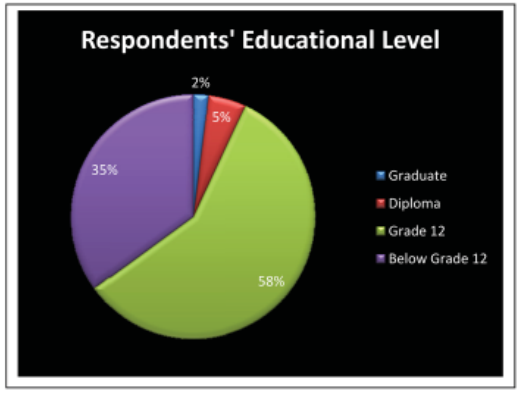
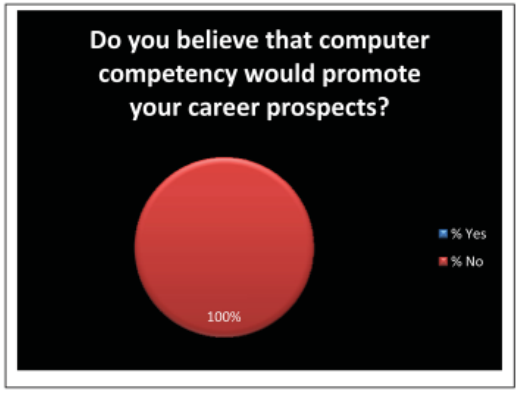


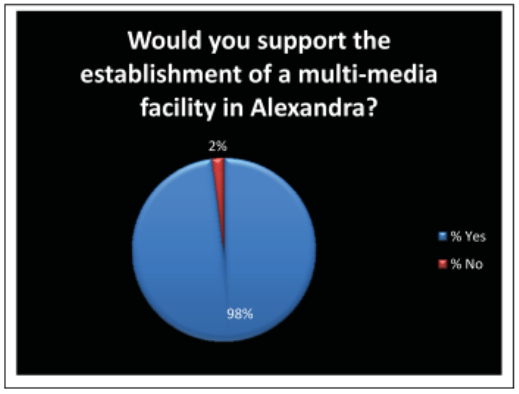
Image 66

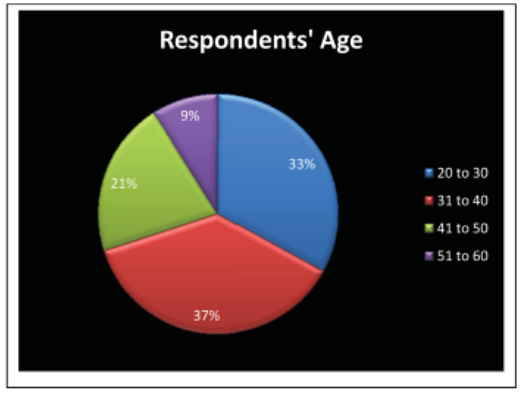

Do you have access to the internet at home?
14%
86%
% Yes
% No

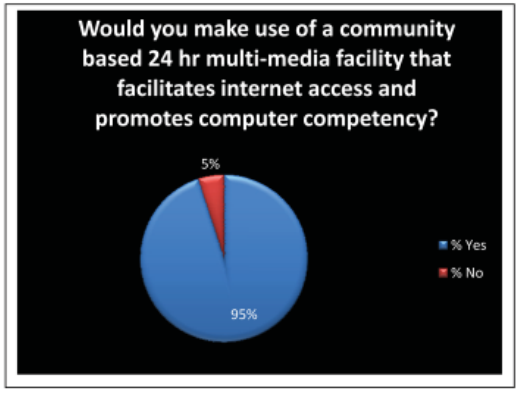

Do you believe it is important for children to be computer literate?
0
100%
% Yes
% No

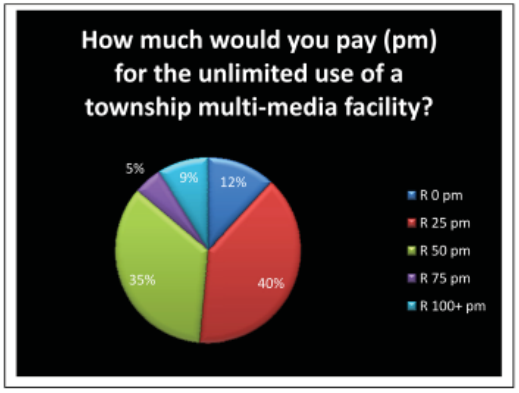

Respondents' Educational Level
2%
5%
35%
58%
Graduate
Diploma
Grade 12
Below Grade 12

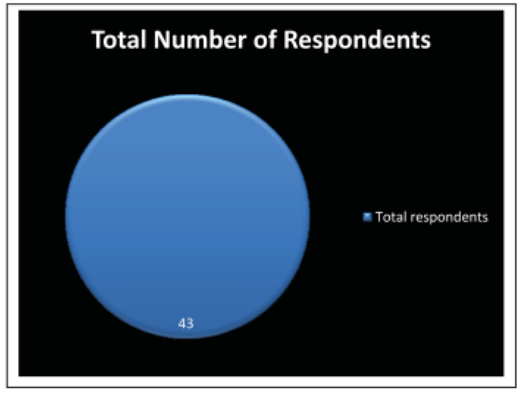

Do you believe that computer competency would promote your career prospects?
100%
% Yes
% No


Would you support the establishment of a multi-media facility in Alexandra?
2%
98%
% Yes
% No


Respondents' Age
9%
33%
21%
37%
20 to 30
31 to 40
41 to 50
51 to 60


Would you make use of a community based 24 hr multi-media facility that facilitates internet access and promotes computer competency?
5%
95%
% Yes
% No


How much would you pay (pm) for the unlimited use of a township multi-media facility?
5%
9%
12%
35%
40%
R 0 pm
R 25 pm
R 50 pm
R 75 pm
R 100+ pm


Total Number of Respondents
43
Total respondents

Of particular interest were the spontaneous comments received. From these there clearly exists a very definite hunger for up-skilling and being computer literate. A sample of the written responses comments follows:

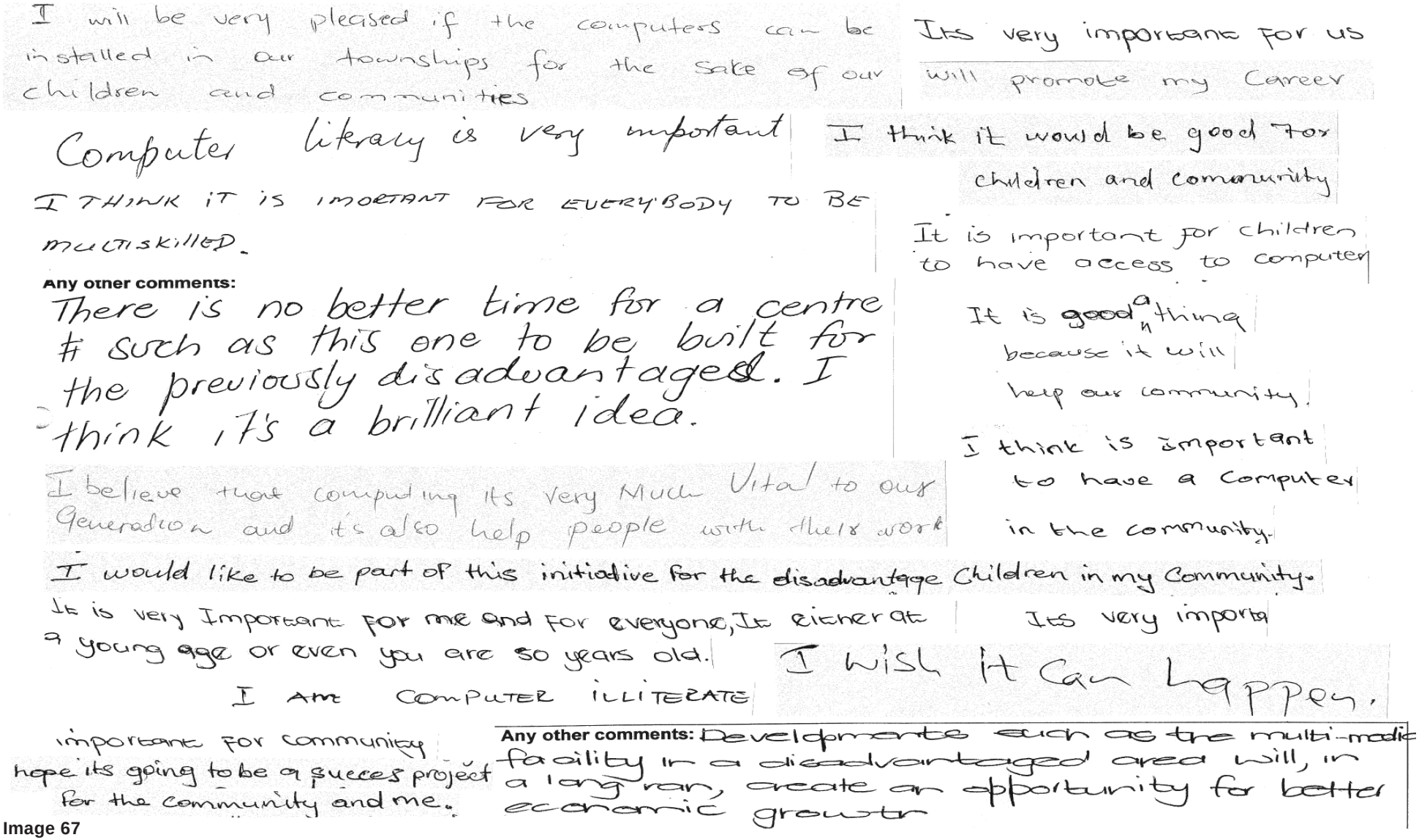


Image 67

Survey Conclusions

The survey conclusions can be summarized as follows:

- The respondents age ranged from 22 to 59 years of age, both male and female

- The respondents educational levels ranged from Graduates to Grade 10.

- The majority of respondents (88%) do not have access to a computer during working hours and an even greater percentage (93%) do not have access to the internet during such hours.

- The greater majority of respondents (77%) do not have access to a computer at home and an even greater percentage (86%) do not have access to the internet at home.

- 100% of respondents agreed that computer skills competency would enhance their career prospects. Of the 88% who do not have access to a computer in the work environment, 19% of these have a computer at home thereby indicating the personal value placed on being computer literate.

- 100% of respondents agreed that it is important for children to be computer literate.

- 95% of the respondents stated that they would make use of a community based multi-media facility where computer skills can be learned and computer usage facilitated.

- 98% of the respondents stated that they would support the establishment of a multi-media facility in Alexandra.

- The majority of respondents (88%) stated that they would be willing to pay for using such a facility. The preferred range of monthly fees is R25 to R50 per user per month (75%). A small percentage (9%) are willing to pay R 100+ per month.

- Interestingly respondents with lower levels of education (below Grade 12) are willing to pay above the average for the use of such a multi-media facility. No such respondent indicated that he/she expected such service at no cost.

- 100% of the comments under the questionnaire “Any other comments” indicated that the respondents supported such a development and viewed computer literacy as an essential tool in their own personal development as well as that of their children – a tool which is currently not available nor easily accessible in disadvantaged areas such as Alexandra.

In conclusion, the proposed multi-media centre in Alexandra is an essential facility which is sorely and urgently lacking and one which, beyond any doubt, would be welcomed by the residents of the township.

5.3 Some Associated Complexities

Spaces in Alexandra differ from each other. Different programmatic complexities must be considered such as social hierarchies, gender relations and economic status when deciding on structuring space and a programme.

Some important factors that the multi-media learning facility should respond to programmatically are listed below.

- Alexandra has energy and the programme should respond to the vibrant life of this township.
- As stated earlier, the programme will include all people; right from pre-schoolers to pensioners. The facility should cater for the everyday needs of the users that require multi media.
- The facility should encompass a diverse range of functions that will empower the lives of the digitally disadvantaged.
- The functions of the facility and especially the spaces that will be required must be flexible to respond to specific needs or events.
- The programme must consider funding such a facility and take into consideration local entrepreneurs.
- Exposure must be made for those working within the facility.
- The programme must take into consideration the economic status of the users and also provide for those that can pay and those that can’t.
- The particular needs of the physically disadvantaged need to be considered.



5.4 Proposed Programme

History has shown that economic, cultural and social sustainability in Alexandra is intricately linked to and intertwined with the buzz of life on the streets of the township. Questionnaire results prove that residents do not want to be excluded nor isolated from the benefits and opportunities that the digital revolution can bring. They want to be part of this bright new world. They want to feel, touch, hear, taste and smell the full diversity and richness of the digital world and the possibilities that await them.

As noted earlier, to achieve such goals, there are tremendous challenges to be met, both economic and social, but if only a fraction of that energy which is evident in the day-to-day *joie-de-vivre* of street life is channelled into the proposed community upliftment project, then success for its digitally disadvantaged residents is bound to follow.

In order to facilitate this two-way relationship, ensuring that every empowerment opportunity is provided for to the local community, specific principles have been identified as tools in the development of the programme and its design. As a result, the programme exists as a facilitator between multi-media and local empowerment creating and sustaining a learning culture in the Alexandra community.

The programme consists of a junction which is branched off into two sub sections.

The junction will be a skills based centre for the enrichment and empowerment of the people of Alexandra through education and the use of multi media tools.

The first of the sub sections is a digital multi-media centre which comprises the educational and technical aspect. The second sub section comprises the hands on and ‘getting dirty’ approach. Each provides specific benefits to its users and yet, each sub section also facilitates the integration of both social and economic upliftment through its methods and facilities.

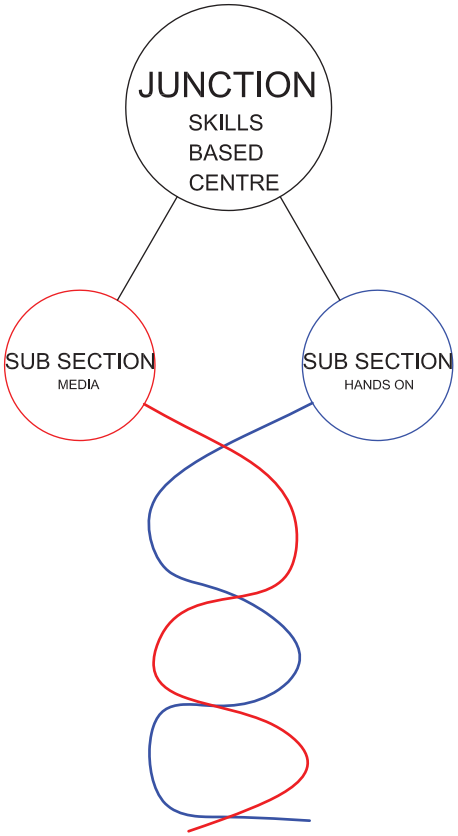


Image 68

	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
COMPUTER AND MULTI MEDIA USAGE FACILITY	Work space for learning and experimenting with multi-media tools. Space for presentations to be undertaken as well as archive space. An area to lock up multi-media tools. A reception space for people collecting or returning archive material and duplicating material.	Must be made visible to the public so this process of integrating the digitally disadvantaged with technology can be seen.	The space must be open and accessible with the tools on display as well as naturally lit. The facade between the archive and the rest of the work area must be part of the exhibition.	The general public who want to better their educational skills and archivists.	1 160m^2 of 11 800m^2 site 9% of site
PUBLIC LIBRARY	Books, tapes, digital media and interactive learning programmes should be available. Hands on approach learning should be provided for the different stages of digital learning. A librarian or mentor should always be at hand. Suitable equipment and furniture. Ablutions should be appropriately placed.	This space should be viewed as a focus point and be an integral part of the building. Other activities should lead off it. It should be easily accessible and visible.	This part should house the knowledge that will be tapped into. It will be an open and accessible space, well lit and ventilated.	Children, parents and grandparents teaching their children. Scholars.	1 310m^2 of 11 800m^2 site 11% of site

	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
STUDENT STUDY AREA	This space is solely for students to learn away from institutions such as school. Meeting rooms with desks and chairs and tutorial rooms provide adequate space for singular or group learning and research.	This part of the building must not take the centre stage as it's a place of serenity and tranquillity. As a place of focus it should be situated away from the busy interaction zones.	It will be a medium active space. Traditional set up of a learning area will be used creating a sense of interactive vs non interactive learning.	School children, students and mentors looking for peace and quiet thus creating an enabling study environment.	525m^2 of 11 800m^2 site 4.5% of site
PUBLIC SPACE	Formal activities such as current vending and workshops where craftsmen provide skills as well as informal spaces where pedestrians can either decide to spend 10 minutes or an hour entertaining themselves.	This area is mainly the street front, this is what brings the users in and welcomes them into the area.	This is an area of transition so different levels, materials, textures and shading will be used to set up relationships and fluid spaces.	Anyone and everyone, it is a public stage for everyday life.	8 200m^2 of 20 000m^2 site 41% of site

	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
COMPUTER LABS INTERNET ACCESS	Computer terminals and associated IT equipment.	Can be separate and be part of main building. One of the focal areas of the new development.	Space should be made available for diverse groups of people and activities for people who will use the internet for various needs. This space will be open and accessed 24/7, it needs to be an atmosphere that captures energy and the present life of Alexandra.	Children, scholars, students and adults.	325m^2 of 11 800m^2 site 2.7% of site
TOILETS	Toilets for both female and male as well as disabled toilets facilities.	This function will be central to the rest of the facilities.	This area should be free flowing, simple and uncluttered.	All users of the facility.	165m^2 of 11 800m^2 site 1.4% of site



	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
EXHIBITION SPACE PERFORMANCE AREA	A non symmetrical platform for exhibiting the work performed by the users of the facility needs to enable people to experience in groups or alone when required.	This function of the building will be situated on the ground floor along the pedestrian route following on a person's journey. This space will be made visible at all times of the day.	The exhibitions that are on display or performances taking place themselves will determine the quality and flow of the atmosphere.	All people accessing the site. Predominantly the residents of Alexandra.	$300m^2$ of 11 $800m^2$ site 2.5% of site
GALLERY SPACE	Experience of seeing, feeling and walking through exhibitions. Combine all media types together in order to challenge the dominance of the printed word over the media. Floor space to be used for activities other than the traditional bookshelves.	The gallery space will be at the entrance of the building and structure the surrounding space. It will serve as the introduction. The focus should be on the people accessing the information and not on the information itself.	The lighting must be powerful and focus on natural lighting. Colours must be hardy and follow either the natural finish of the material or rich colours.	Journalists, researchers, tourists, school children, students and residents of Alexandra.	$395m^2$ of 11 $800m^2$ site 3.3% of site

	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
STUDIOS	Studio space for producing art and digital material, editing and printing. Space for users to interact and learn. Space to lock up material.	Must be made visible to the public so this process of studio learning can be seen.	The space must be open and accessible as well as naturally lit. The facade between the studios must be movable so as to create a larger learning environment.	Children, scholars, students and adults.	190m^2 of 11 800m^2 site 1.6% of site
AUDITORIUM SPACE LECTURE THEATRES	Deep floor plates stepping up towards the back of the space. There will be two theatres, one for the student facility and one for the public with no fixed furniture so as to make the space flexible. Stage, storage to store furniture. Controlled entrance for night use, be it cinema, bands, weddings, launches, meetings etc.	The student theatre is part of the student study area. The public theatre space should be able to be separated from the majority of the main building during the night, week-ends and for any 'private' use if required.	A shell will be created which can be decorated; the people of the events will create the atmosphere.	The diverse events create a space that caters for different people.	480m^2 of 11 800m^2 site 4% of site



	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
RESTAURANT, MUSIC	Separate entrance, bar area and fringes off reception. Openable platform with visual linkages to the rest of the building. Lounge area inside with outside dining, kitchen and delivery gangway.	This space should be flexible and be able to open up to or close off from the rest of all the functions on site.	From the lounge one can view the everyday life of Alexandra. Sitting outside, a walkway spans over the eating deck. The space will facilitate social activities and groups of people.	Adults and children under supervision.	780m^2 of 11 800m^2 site 6.6% of site
CRAFT KIOSKS	Vending space for selling goods produced on site with skills learnt from the multi-media usage facility.	It will be a ‘show off’ hub where people can see the results produced within the facilities. It should be centrally located and on the main pedestrian route.	This space is to be made vibrant with goods on display. A place for people to interact and share ideas.	Vendors and buyers.	270m^2 of 11 800m^2 site 2.2% of site

	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
OFFICES ADMIN AND LIBRARY	Formal activities such as managing the facility require office space. This space will be separated into administration office and library offices.	This area will be located away from the central hub of activities.	This is an area of work. It has to accommodate for different work relationships through the experience of fluid spaces.	Management of the facility.	165m^2 of 11 800m^2 site 1.4% of site
PARKING	Parking off the street for vehicles with greenery softening the street edge.	The parking is off the street edge so as not to interfere with the facility and site.	Parking should be easily accessed and be unobstructive to traffic flow.	Motorists.	920m^2 of 11 800m^2 site 7.8% of site



	Contents	Hierarchy within the building	Atmosphere	User type	Size (see Note 1, pg 111)
EXISTING UNDESIRED LAND	The undesirable, unusable land consists of the traffic circle and scattered traffic islands to the south of the site. They are inaccessible due to high levels of traffic.	These islands are disjointed from the site; they will play little to no role in the design process.	They are used infrequently by pedestrians to cross roads. Greening them will add to the openess and welcoming onto the site as well as pleasing to the eye for motorists.	Motorists and pedestrians.	2 330m^2 of 20 000m^2 site 11.6% of site
PETROL STATION	A proposed petrol station to be placed on the north eastern edge. This station could be accessed off Pretoria Main Road as well as North Street. Filling stations, a quick shop and parking would be catered for.	As the site is so large and disjointed this proposal brings together a mass concentration of people as across the road is a newly developed taxi rank.	It will be a high active zone with many users commuting off Pretoria Main road onto the site. The petrol station will feed off the energy of the facility and economically benefit from the adjacent taxi rank.	Motorists and pedestrians of Alexandra.	2 800m^2 of 11 800m^2 site 23% of site

Note 1: Sizing began with the experimentation of the theoretical and practical strands (found on page 134) combined with the extensive analysis and physical limitations of the site. An analysis of the pedestrian traffic on the site gave imput into the required square meterage that formed the basis of the programme sizing.

‘Alexandra’ – A poem by Mongane Serote:

“My beginning is knotted to you,
Just like you knot my destiny.
You throb in my inside silences
You are silent in my heartbeat
That’s loud to me.
Alexandra often I’ve cried.”

06_Site analysis

The chosen site

The author looked for an area which fell in the ‘digital divide gap’ category. Rautenbach square, located in Alexandra was a perfect contender. The square is an undeveloped piece of land which has become a hub of daily activities for thousands of residents of Alexandra. The main activity which occurs there is the transition of people, it is the gateway into Alexandra.

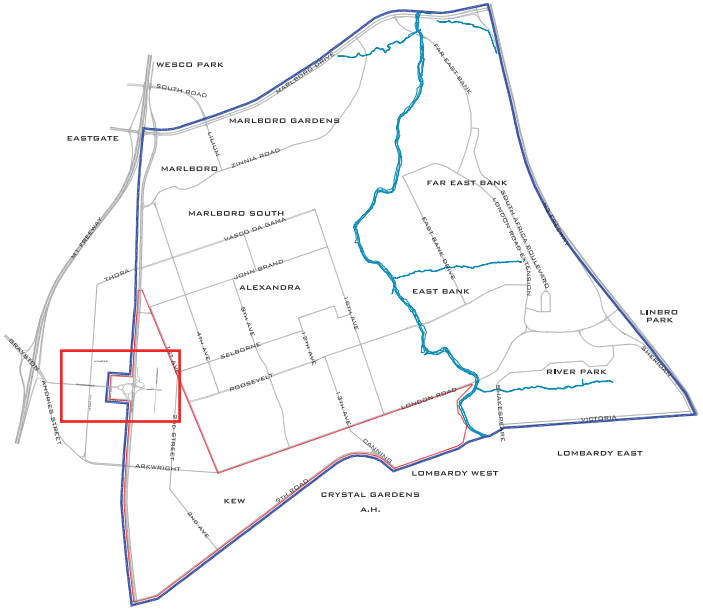
The square is the link between Alexandra, the digitally disadvantaged area in need of multi-media tools and Sandton, an area streets ahead of Alexandra in terms of digital application.

The square is easily accessed as it’s in close proximity to Pan Africa Mall and Grayston Drive. The road networks make it accessible by non-residents as well.

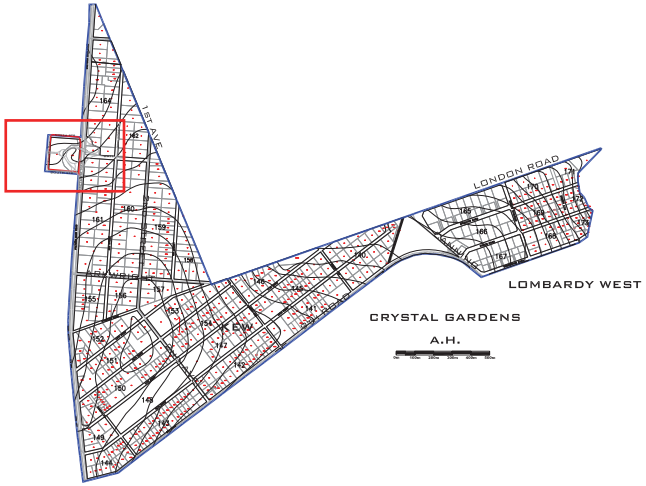
Situated within 1.5 km of the square are the majority of the schools in Alexandra, learners will find it easy to commute to the square. The police station is a few hundred metres away providing good friendly security.



Alexandra



Kew



Proposed Site

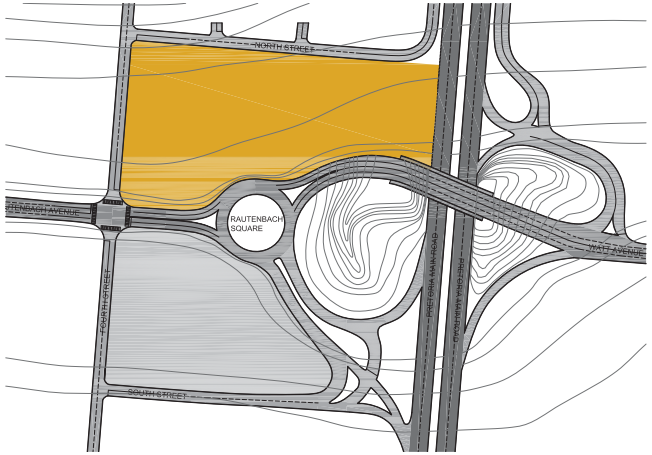


Image 69


1


2


3


4


5


6


7


8


9

Image 70

Site photographs: photo numbers refer to site location numbers on page 117.

6.1 Proposed site photos

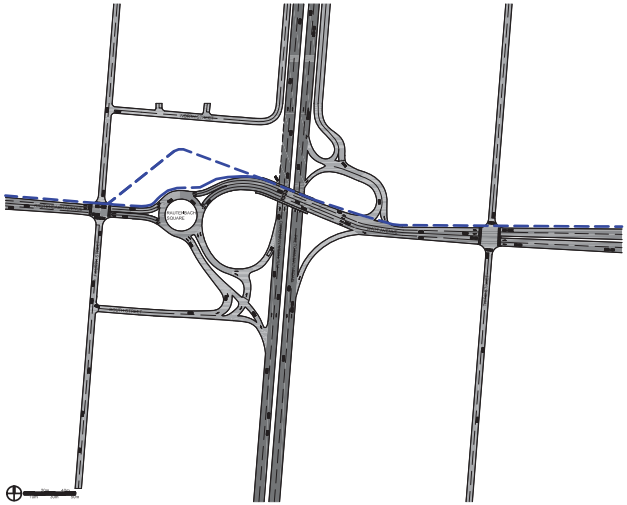
Aerial photo of proposed bigger site highlighted in yellow.



Image 71



EXISTING PEDESTRIAN PATHS (red dots)
NEW CIRCULATION (blue dash)



HIERARCHY OF ROADS



SITE **(tan colour)**
LAND AVAILABLE (grey colour)



SURROUNDING CONTEXT



EXISTING GEOGRAPHY

The master plan shown on the right is of the site and its surrounding context. The analysis of specific elements is depicted in separate diagrams on this page.

Image 72

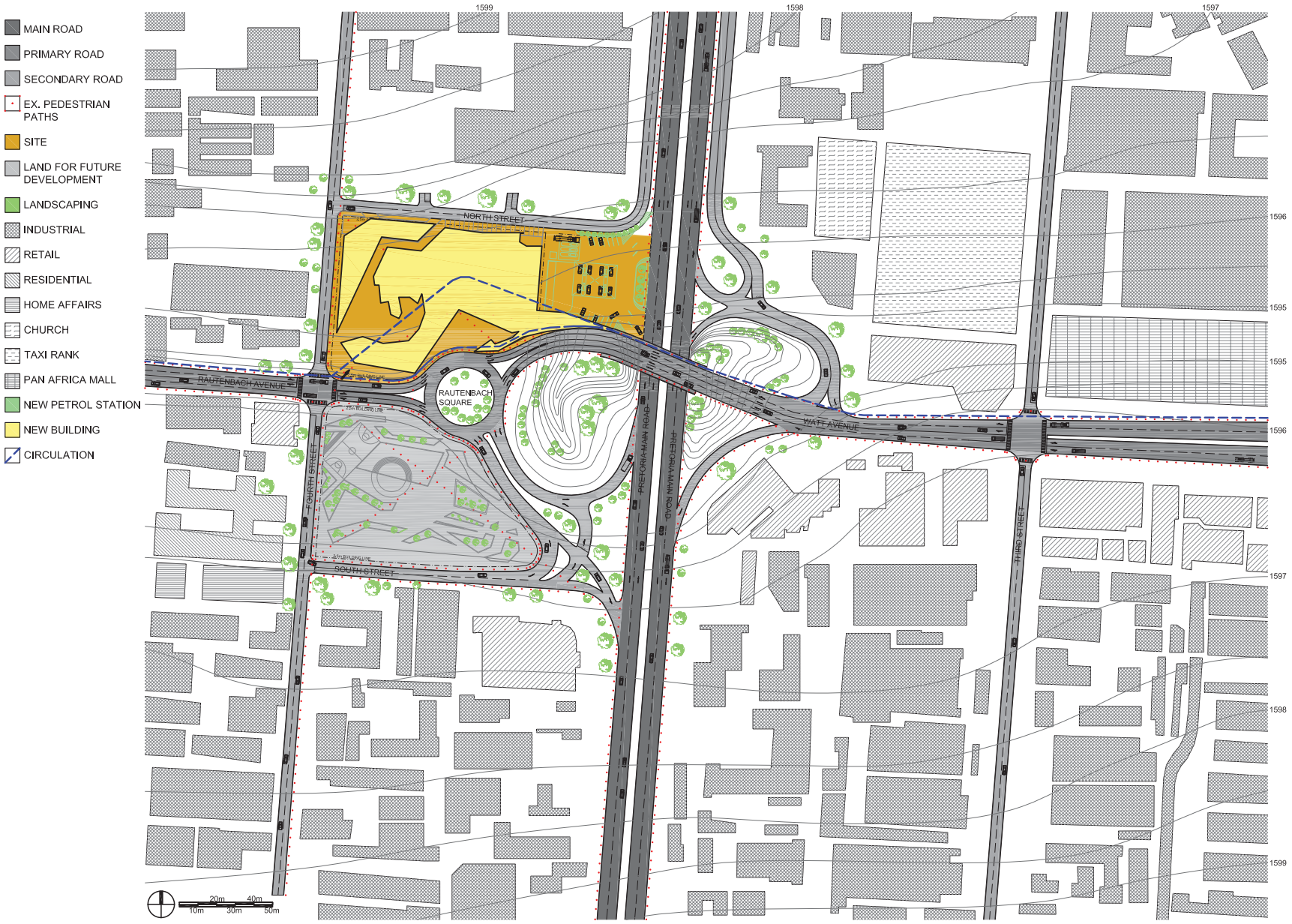

MAIN ROAD
PRIMARY ROAD
SECONDARY ROAD
EX. PEDESTRIAN PATHS
SITE
LAND FOR FUTURE DEVELOPMENT
LANDSCAPING
INDUSTRIAL
RETAIL
RESIDENTIAL
HOME AFFAIRS
CHURCH
TAXI RANK
PAN AFRICA MALL
NEW PETROL STATION
NEW BUILDING
CIRCULATION
1599
1598
1597
1596
1595
1595
1596
1597
1598
1599
NORTH STREET
RAUTENBACH AVENUE
RAUTENBACH SQUARE
WATT AVENUE
FOURTH STREET
PRETORIA MAIN ROAD
PRETORIA MAIN ROAD
THIRD STREET
SOUTH STREET
20m
40m
10m
30m
50m

Image 73



Image74

Site photographs



Image 75: VIEW A: View looking north west over proposed site

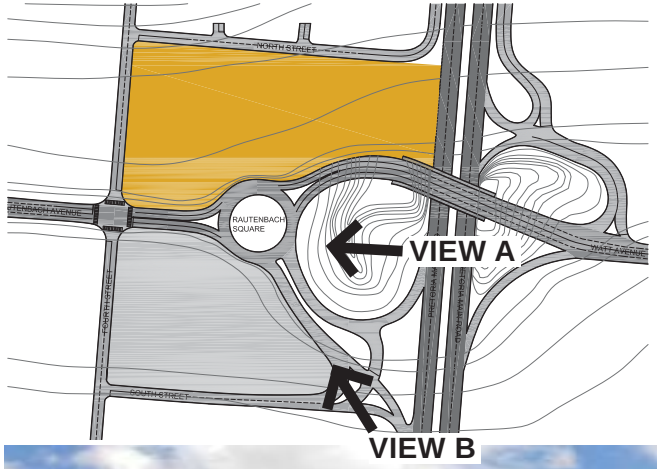


Image 76: VIEW B: View looking west over proposed site



Site photographs



Image 77: VIEW C: View looking east over proposed site

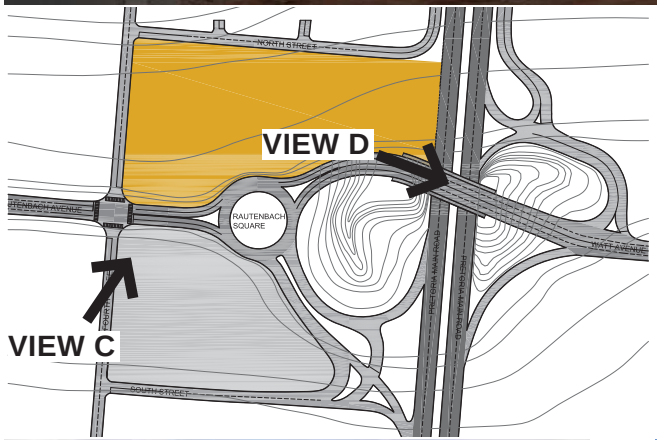


Image 78: VIEW D: Views (below) looking east towards Pan Africa Mall









Motor repairs



Food retail facilities

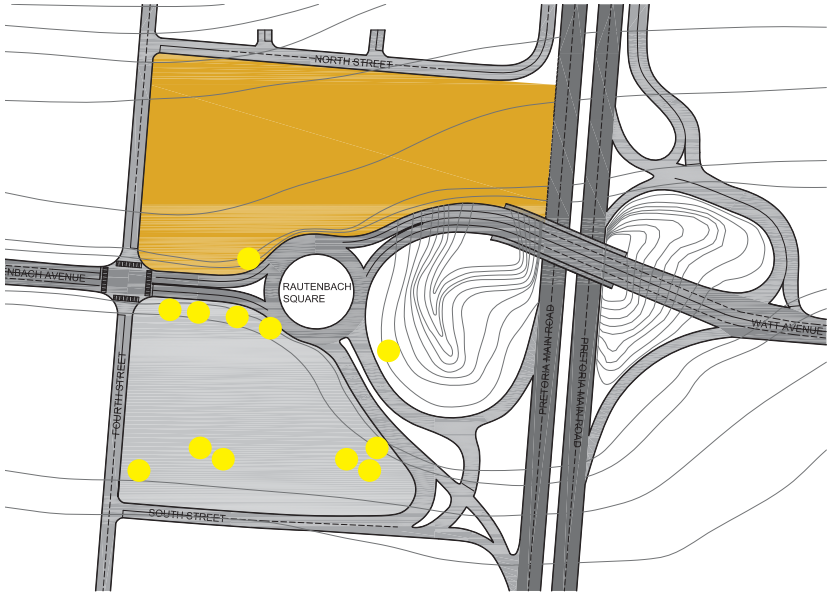


Image 79

6.2 Existing facilities

The majority of the existing facilities on and around the proposed site are those of small entrepreneurs. These small enterprises include amongst others vending outlets with most stalls providing hot/cooked meals and motor repairs. Another existing facility on the site is a sand patch area where people who wish to obtain their truck licences can practise their parking. With the arrival of the Fifa World Cup streets lights have been put up around and through the proposed site. There are however no public rest rooms, benches, telephones or permanent facilities for business or recreation. A bridge across Old Pretoria Main Road does provide adequate and safe passage for pedestrian flow.



1: Department of Home Affairs



2: Food outlets



3: Business outlets



4: Medical rooms



5: Motor repairs



6: Pan Africa Mall

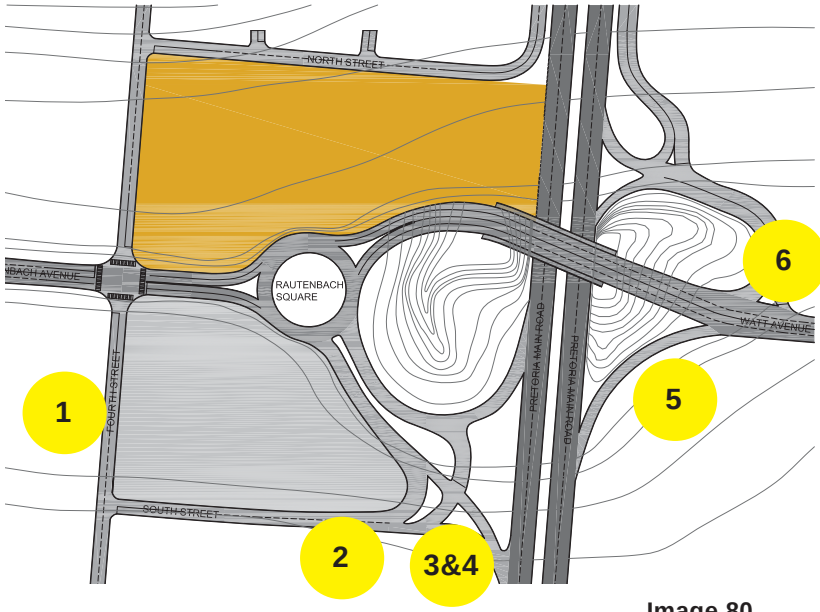


Image 80

6.3 Surrounding facilities

Investigating the surroundings of the proposed site, it can be seen that the current facilities are in need of re-vamping except for the Pan Africa Mall which is new and buzzing with people activities. To the north of the site there is little to no activity. Most activities occur to the south and west end where businesses and retail are located. Pan Africa Mall is the first mall to be built in Alexandra; next to the mall is a taxi rank which adds to the high intensity activities around the mall.



1. Limitations due to road islands



2. Limitations due to traffic circle



3. Limitations due to bridge embankment

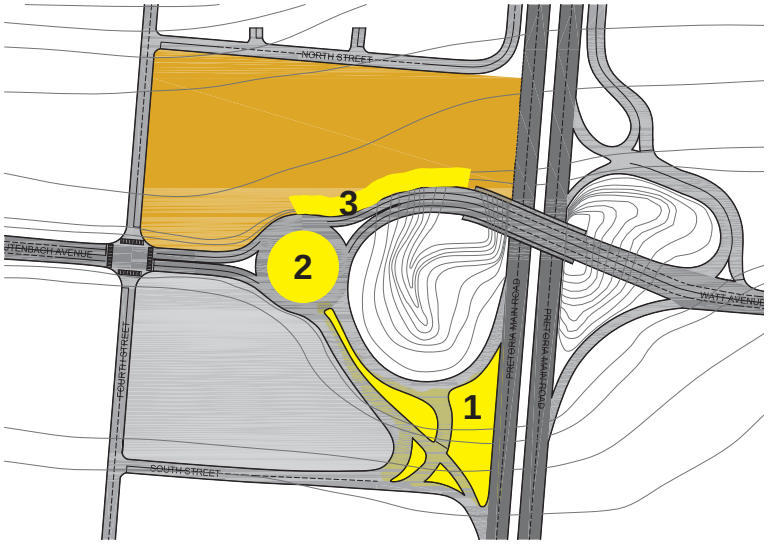


Image 81

6.4 Physical constraints

The proposed site is fairly flat across and where it does slope slightly this is due to soil erosion. There are some pleasing views from the bridge looking north or south down Old Pretoria Main Road. The main site limitations are the road restrictions and a general 2.5m building line. The proposed building area is defined by the narrow road islands which flank the east side of the site, a traffic circle in the middle is restricting and to the north building considerations are due to the lay of contours. Development to the west is more flexible and desirable.

“For me, the township deserves to have facilities like the computer multi-media centre”

Survey respondent

07_Design process

7.1 Thesis charrette

During the first semester the author participated in a Charrette which was aimed at having a set of intense collaborative sessions to quickly generate design solutions. The idea was to use systemic thinking to find imaginative spatial readings of the thesis premise. The author was tasked to design a methodology that sets aside the intuitive designer and develops a method of rationalizing the thesis premise into a design process specific to the project. The Charrette focused on developing creative design prototypes that speak to the form/construct/beauty and spatial/experiential/architectonic qualities of the project. Site, scale, context, social issues and talk were down played for this Charrette. The Charrette looked to generate a design moment; The author had to think of it as a design laboratory exercise in experimenting with a slice of the project.
(extracts taken from THESIS CHARRETTE DESIGN KICK-START brief)

Below is a montage that depicts how the author envisages the thesis story-line. It starts with a caveman holding a cellphone, then an ape using a computer, then the ape walking and carrying it to a man in a suit with a touch screen cell-phone. This represents how since beginning of time communication is a key element in our evolution and future. The author

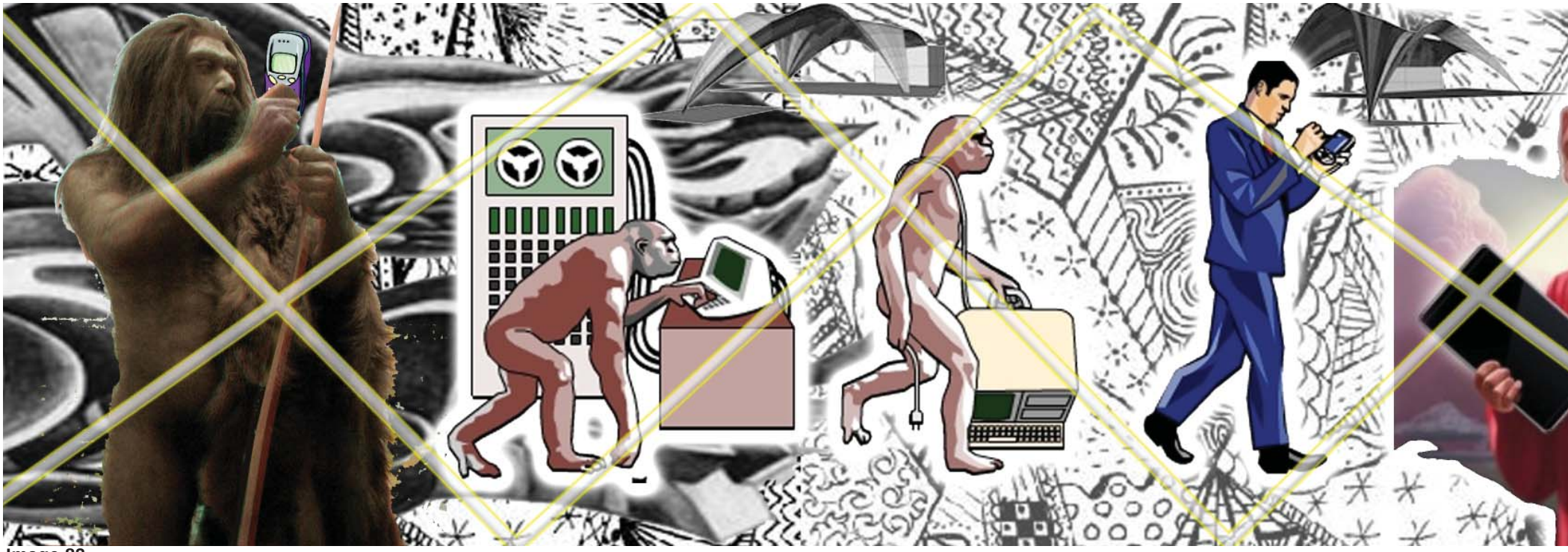


Image 82

has intended it to send the message that technology has experienced such a rapid growth in the last 20-30 years that sometimes it seems that it (technology) has overtaken man in the evolution race; we are always lagging behind in the technical world in our attempts to remain fully adept to its innovations.

The man in the middle is an example of a ‘holy man’ holding the ‘books of knowledge’. These ‘books’ are laptop computers and their equivalents. Today, technology is the driving force. Power and economic progress equates to technological competence. If anyone wants to educate themselves, the ‘holy laptops’ are the ways of gathering the necessary knowledge.

The lady touching the oversized fruit shows that virtually anything can be possible with the use of technology. The limits are endless; will technology allow us to grow giant fruit like this in the near future?

The satellite dish which is beaming out the digital waves that are bouncing across the picture represents the changing times we live in. The beams are an indication of the paths of the lives of people using technology to communicate, educate, work or for recreation which are constantly crossing each other.



7.2 Charrette models

This model is an extruded nolly map. The model is made completely out of nails. The idea to use nails came from the fact that the majority of Alexandra households are made from raw materials such as sheeting, nails and cement bricks.

The model shows a portion of the street map of Alexandra with the unbuilt spaces being the extruded nails. This map shows that the spaces off the streets are irregular in size and pattern

The author found inspiration in the idea that so many paths and lives of people cross each other every day and the relationship of these crossings with each gathering space. Even though the movement looks congested and informal it runs smoothly as everyone is part of the same community. The intention is for this design to progress accordingly.

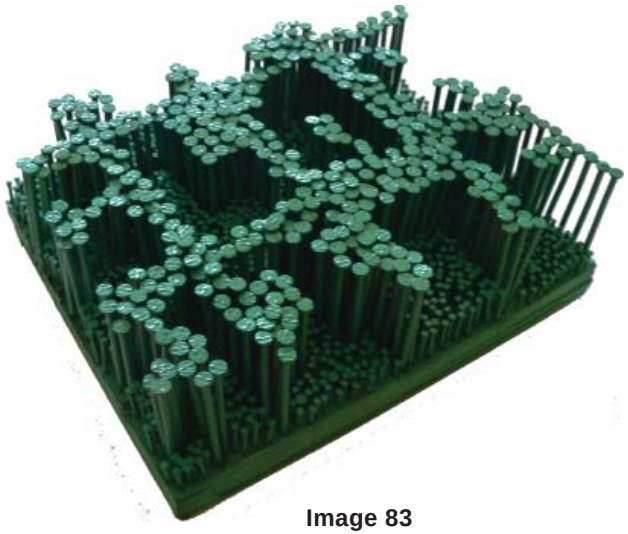
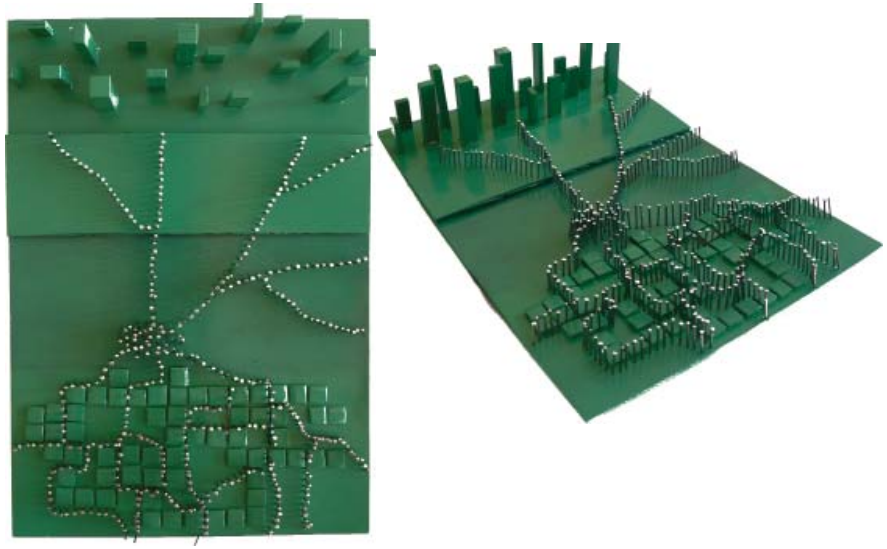


Image 83

The site is situated in Wynberg; bordering on Alexandra with Johannesburg and Sandton a few kilometers away. This model shows the relationship between Sandton/Johannesburg and Alexandra. The high rise blocks represent Sandton/Johannesburg and the low blocks represent the typologies of housing and structures in Alexandra.

The nails which are bunched together in the centre represents the idea that the design of a skills based centre will attract people, who in turn will leave with gained knowledge on paths in pursuit of wealth, prosperity and happiness.

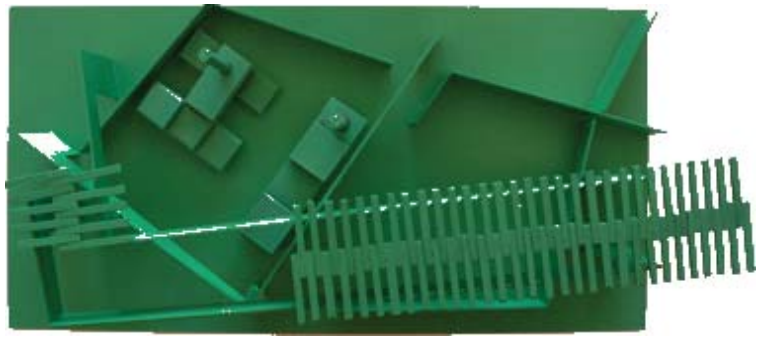
The nails also represent the flow of people from Alexandra into Sandton with a new found education as well as people returning into Alexandra with the intention of making it a better place for all.

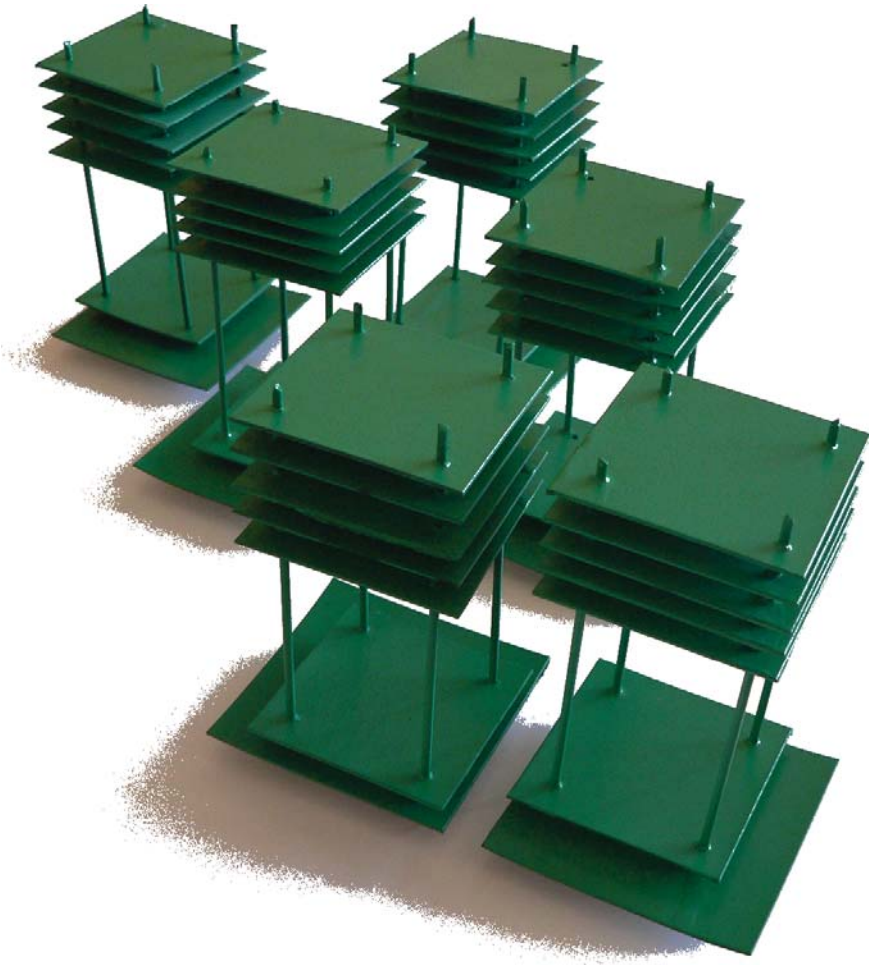


Another set of ideas for the proposed centre are layering and transparency. The model is a representation of these ideas with different levels that are open. With so many people using the chosen site for their business location, for a rest place or just for passing through it each day, there are many situations to be considered. Therefore the idea of encapsulating these different paths is represented vertically accross the site by possibly making the centre a few storeys which touch the earth at different heights.



This model was an experimentation of space and materials. It was the least successful model as the author felt it hindered the idea of flow and interchange by not allowing for expansion, by being enclosed and not transparent enough.





These ‘pods’ were taken from the idea of the shipping Cell C containers found in Alexandra and which provide access to telephones. A possibility is to develop small ‘pods’ which can be dispersed throughout Alexandra or different ‘pods’ on the site which make up the centre as a whole.



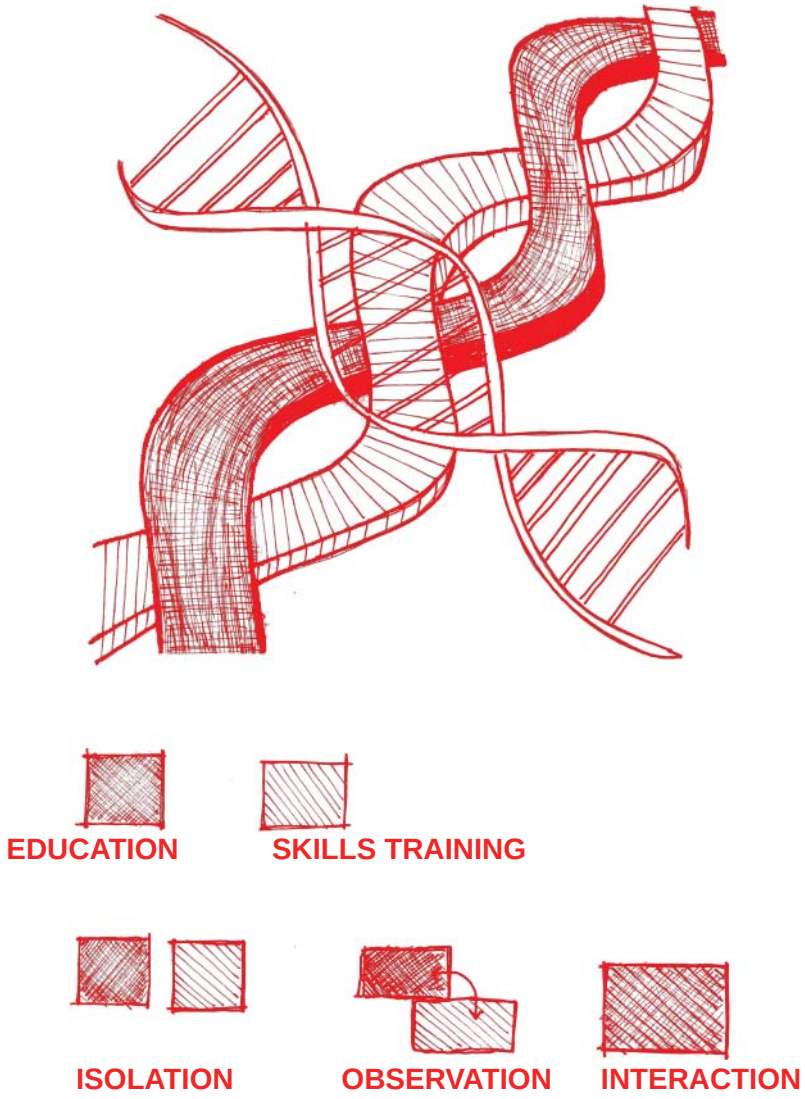


Image 84

7.3 Concept

The concept for the facility is based on different levels/layers intertwining with each other with some being very transparent, bringing together two different worlds. One, the lesser digitally educated local community, the other, the constant evolving digital world . These levels/layers become the routes for each specific user to follow, the experiences they will embark on to better and further equip themselves with digital skills.

Digital applications and the process of gaining skills is about a journey. The experiences and knowledge obtained on this journey is what makes closing the digital divide so exciting. The architectural response should capture the ideology of the ‘closure’. As the users move through the facility, opportunities are there, giving the users a better understanding of the digital applications and how these will be able to better their lives relative to what they had before they entered the facility.

As the users move through these different levels/layers, different forms of education take place: Isolation; user groups learn in isolated environments: Observation; preceding interaction, is where a better understanding is obtained before the task is tried in practice by observing that which is being learned: Interaction; where training or learning is hands on and interactive.

Bands

The images to the right depict the two different types of programme; the two bands representing the different levels/ layers which intertwine with each other. The red band representing the technical, media and educational aspect while the blue band depicts the mechanical hands on approach aspect. The drawings indicate how the 'bands' interact and feed off each other.



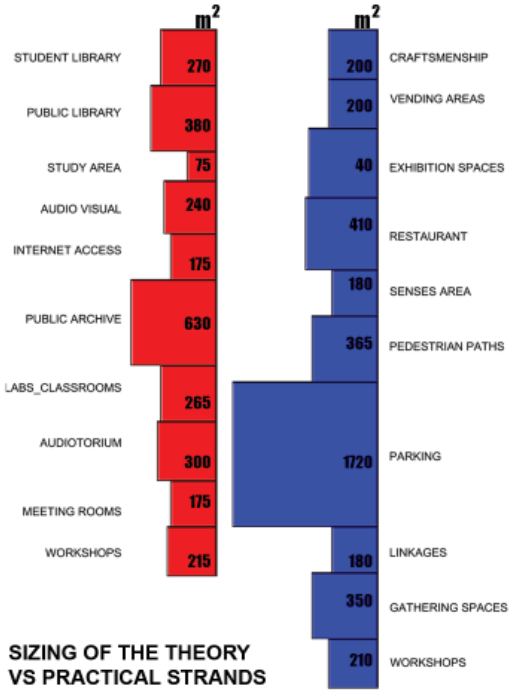
CONTEXT MAPPING



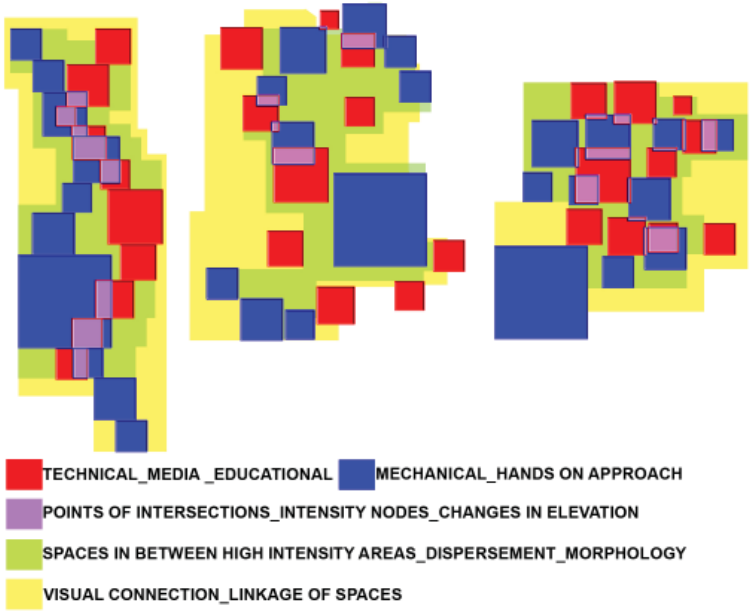
MECHANISM



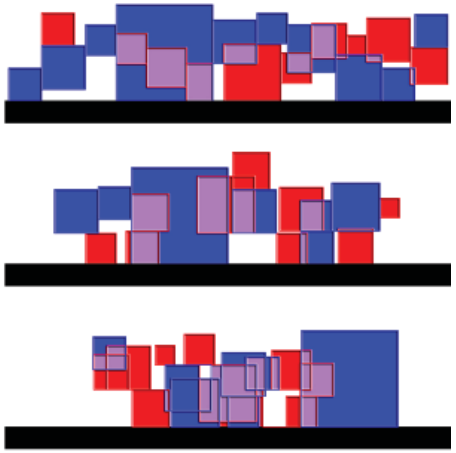
THEORY VS PRACTICAL



SIZING OF THE THEORY VS PRACTICAL STRANDS



PLANS: TWISTING AND LAYERING OF THE THEORY VS PRACTICAL STRANDS



DIFFERENT WAYS TO EXPERIENCE THE BUILDING INCLUDE GOING THROUGH IT, OVER IT, UNDER IT BETWEEN IT AND NEXT TO IT,

SECTIONS: INVERTING OF THE PLANS

Image 85

Allowing the programme to create a journey

Conceptual
- seminar rooms
- visual rooms
- lecture rooms

Technical
- technical based
- workshops

Productivity /Implementation
- studio space
- public interaction
- implement technical skills

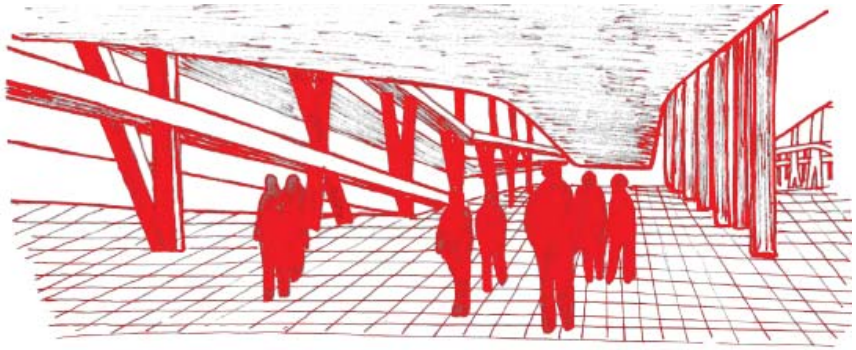
Sales / Marketing
- workshops / internships
- exhibition space

The ability for walls to fall away will bring the landscape into the building; this can be achieved in the education and gallery spaces. Classrooms, lecture rooms, seminar spaces and meeting rooms become flexible, moving between the inside and outside integrating architecture and the life on and around the site.

Visual linkage in the process of skills gaining in this centre will generate interest in its participation by the public. Through the journey of skills learning, where necessary, interaction will be maximised by the users. Products of the facility can be purchased as the user or visitor exits the facility, taking a little piece of knowledge with them.

The building will not be a container, but rather a series of different flows. The spaces will seem to grow from the ground towards the sky in a natural way. These layers are represented both vertically and horizontally and extend into spaces marking continuous and irregular lines. This architecture takes on an abstract form pulling the user off the street inside.

With different levels and layers making up this building, the organisation of the building aims at maximising the integration of the site life into the building's spaces. The linear structures maximizes the surface of contact with the outside. The education facilities which comprise most of the spaces will be organized along a corridor effect that threads through all of the dependencies.



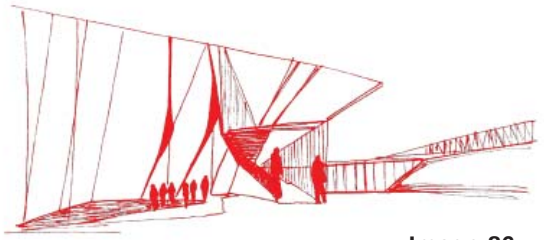


Image 86

Sizing of the facility

Picture 1_ Site at 1:1000. The blue block represents a proposed petrol station. A site of 8500sqm allows for development and a petrol station with a 'quick shop' that will attract people and serve the large taxi rank across the road at Pan Africa Mall.

Picture 2_ Yellow block is proposed building of 2700sqm. Size is derived from the programme.

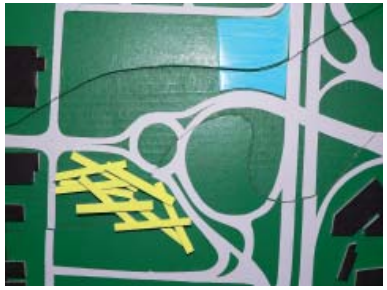
Picture 3_ Yellow block is in strips which represents the area of 2700sqm spread horizontally.

Picture 4_ Using the same strips, placing them in a non-orientated pattern creates magnificent spaces for interaction and privacy.


1


2


3


4 Image 87


5


6


7

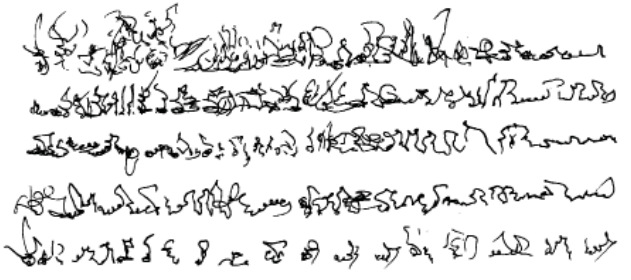

8

Picture 5_ Using similar strips as before, placing them as shown is based along the concept as stated earlier of the interweaving and layering between education and technology.

Picture 6_ This comes from the idea of pictures 4 and 5 where there is structure versus madness.

Picture 7_ Using the idea of courtyards and specific spaces for each entity presented in the programme this concept evolved.

Picture 8_ A structured and specific approach with separated buildings that are connected to each other. This is a representation of a journey through the site and technology.


Image 88

"It looks like writing, but we can't quite read it.
I call works like this "asemic writing".
Asemic writing seems to be a gigantic, unexplored territory.
Asemic writing has been made by poets, writers, painters, calligraphers, children, and scribblers, all around the world. Most people make asemic writing at some time, possibly when testing a new pen.

Educators talk about children going through distinct stages of "mock letters", "pseudo writing" and so on, when they're learning to write. Many of us made asemic writing before we were able to write words.

Looking at asemic writing does something to us. Some examples have pictograms or ideograms, which suggest a meaning through their shape. Others take us for a ride along their curves. We

like some, we dislike others.

They tend to have no fixed meaning. Their meaning is open. Every viewer can arrive at a personal, absolutely correct interpretation.

Asemic writing has been presented by means of books, paintings, scrolls, single pages, mailed envelopes, walls, cinema, television and computers, particularly via the internet."

Henri Michaux, who penned the above quotation, was a poet, a writer and a painter.

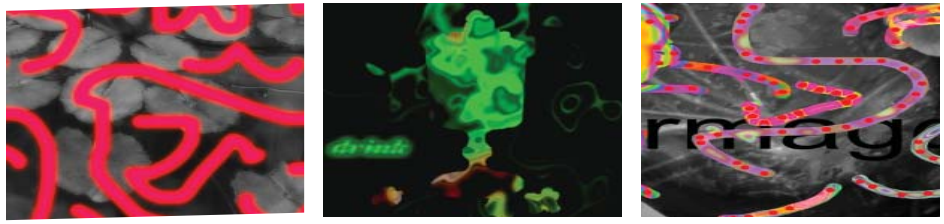


Image 89



9



10

Picture 9 & 10_
Through the use and experimentation of asemic writing, drawings and paintings the idea of creating variation through artistic expression takes root.
The building develops an architecture that uses rules of natural growth and connects both education and technology with a landscape environment, topologically and asemically linked.
The spaces create a symbiotic relationship with the existing environment by framing existing topographic features such as the bridge and hill as well as pedestrian movement across the site and at the same time giving a feedback to the landscape by creating topographical irregularities which branch off the main building.







Image 90

After giving form to the building, the initial design was a direct result of the worked programme and the dynamically challenged site. The design took on a calculated approach and evolved through a series of natural developments.

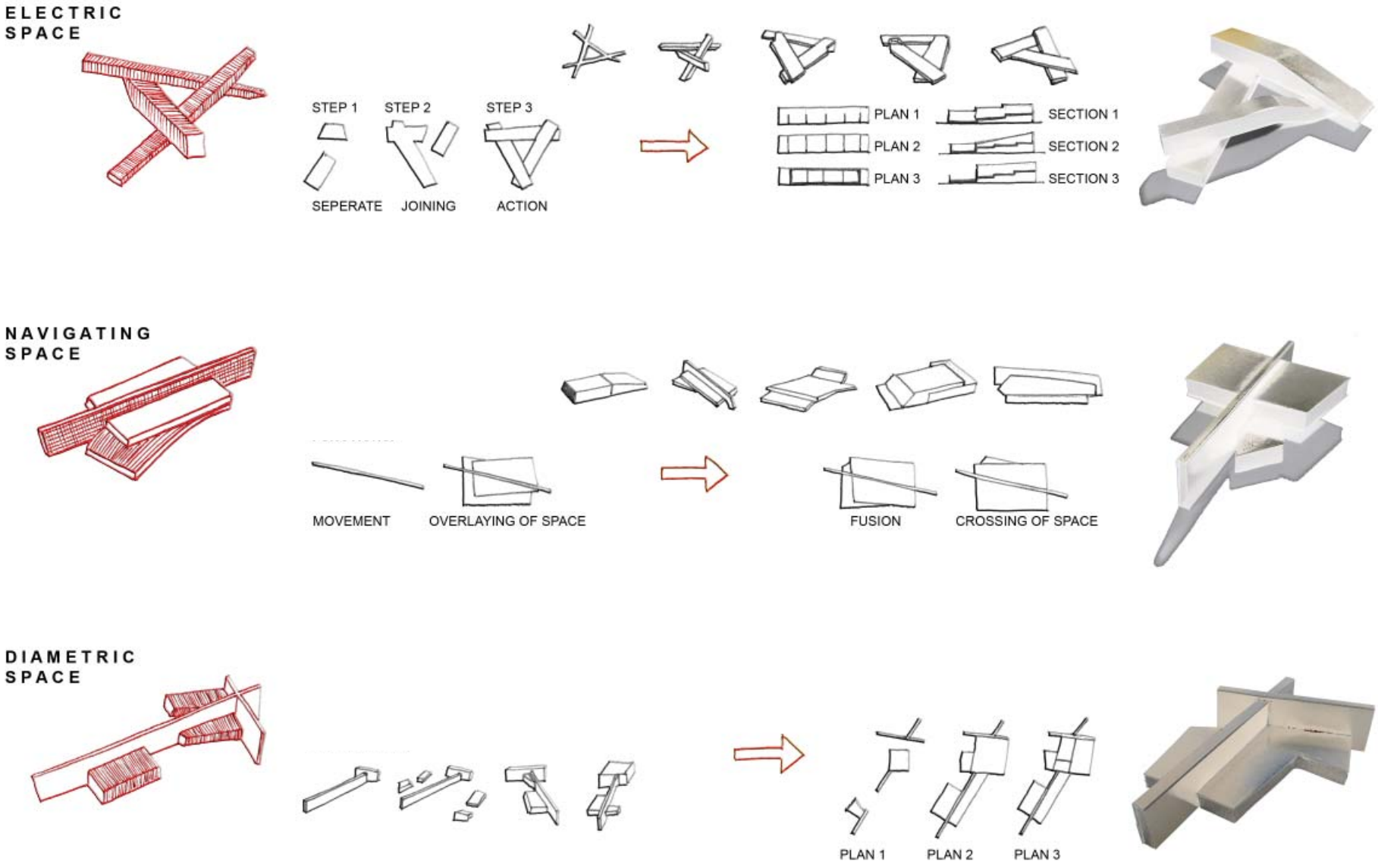

ELECTRIC SPACE
STEP 1
STEP 2
STEP 3
SEPERATE
JOINING
ACTION
PLAN 1
PLAN 2
PLAN 3
SECTION 1
SECTION 2
SECTION 3
NAVIGATING SPACE
MOVEMENT
OVERLAYING OF SPACE
FUSION
CROSSING OF SPACE
DIAMETRIC SPACE
PLAN 1
PLAN 2
PLAN 3

Image 91

This method of design led to an investigation by means of model building. Through the creation of many small models, different types of shapes, spaces and dynamics were explored which the user of the facility will experience.

These models were a way of unifying a fragmented situation, they had to respond to the context in terms of scale, variation and accommodate pedestrians needs.

It was evident that during the model building process, three different types of spaces were becoming increasingly apparent in the design and these types of spaces were running parallel with the programme.

The first type of space created was *electric space.* This ever-changing, energising space will produce forces that result in energy and action as opposed to inactive and motionless space. This is characterised by the flow of users and serviceability of the facility.

The second type of space created was *navagating space.* Central meeting spaces are created by the crossing and overlaying of paths. This space is the fusion point of different functions.

The third type of space created was *diametric space.* Contrasting spaces consist of a number of different space scenarios which include the motion versus static space and the navigating space.



Image 92

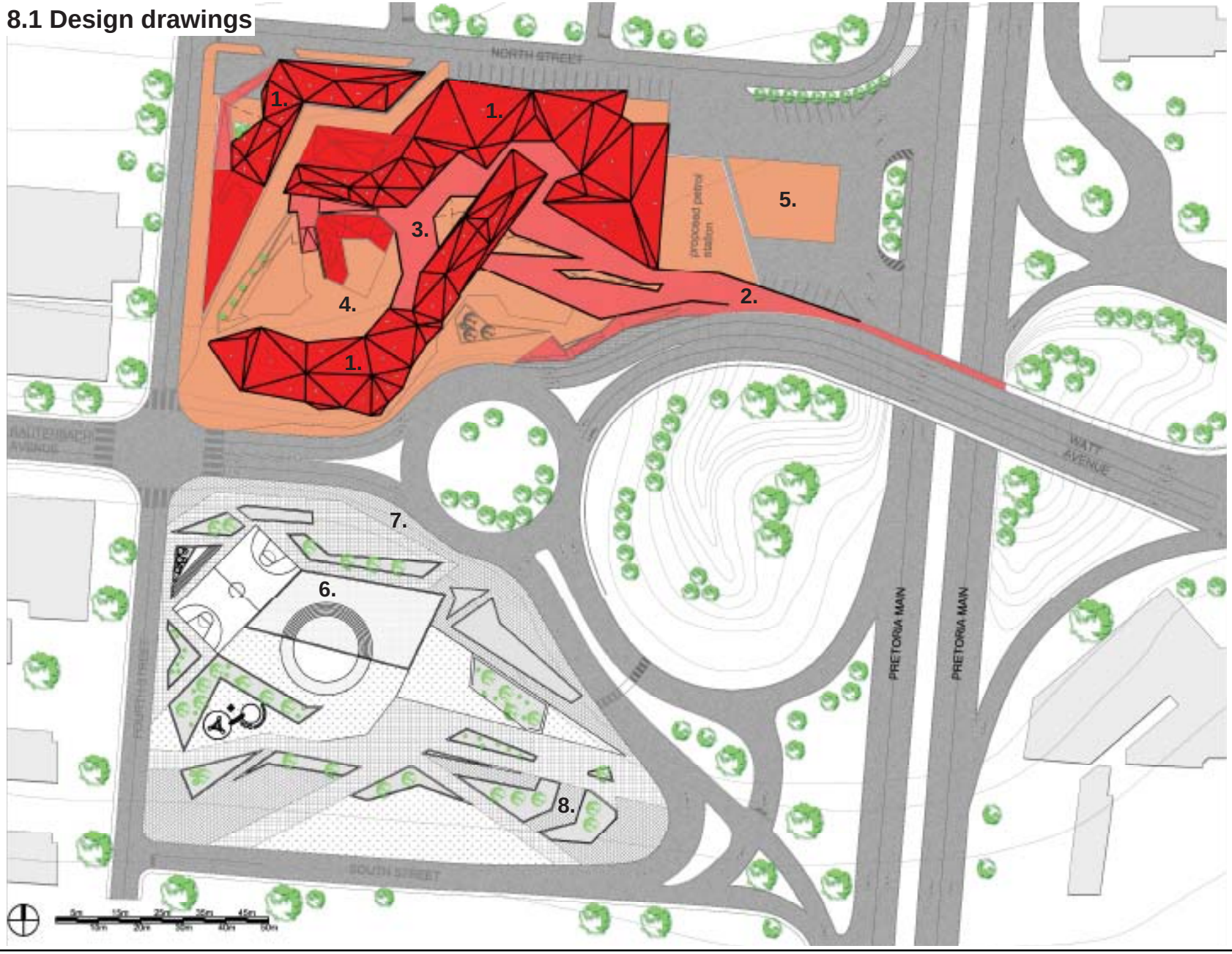
“It is a good thing because it will help our community. The children will be off the streets and do something. It is part of job creation and the community and children will be better skilled.”

Survey respondent

08_Design drawings



8.1 Design drawings

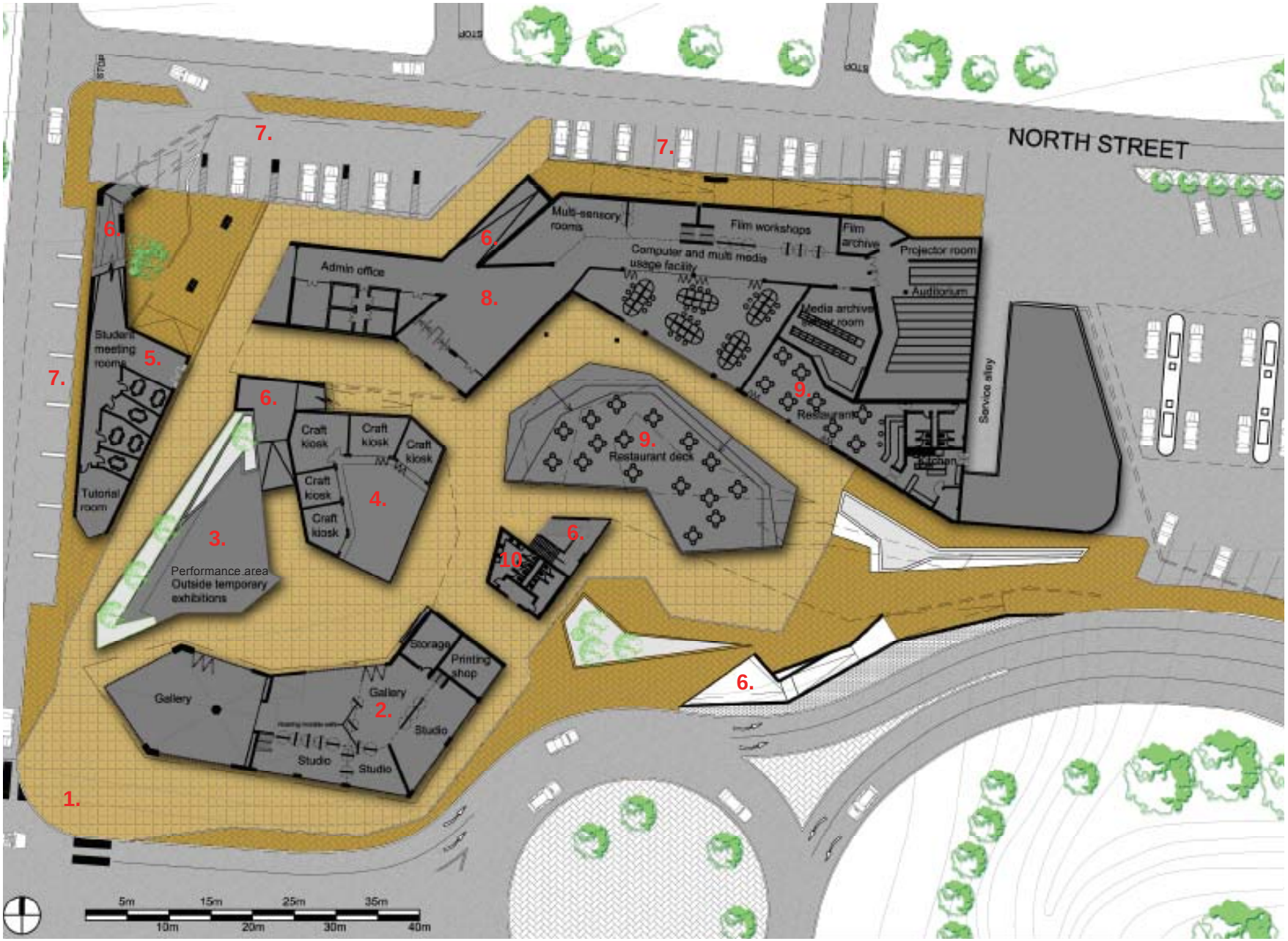


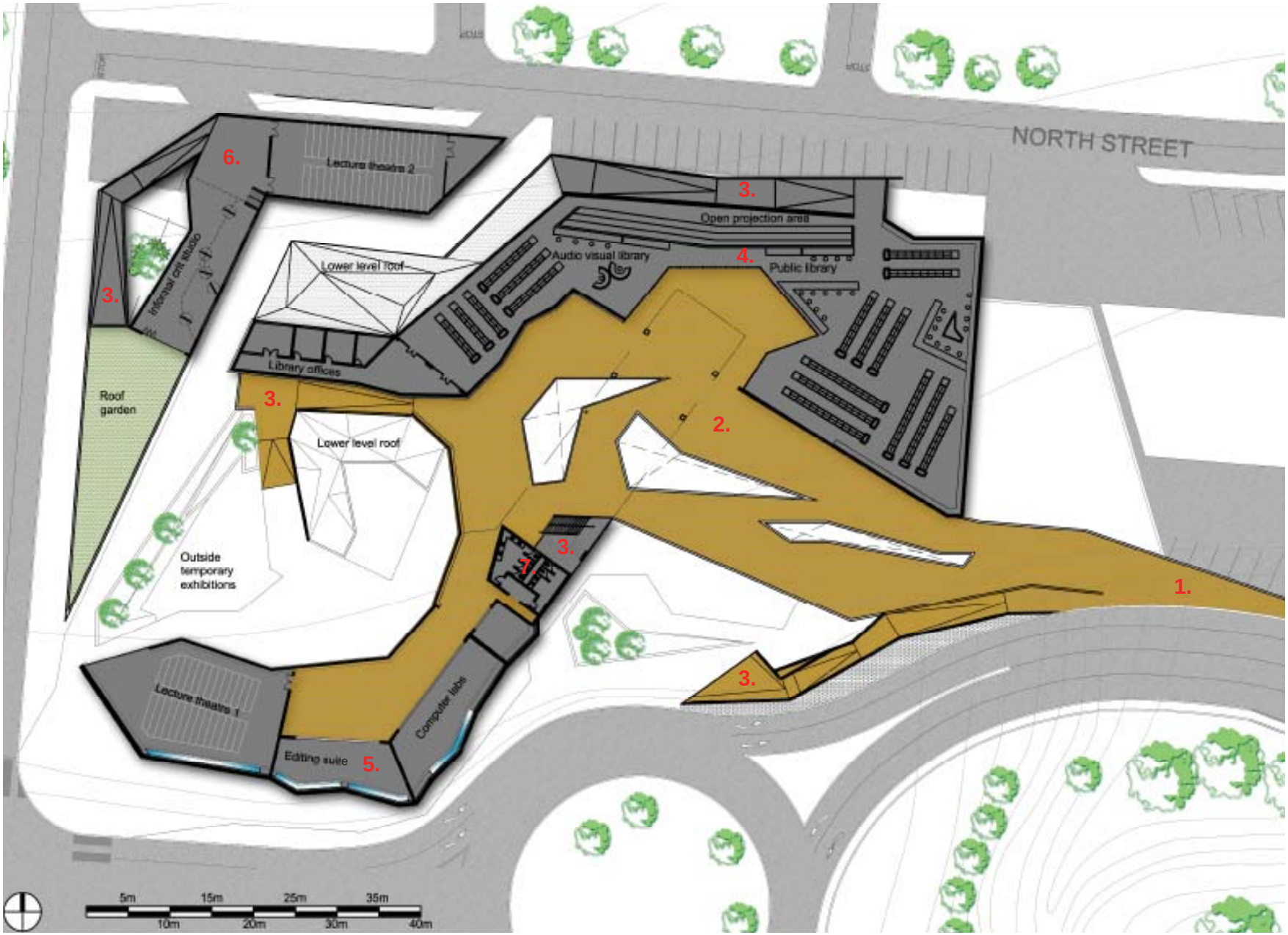
SITE PLAN

1. New facility
2. Ex. foot bridge connection
3. New platform
4. Lower level
5. Proposed petrol station
6. Public space
7. Space for ex. facilities
8. Gardens

GROUND FLOOR PLAN

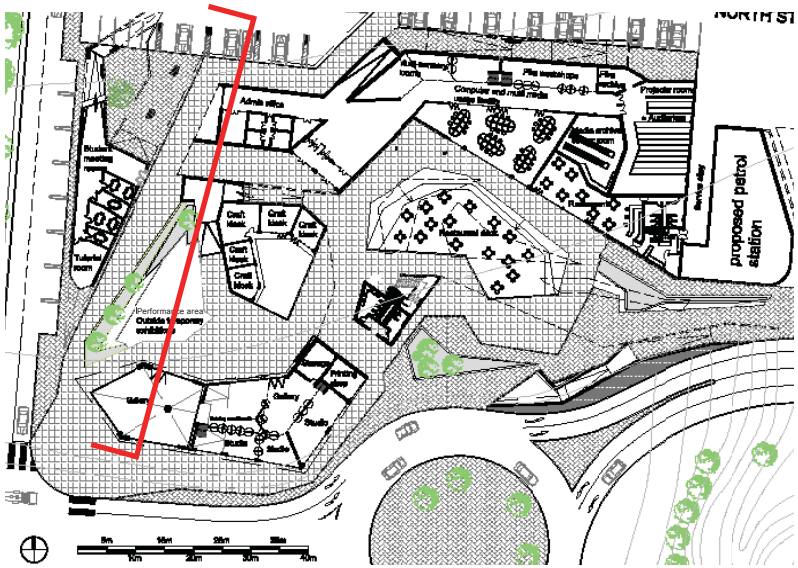
1. Entrance off Rautenbach Avenue
2. Public interface building
   - gallery
   - studios
   - storage
   - printing
3. Exhibition space
4. Crafts / kiosks
5. Student centre
   - meeting rooms
   - tutorial room
6. Vertical access
7. Public parking
8. Multi-media centre
   - offices
   - sensory rooms
   - film
   - pojector room
   - auditorium
   - archive
   - computer usage
9. Restaurant
   - eating deck
   - kitchen
   - toilets
10. Public toilets





FIRST FLOOR PLAN

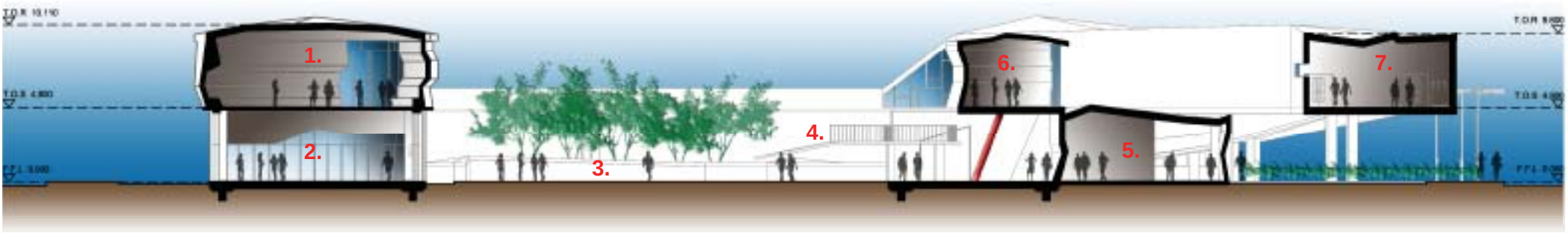
1. Entrance off ex. foot bridge
2. Platform
3. Vertical access
4. Multi-media centre second floor
   - offices
   - audio visual
   - projection area
   - public library
5. Public teaching space
   - meeting rooms
   - computer labs
   - lecture theatre
6. Student centre second floor
   - informal crit studio
   - lecture theatre
   - roof garden
7. Public toilets



SECTION A-A

1. Lecture theatre
2. Gallery
3. Performance space
4. Ramp
5. Admin offices
6. Library offices
7. Student lecture theatre

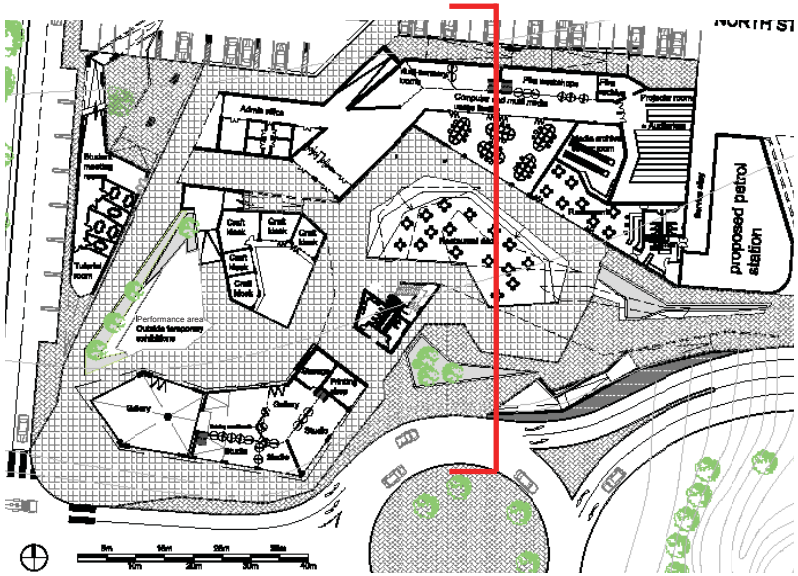
Not to scale



As the user enters the site off Rautenbach Avenue, the first building encountered is the public interface building. This comprises the gallery space on ground floor and the lecture theatre above which provides sufficient overhang preventing direct sunlight from entering into the gallery.

On the ground floor, the rotatable and moveable walls can be utilised as the programme of the gallery changes. The walls of the gallery allow the user the opportunity to experience the public space. This creates a public courtyard that opens up to the performance and exhibition space which is flanked by the ramp access to the platform.

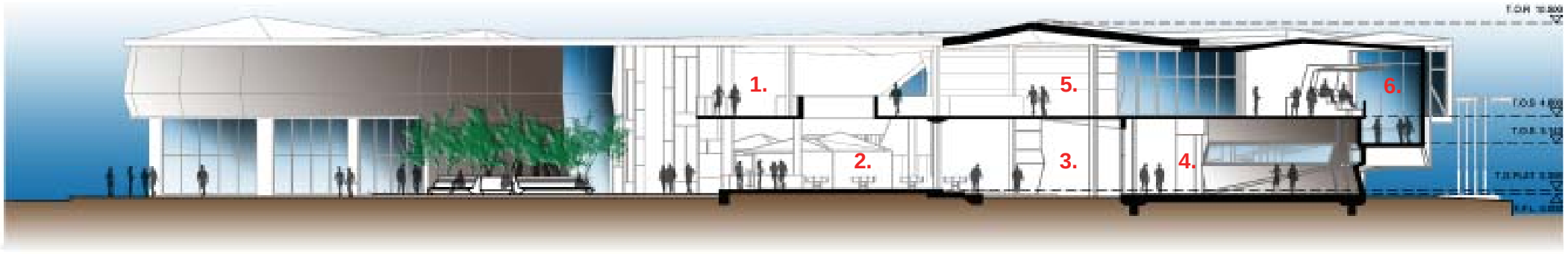
The student lecture theatre cantilevers over public walkways. It is separated from the public courtyard thereby preventing noise pollution from interfering with its functionality.



SECTION B-B

1. Platform
2. Restaurant deck
3. Walkway
4. Multi-media centre
5. Covered walkway
6. Open projection area

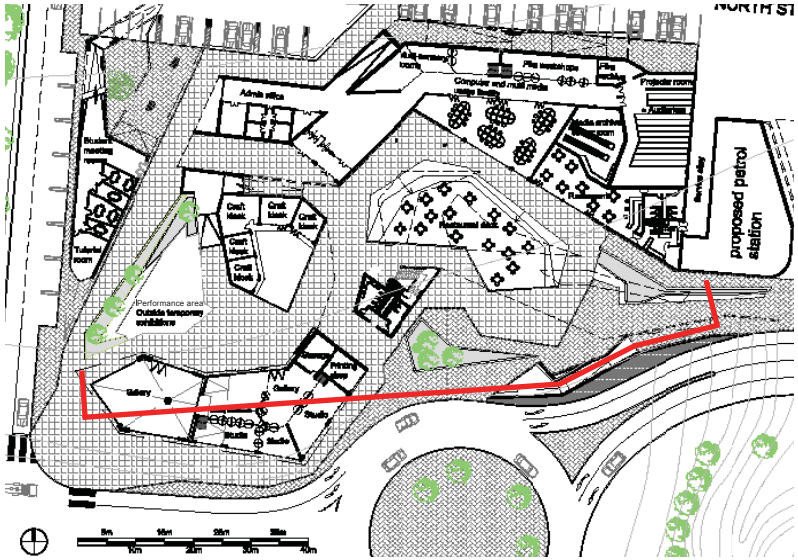
Not to scale



Standing on the platform, the user has unobstructed views over the south part of the site and eastwards over the bridge. Cut-outs in the platform allow for dynamic interaction between the levels as the restaurant deck is situated below. The partially covered deck provides dappled light for the restaurant below.

The dual function of the walkway is evident at night when the space is also utilised as the entrance to various night facilities.

The multi-media centre has irregular walls which are designed to fit the users requirements such as desk space and computer terminals. The ramp from ground to first floor has a dual action of access as well as an open projection area where digital media is projected on the wall.



SECTION C-C

1. Gallery
2. Lecture theatre
3. Studio
4. Computer lab
5. Ramp
6. Entrance off ex. foot bridge

Not to scale

The angled wall in the gallery space gives the user the impression of an elongated space. This draws interest to the variations of spaces.
The studio space functions and feeds off from the gallery. From this space the user has a visual link over the outside gardens.

The protruding and irregular walls on the first floor mould and twist to provide seating and work top stations for the lecture theatre and computer lab respectively.

The ramp picks up or drops off pedestrians near these gardens. It winds up along the existing slope where it is met by the entrance of the existing foot bridge. It is at this point the user decides on his/her journey through the facility.





SECTION D-D

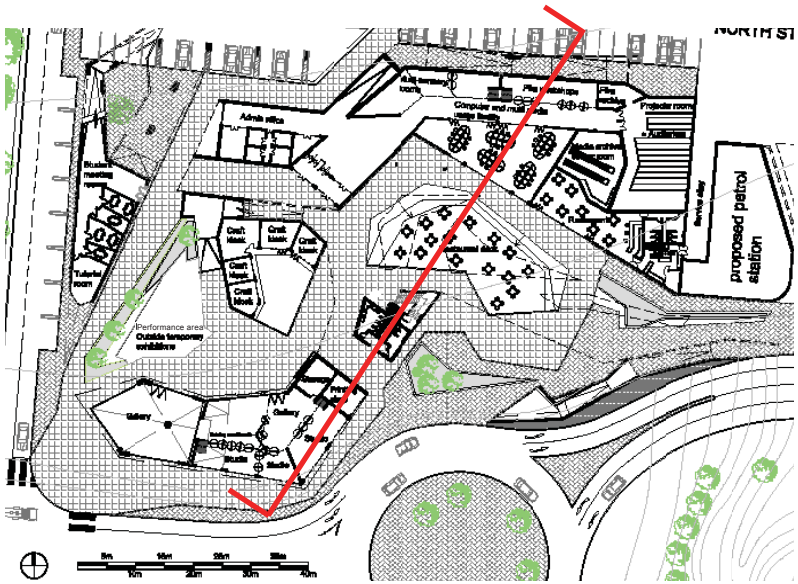
1. Internal ramp
2. Open projection area
3. Walkway
4. Student lecture theatre
5. Crit studio
6. Gardens

Not to scale



The ramp linking the floors of the multi-media centre provides ease of access for all users. While accessing the ramp, projections along the walls will capture the minds and interests of the user. Seating has been provided for those wishing to view further screenings as well as to partake in informal talks.

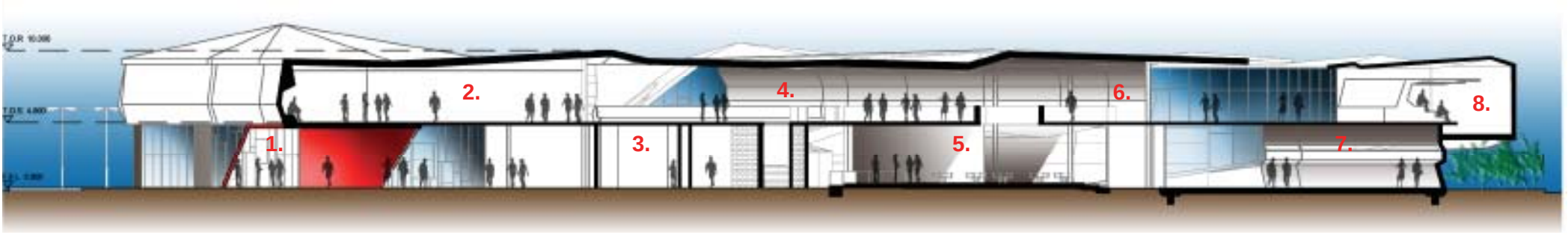
The student centre cantilevers over gardens, the latter which can be accessed by the public wishing to take some time out. Standing in the student lecture theatre, the user overlooks public walkways, the slightly slanted glass facade deflects lights and reflects the public activity below.



SECTION E-E

1. Studio
2. Editing suite
3. Printing shop
4. Computer lab
5. Restaurant deck
6. Covered walkway
7. Multi-media centre
8. Open projection area

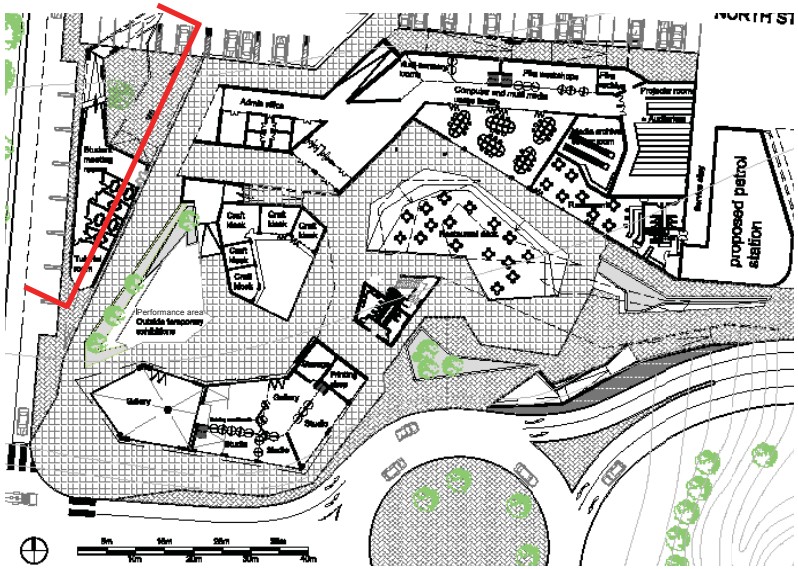
Not to scale



A pedestrian walking along the landscaped pavement will be intrigued by the views perceived through the permeable structure of the public interface building.

The computer labs on the first floor are accessed by a covered walkway leading off the platform. From this point, the user can view the proceedings taking place below in the performance and exhibition space as well as the kiosks.

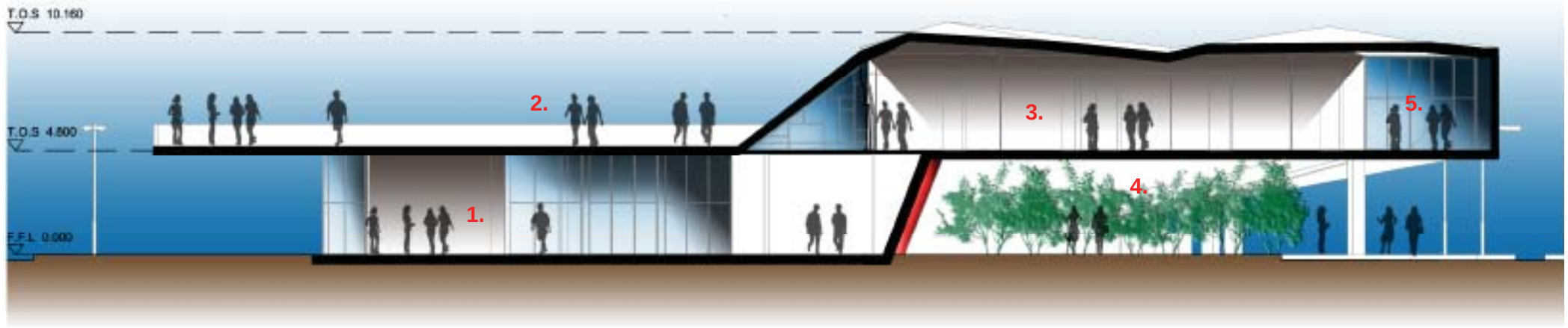
While enjoying a meal at the restaurant deck, the user can experience the sights, sounds and atmosphere taking place at any given moment.



SECTION F-F

1. Student meeting room
2. Roof garden
3. Crit studio
4. Gardens
5. Student lecture theatre

Not to scale



Students are provided with a dynamic exchangeable space on ground floor that they are able to mould to suit their needs. This can be the size of group meetings or private one on one tutoring. The glass facades are indicative to the open programme of learning while the angled wall is reminiscent of the gallery space and playing with the perception of space.

The crit studio gives students space for informal discussions and becomes a shelter of ideas. It is the link between the lecture theatre and the roof gardens. This green space allows students private space for relaxation and exchange of ideas.



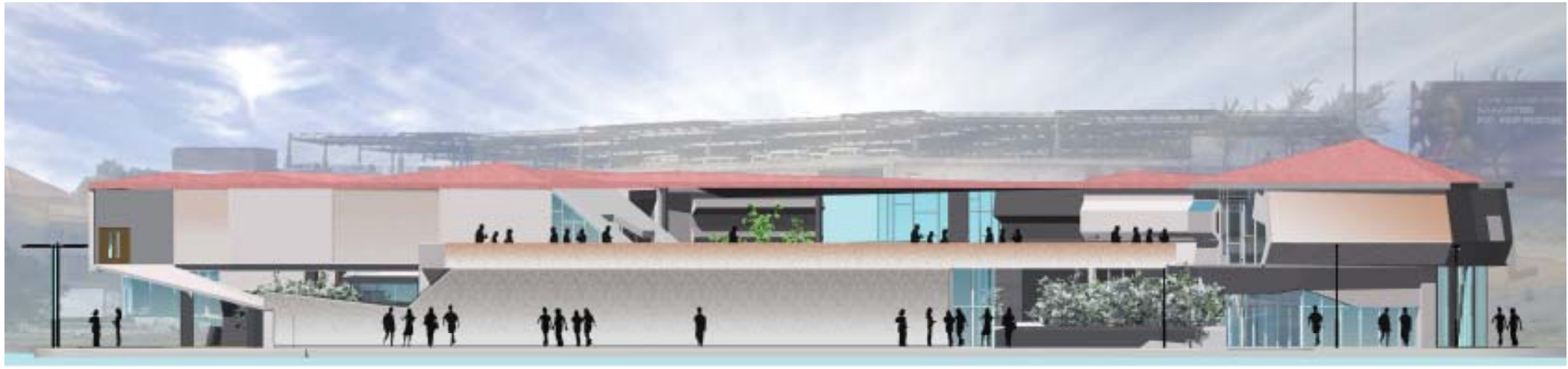
NORTH ELEVATION
Not to scale



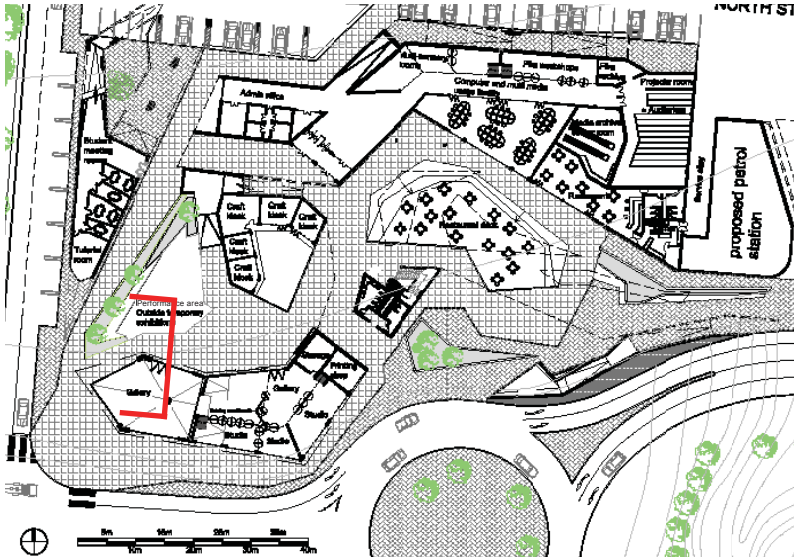
SOUTH ELEVATION
Not to scale



EAST ELEVATION
Not to scale



WEST ELEVATION
Not to scale

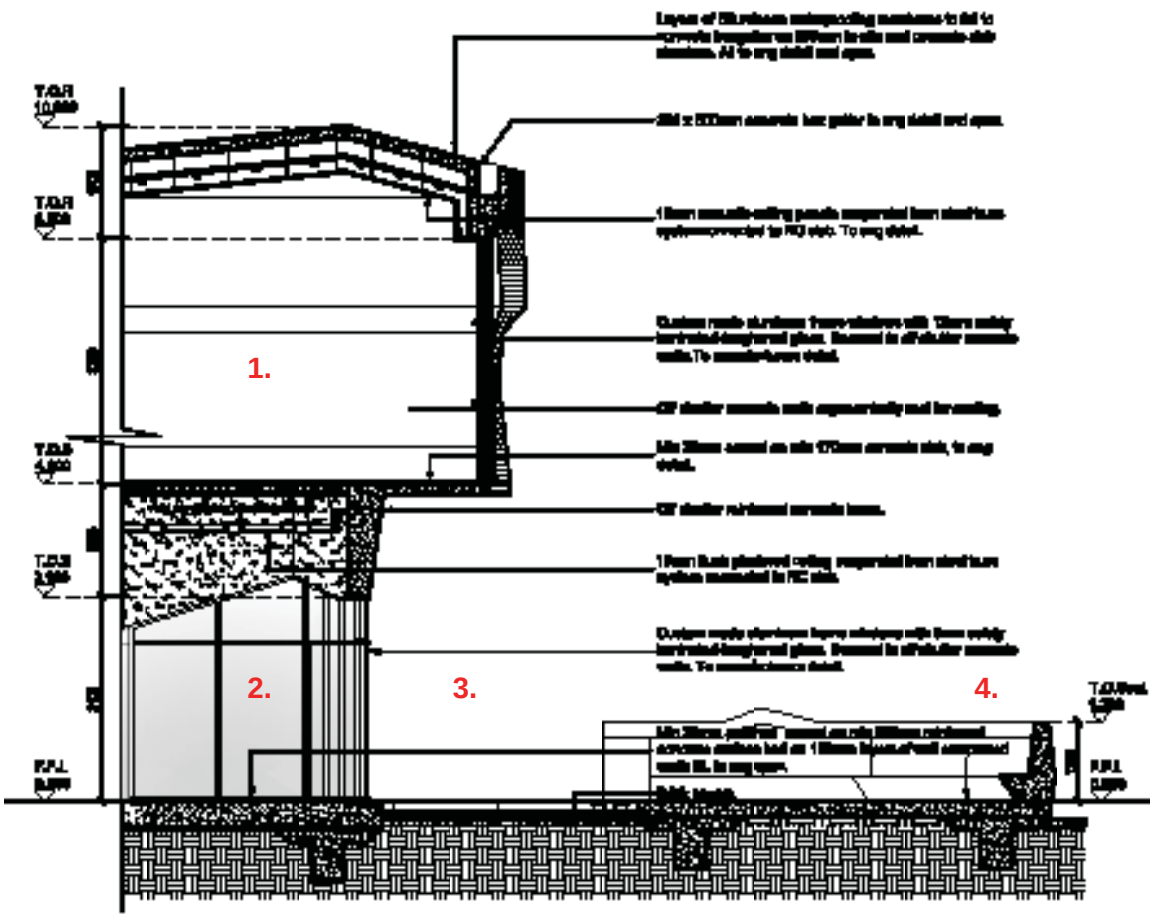


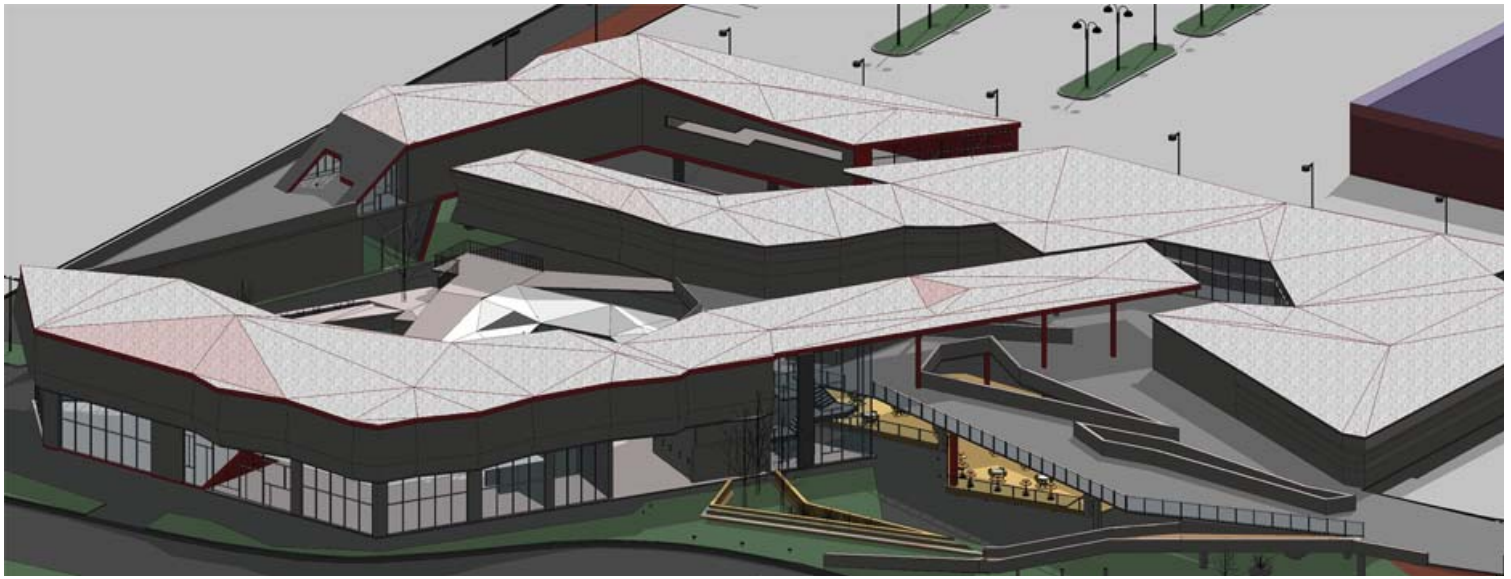
DETAILED SECTION

1. Student lecture theatre
2. Gallery
3. Semi-covered walkway
4. Outside exhibition area / seating

Not to scale

The student lecture theatre is constructed from in-situ cast concrete. The system of roofs and walls that form one complete shell include cast in box gutters, moulded seating and wrapped around flooring. Acoustic panels and lighting fixtures follow the ergonomic shape of the building. Custom glazing is fitted to irregular openings within the shell.





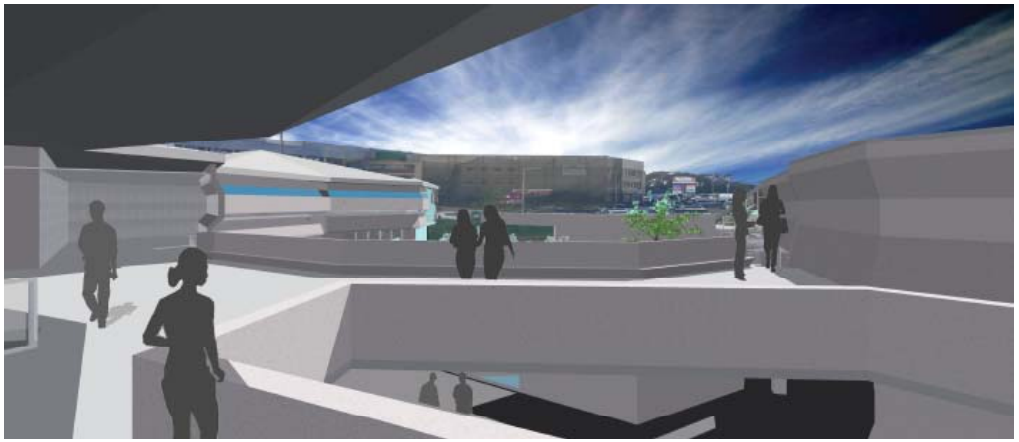
SOUTH EAST AERIAL VIEW



SOUTH WEST AERIAL VIEW



1. As a pedestrian heads west over the foot bridge towards the facility, this is the view of Alexandra that is left behind. The journey of digital advancement has begun.



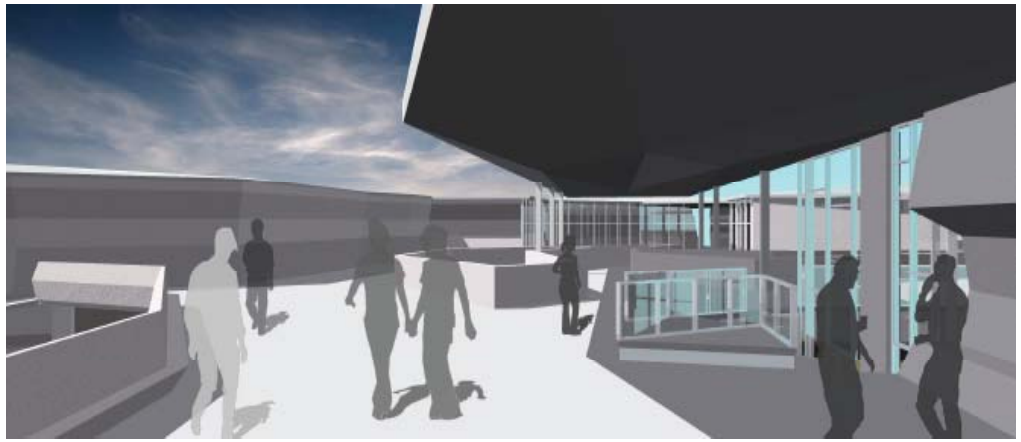
3. Walking along the platform, the pedestrian has a clear view of Alexandra. This is a transitional space where the exchange of ideas is encouraged through the use of navigating spaces.



2. Standing at the threshold where the bridge meets the platform, the pedestrian is provided with two choices of circulation. The first choice is to continue along the platform and explore the facility while the other takes the pedestrian straight to the ground floor.



4. Cut-outs in the platform serve as a dual function. They enable natural light to filter through to the ground floor while creating a visually dynamic link between the two planes.



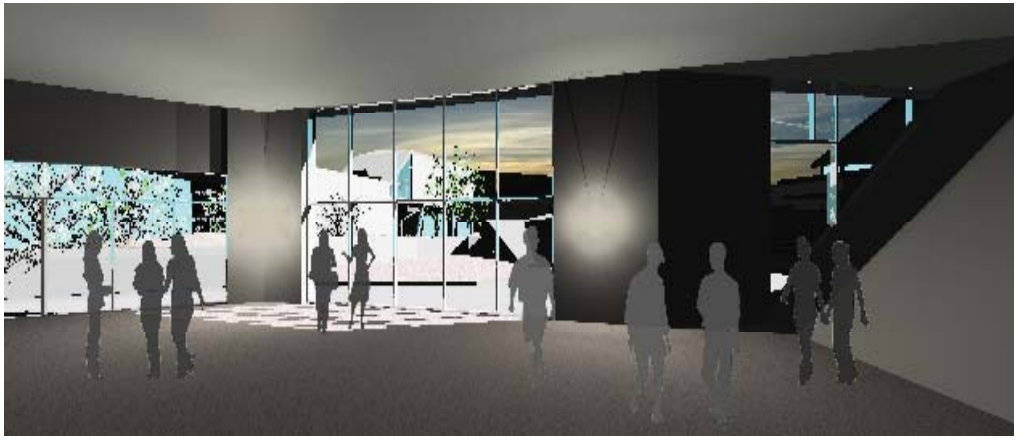
5. The horizontal roof structure links the north and south buildings on the platform is a focal point that acts as a directional element for the convergence of the user.



7. Walking up the ramp, the view over the craft kiosks and public courtyard keep the user entertained. This journey is a flowing eased path between the planes as the ramp wraps itself around the kiosk.



6. Standing in front of the entrance to the student study area, the outside exhibition space is visible. This area provides greenery, seating and performance space. The greenery of the performance space acts as a anti noise pollution buffer for the student study area.



8. The large overhangs of the first floor provide the gallery below with shelter from the direct harsh sunlight thus creating subdued ambience within the creative space. With permeable planes as walls, the user can experience the artwork inside whilst enjoying the public courtyard proceedings.



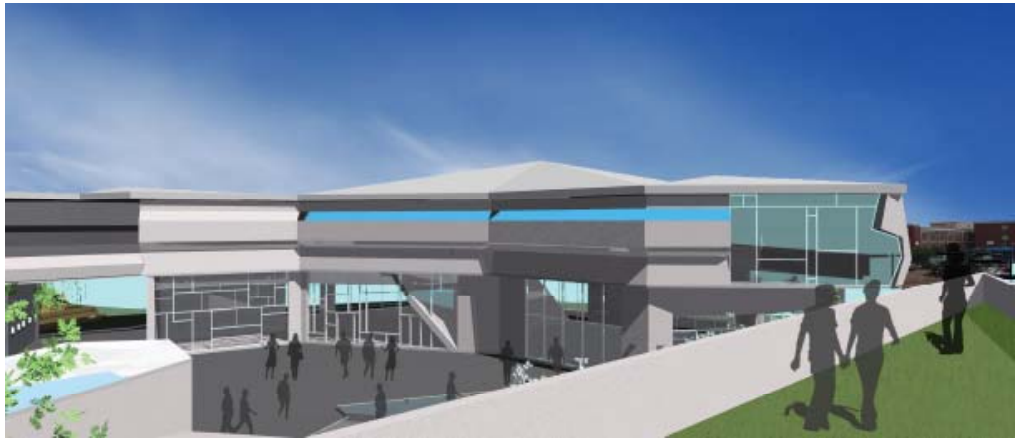
9. The west view over the student study area roof garden is a tranquil space for the students to relax, exchange ideas and socialise. The large converging overhang acts as a directional element for the entrace off Rautenbach Avenue.



10. The student study area is flanked from the rest of the facility by a divisional walkway. Various ramps, staircases and the platform link the rest of the facility together.



11. The restaurant deck is located centrally on the site thus activating all other surrounding spaces making it full of life. This is where people meet, communicate and share stories any time of the day or night.



12. While the students enjoy time out on the roof garden, they can view the hustle and bustle below in the public courtyard and public lecture theatre diagonally across.



13. Walking up the ramp in the multi media usage facility the user experiences digital projections along the wall. Moulded seating is provided for the intrigued viewers' enjoyment



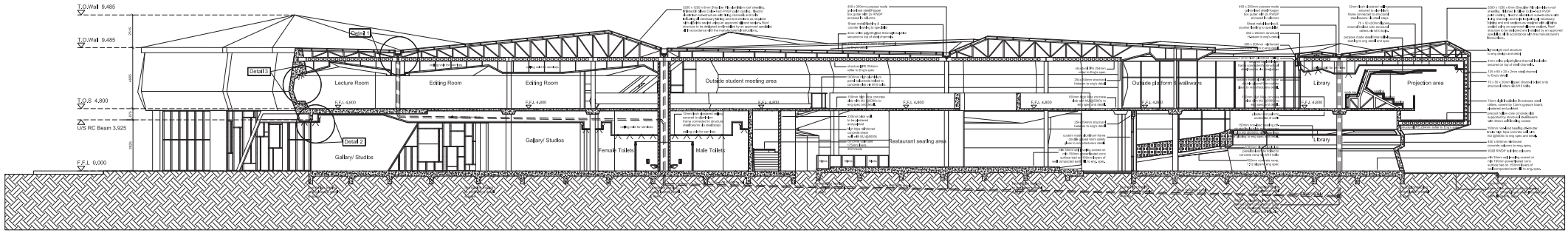
15. Users arriving by car are greeted by the cantilevered student lecture theatre above with a tilted glass facade which mirrors the activities on ground floor. Activities within the multi media usage facility are visible as the base of the internal ramp is a glazed box.



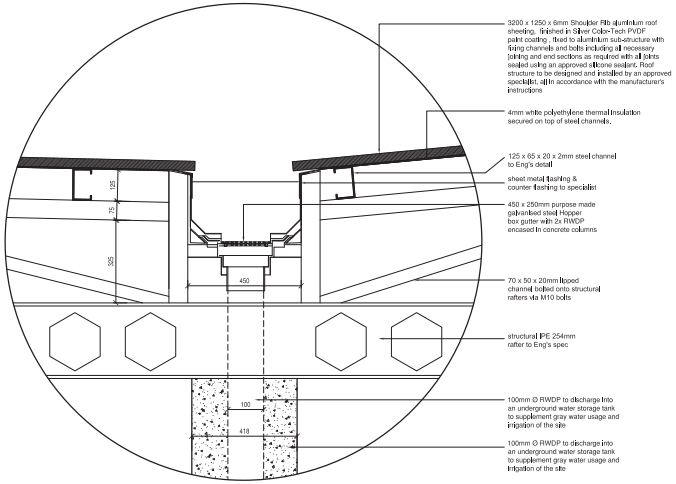
14. The spacious landscaped pavements and greenery off the entrance of Rautenbach Avenue allows the users to utilise the open circulation space at their free will. The public courtyard is made attainable from the street by the use of permeable facades.



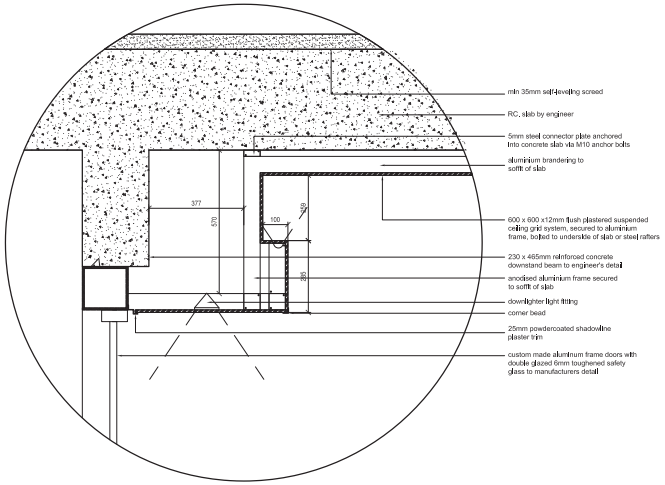
16. The multi media usage facility is open to the user at night, thus vibrancy of the site is sustained at all times. The user is provided with the opportunity to access the facility and its functions long after the close of the working day.



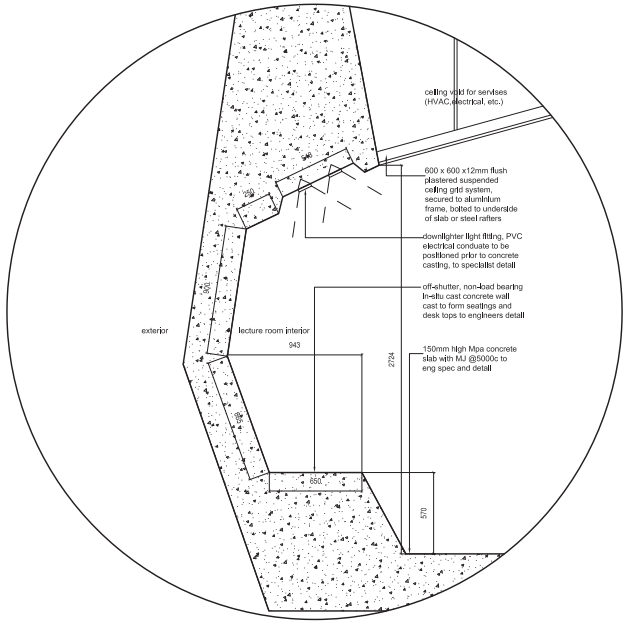
Section C.C.



Detail 1: Hopper box gutter



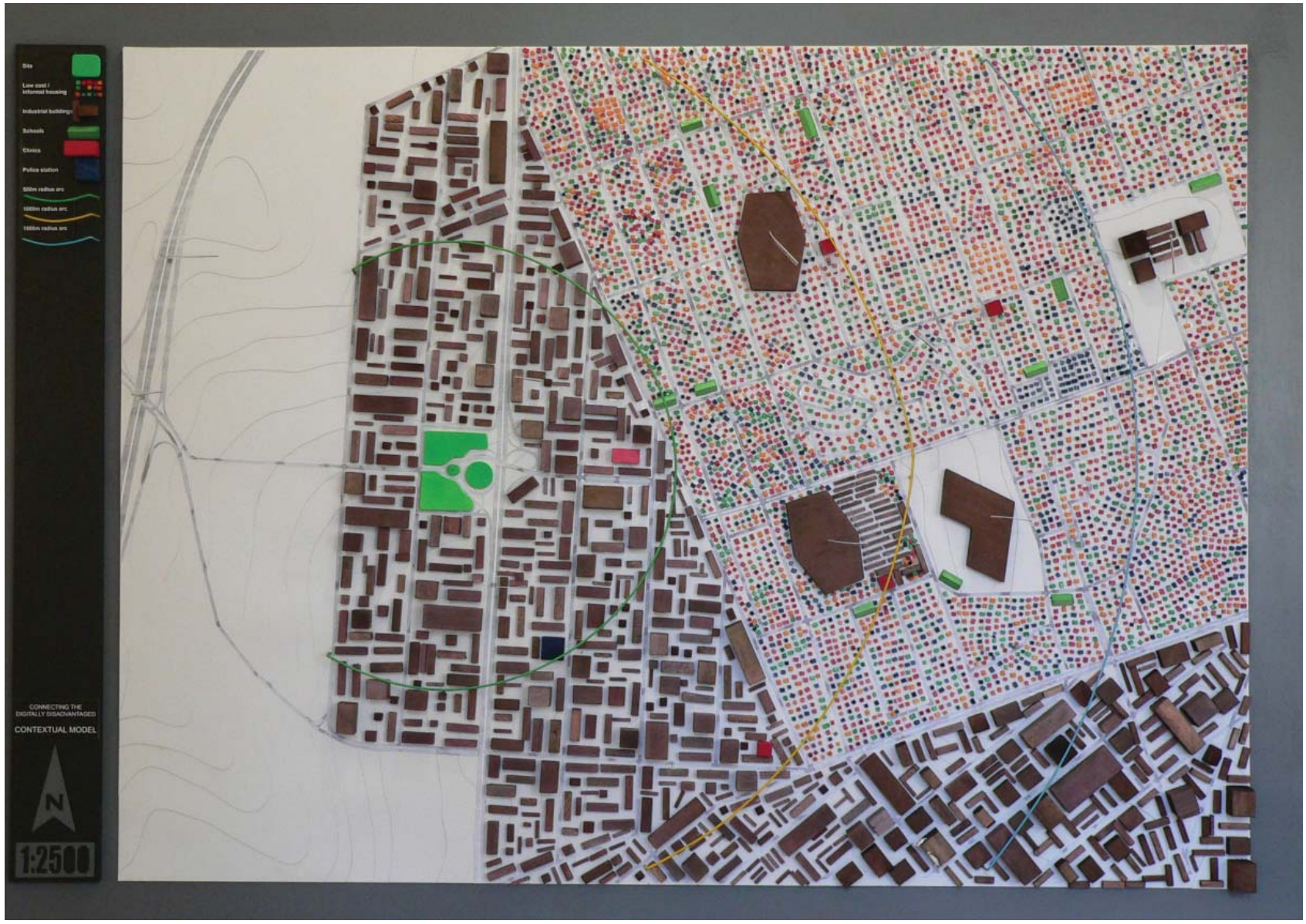
Detail 2: Concrete downstand beam



Detail 3: Moulded seating


NORTH STREET
FOURTH STREET
Service alley
proposed petrol station
Student meeting rooms
Tutorial room
Admin office
Multi-sensory rooms
Computer and multi media usage facility
Film archive
Film workshops
Projector room
Auditorium
Media archive server room
Restaurant
Toilets
Kitchen
Pump Room
Storage
Plant Room
Plant Room
Craft kiosk
Craft kiosk
Craft kiosk
Craft kiosk
Craft kiosk
Kiosk deck
Restaurant deck
Performance area Outside temporary exhibitions
Gallery
Gallery
Studio
Studio
Studio
Printing shop
Storage
Ground Floor Plan
5m 10m 15m 20m 25m 30m 35m 40m 45m 50m

Contextual site model











Site model


NORTH STREET
PRETORIA MAIN
PRETORIA MAIN
RAUTENBACH AVENUE
WATT AVENUE
FOURTH STREET
PRETORIA MAIN
PRETORIA MAIN
SOUTH STREET
CONNECTING THE DIGITALLY DISADVANTAGED
SITE MODEL
N
1:250











8.2 Final analysis

In summarizing, the opening proposition of this thesis was that as politicians and economists propose countless solutions to counter the ever widening gap between the rich and the poor one course of action which appears to garner universal approval is that of education. The role of education, skills and know-how is even more acute when dealing with the requirements and needs of the modern digital economy. Without a basic knowledge of the digital world (viz. computer related technology and applications) it is extremely difficult if not impossible to play a meaningful role in such an environment. As has been pointed out earlier in this work, the majority of the residents of Alexandra township are seriously disadvantaged in terms of such skills and knowledge. These residents include the older segment of the population with minimal educational levels and economic means as well as students with minimal or no access to computers.

This thesis addresses this serious and fundamental gap, referred to as the 'digital divide' from an architectural viewpoint.

The thesis proposes an architectural solution to the digital divide which in turn provides the possibilities and opportunities for personal progress and development and ultimately for a wider community upliftment and economic betterment. The proposed development offers not only a wide variety of educational possibilities but also programmes of action and venues for practical applications where 'hands-on' trial-and-error learning takes place.

In terms of the development itself, the campus like layout of the facilities allows for maximum dialogue between pedestrians wishing to pass through the site; to stop for a while or to access the various functional areas. The processes and programmes created by the facility and its architecture provides a unique digital educational experience for the residents of Alexandra. Specific spaces created by the architecture allow for the different types of digital upskilling, encouraging dialogue and sharing. The general public who access the site daily will be drawn into the facilities by the inviting public domain comprising of kiosks, gardens and interaction spaces.

The architecture respects the local context in terms of scale and materiality whilst simultaneously contradicting it in terms of space and form. This dynamic interplay represents the linkage needed into the digital world, viz. the fusion of old world thinking, ideas, notions etc and the requirement for proficiency in modern work skills and practices. In keeping with the local context, the proposed facility is restrained and not ostentatious but is nevertheless state-of-art in terms of its design and functional intent.

Modern technologies and materials such as steel and concrete are used in the construction thereby promoting local empowerment. Expensive and foreign materials are shunned as far as possible. The greater majority of the facility is constructed from in-situ concrete which permits the production of the dynamically challenged architecture. The permeable walls on the ground floor around the public domain are constructed from steel and glass. These walls are interchangeable and moveable thereby

allowing for maximum flexibility of the ground level programmes. In essence, these permeable walls become an extension of the pedestrian movements.

Alexandra is located in a benevolent subtropical Highveld climatic zone and one which should be utilized and taken advantage of to the maximum extent possible. As a result the facility responds to this benign climatic condition by means of certain walls that are permeable thereby allowing the users to respond to the external weather conditions by opening or closing partitions as required. In the non-permeable spaces such as the library, large roof overhangs and strip windows allow penetration of indirect light whilst also allowing for constant cooling, air movement and cross ventilation.

The public interface building, comprising the gallery, various studio spaces and the outside exhibition/performance area is the nerve canter of the facility with all activities gathering and branching out from there. All pedestrian movement and student functions converging on the site are funnelled intentionally through this public piazza. Such planning strategy applies not only to the students' daily routine and the interests of visitors but also to the building functionality. This dynamic focal point of the site is visually evident in the spatial arrangement that encompasses the whole central part of the public courtyards, kiosks and restaurant. It articulates the buildings as a point of confluence and the culmination of various converging flows. These flows are both the circulation of people on the site as well as programmatic flows and links of the building itself.
Through successive iterations of design development the building solution evolved into a functional organisation which allows the phasing of spaces from public to more private activities. Thus, for example, the student library, lecture venues and crit studios are buffered from the noisy segments of the site. The floors are connected via continuous planes and ramps allowing for ease of access as well as seamless circulation within the buildings. The floor plates are large enough to allow for flexible occupation patterns. The integration of facilities is assisted by an overall transparency of the internal organisation, thereby allowing for the mixing of functions and steering away from the traditional segregation of status groups.

In conclusion, the architecture of the facility and the manner in which the site accommodates pedestrians facilitates a direct link into the grapevine of life on the streets of Alexandra. A state-of-art facility is presented which will allow the residents of the township the opportunity to become au-fait with and participate in the digital revolution - and to derive its subsequent benefits and opportunities from which they were (and currently remain) excluded. Residents of Alexandra can and should be part of this bright new world of possibilities. No longer should basic skills development with a focus on digital competency remain lacking in the lives of the people of Alexandra.



IN CONTEXT OF THE ALEXANDRA DIGITAL DIVIDE,
ARCHITECTURE HAS AN OBLIGATION

AND ...

ARCHITECTURE HAS A SOLUTION!

Post script

As a point of interest and future exploratory work, it is very likely that similar digital divides also exists in most other so-called Black townships. An analysis of township specific criteria would be necessary in determining whether a solution such as proposed in this thesis would also be generically applicable.

“I think it would be good for the children and community especially people staying in the settlements. They are going to learn and improve themselves to go forward”

Survey respondent

09_References

University of the Witwatersrand
Department of Architecture
Faculty of Engineering and the Built Environment
Master of Architecture (Professional)

Thesis Research Topic: Connecting the Digitally Disadvantaged (in Alexandra Township)

Instructions: Please place an X in the block which best fits your answer:

1	Do you have access to a computer during working hours?	Yes	No
2	Do you have access to the internet during working hours?	Yes	No
3	Do you have access to a computer at home?	Yes	No
4	Do you have access to the internet at home?	Yes	No
5	Do you believe that computer competency would promote your career prospects?	Yes	No
6	Do you believe it is important for children to be computer literate?	Yes	No
7	Would you make use of a community based 24 Hr multi-media facility* which facilitates internet access and promotes computer use competency?	Yes	No
8	Would you support the establishment of such a multi-media facility in the township?	Yes	No
9	How much would you be willing to pay (per month) for the unlimited use of a township multi-media facility? (State amount: R 0; R25; R50; R 75; R 100+)	R	

Any other comments:

(*A multi-media center would include computer work-stations, library, study areas, presentation rooms, gallery space, archive room, meeting rooms, workshop areas, canteen and informal meeting areas.)

Please tell us something about yourself:

Highest qualification attained:		Age:	

Thank you for your co-operation in completing this questionnaire!

Davide Slaviero
(MArch candidate)

Annexure 1: Respondent questionnaire

Connecting the Digitally Disadvantaged (in Alexandra Township)
Respondent Survey Data

Respondent	Q1		Q2		Q3		Q4		Q5		Q6		Q7		Q8		Q9						Age	20 to 30	31 to 40	41 to 50	51 to 60	Qual	Degree	Diploma	Grade 12	< Grade 12	Comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	R	0	25	50	75	100+											
1		1		1		1		1	1		1		1		1		50			1			25	1				12			1		Yes
2		1		1		1		1	1		1		1		1		25		1				22	1				Diploma		1			No
3		1		1		1		1	1		1		1		1		0	1					44			1		12			1		Yes
4		1		1		1		1	1		1		1		1		25		1				37		1			12			1		Yes
5		1		1		1		1	1		1		1		1		50			1			52				1	12			1		Yes
6		1		1	1		1		1		1		1		1		25		1				33		1			12			1		Yes
7		1		1	1		1		1		1		1		1		25		1				24	1				12			1		No
8		1		1		1		1	1		1		1		1		50			1			25	1				12			1		No
9		1		1		1		1	1		1		1		1		50			1			35		1			12			1		Yes
10		1		1		1		1	1		1		1		1		50			1			27	1				12			1		Yes
11		1		1	1		1		1		1		1		1		50			1			48			1		11				1	Yes
12		1		1	1			1	1		1		1		1		75				1		47			1		10				1	No
13		1		1		1		1	1		1		1		1		50			1			47			1		10				1	No
14		1		1	1			1	1		1		1		1		100					1	39		1			10				1	No
15		1		1		1		1	1		1		1		1		25		1				52				1	8				1	No
16		1		1	1			1	1		1		1		1		25		1				26	1				12			1		Yes
17	1			1		1		1	1		1		1		1		50			1			33		1			12			1		Yes
18		1		1		1		1	1		1		1		1		50			1			43			1		8				1	No
19		1		1		1		1	1		1		1		1		50			1			26	1				12			1		Yes
20		1		1	1		1		1		1		1		1		100					1	28	1				Degree	1				No
21		1		1		1		1	1		1		1		1		25		1				31		1			11				1	No
22		1		1		1		1	1		1		1		1		50			1			44			1		12			1		Yes
23	1		1			1		1	1		1		1		1		75				1		25	1				12			1		Yes
24	1		1		1			1	1		1		1		1		50			1			30	1				Diploma		1			Yes
25	1		1		1		1		1		1			1	1		25		1				53				1	12			1		Yes
26	1			1		1		1	1		1		1		1		100					1	44			1		12			1		Yes
27		1		1		1		1	1		1		1		1		100					1	59				1	10				1	Yes
28		1		1		1		1	1		1		1		1		25		1				41			1		12			1		Yes
29		1		1		1		1	1		1		1		1		25		1				26	1				11				1	Yes
30		1		1		1		1	1		1		1		1		25		1				36		1			11				1	Yes
31		1		1		1		1	1		1		1		1		25		1				24	1				12			1		Yes
32		1		1		1		1	1		1		1		1		50			1			32		1			12			1		Yes
33		1		1		1		1	1		1		1		1		25		1				31		1			11				1	Yes
34		1		1		1		1	1		1		1		1		50			1			39		1			11				1	Yes
35		1		1		1		1	1			1		1		1	25		1				31		1			11				1	Yes
36		1		1		1		1	1		1		1		1		25		1				33		1			12				1	Yes
37		1		1		1		1	1		1		1		1		0	1					38		1			12			1		Yes
38		1		1		1		1	1		1		1		1		25		1				35		1			12			1		Yes
39		1		1		1		1	1		1		1		1		0	1					31		1			12			1		Yes
40		1		1	1		1		1		1		1		1		25		1				22	1				12			1		Yes
41		1		1		1		1	1		1		1		1		50			1			41			1		11				1	Yes
42		1		1		1		1	1		1		1		1		0	1					36		1			12			1		Yes
43		1		1		1		1	1		1		1		1		0	1					25	1				12			1		Yes
Sum	5	38	3	40	10	33	6	37	43	0	43	0	41	2	42	1		5	17	15	2	4		14	16	9	4		1	2	25	15	
Percentage	12	88	7	93	23	77	14	86	100	0	100	0	95	5	98	2		12	40	35	5	9		33	37	21	9		2	5	58	35	
Checksum	100		100		100		100		100		100		100		100			100						100					100					

Annexure 2: Tabulated results of respondent survey

Design response

The concept of this design came about from a combination of the programme, context, spatial experimentations, site and intuitively led to free flowing spaces. These free flowing spaces represented the speed of the design, as the technological world is moving forward so this is represented in parts of the design, this is the need to quickly move forward so as to close the technological gap.

Stage 1 below is one of the first design responses; this design was a direct result of studying asemic art. The ‘tentacles’ represent the pace of the site, the integration and crossing of paths that currently take place.



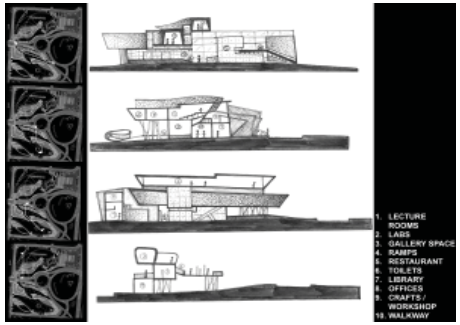
Annexure 3: Design response

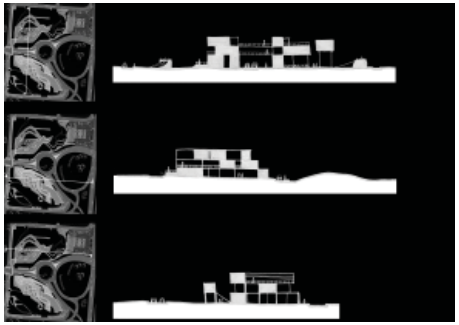












Stage 2: After re-visiting the programme, an understanding was evident of the sizing and scale of the building that would sit on the site. This was the beginning of specific scenarios which were created by giving functions to the facility.



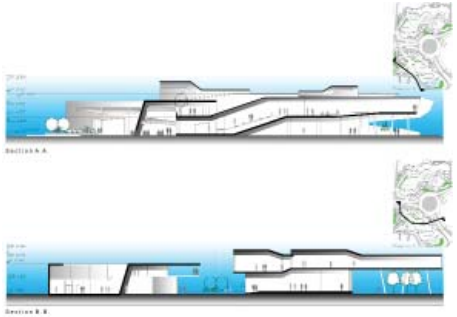



Stage 3: These plans are an indication of artistic expressions in the forms that have been created. Through the different forms that have been experimented with, various types of spaces and scenarios have emerged.

The facility is disjointed across the site with public activities to the north and student activities taking place on the south part of the site. Little focus is on the actual user of the facility here but rather on the process of tying the site together. This is achieved later on by focussing on the users and their needs.



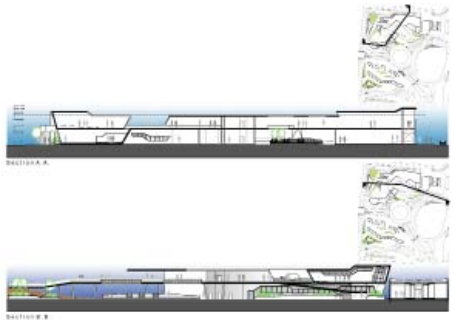


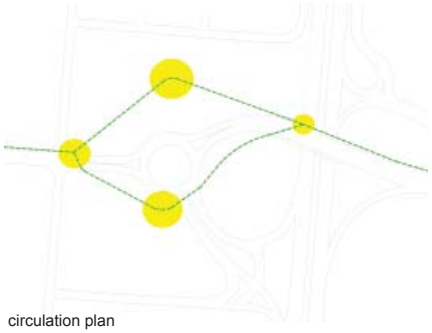



Stage 4: This proposal looks directly at the users and their movements. Different bridges and walkways were experimented with as were the start of different facades and materials.









circulation plan



Stage 5: The circulation has been re-worked completely; a circular pattern now becomes dominant. Pedestrians are picked up off the main bridge and brought into the building. This is an extension of the bridge into the site.

The overall footprint of the building has been ‘edited’ down. The south part of the site has been changed drastically, the building that was there is mostly incorporated into the north part of the site. This leaves for open space that is now landscaped.

Parking is now off the street edge.

General pavements are wider and greater street edge activity is emphasized especially on the south part of the site with the buildings having street fronts on both the front and back sides.

The existing bridge that is the main pedestrian route has become an extension into the building, this is done by a ramp and large platform that acts as a linkage between the buildings on the north part of the site.

Image 1: Artist: CHRISTOPHER MAFAFO
Title: Sheepheads

Image 2: Alex Life.
Photos by author.

Image 3: Bandwidth cost table
www.computerwiz.co.za/wp-content/uploads/2010/04/uncapped-adsl.jpg

Image 4: Table of costs of personal PC's
www.incredible.co.za/ProductsByCategory.

Image 4.1: Table of household earnings
www.alexandra.co.za

Image 5: Table of household items
www.alexandra.co.za

Image 6: Energy calculator
http://www.eskomdsm.co.za/?q=energy_calculator

Image 7: Power outages article
http://www.joburg.org.za/content/view/1748/245/

Image 8 and 8.1: Crime Statistics
www.alexandra.co.za

Image 9: Digital Divide
www.media/photobucket.com

Image 10: Table 1
www.wikimedia.org/wikipedia/commons/2/25/Internet_users_per_100_inhabitants_1997-2007_ITU.png

Image 11: Digital divide cartoon
www.unripe.com

Image 12: XO-3
www.tuvie.com

Image 13: Froot concept computer
www.tuvie.com

Image 14: Map of Gauteng
Drawn by author

Image 15: Map of Alexandra
Drawn by author

Image 16, 18, 20, 21: Maps of Greater Johannesburg
www.deat.gov.za/Enviro-Info/sote/citysoe/johannes.jpeg

Image 17: Survey table
Alex benchmark survey 2005

Image 19: Landuse map of Alexandra
Marina Meyer

Image 22: Images of Alexandra
www.google/images.com

Image 23: Icons of Alexandra
www.alexandra.co.za

Image 24: Images and map of Alexandra
www.alexandra.co.za
map drawn by author

images

Image 25: Alexandra Township
www.alexandra.co.za

Image 26: Map of Alexandra
www.alexandra.co.za

Image 27: ARP
www.alexandra.co.za

Image 28: Map of Alexandra
www.alexandra.co.za

Image 29: South Africa, Alive with Possibilities
www.google/images.com

Image 30: ABET
www.google/images.com

Image 31: Mapping of Africa to Alexandra
Drawn by author

Image 32: Aerial photo of Alexandra
www.joburg.org.za

Image 33-37: Alexandra mapping
Drawn by author

Image 38: MAXXI images
http://www.designboom.com

Image 39, 43 & 45: Painting of MAXXI
http://www.zaha-hadid.com

Image 40: Aerial photo of MAXXI
http://www.zaha-hadid.com

Image 41 & 42: Images of MAXXI
http://www.zaha-hadid.com

Image 44: Plans of MAXXI
http://www.zaha-hadid.com

Image 46: Asemic Scapes
http://www.dezeen.com

Image 47: Asemic Scapes
http://www.dezeen.com

Image 48: Plans of Asemic Scapes
http://www.dezeen.com

Image 49: Images of //hapo
http://www.worldbuildingsdirectory.com

Image 50 & 51: Exterior and interior photo of //hapo
http://www.worldarchitecturenews.com

Image 52, 53 & 54: Images of Royal Netherlands Embassy
www.archidose.org

Image 55 & 56: Life in Regent Park
www.catchdaflava.com

Image 57: Life in Sendai
www.city.sendai.jp/kikaku/kokusai/english/asobu.html

Image 58: Interior photos of Sendai Mediatheque
www.city.sendai.jp/kikaku/kokusai/english/asobu.html

Image 59: Arial photo
www.joburg.org.za

Image 60 & 61: Sketches of Sendai Mediatheque
www.city.sendai.jp/kikaku/kokusai/english/asobu.html

Image 62: Life in Seattle
http://en.wikipedia.org/wiki/Seattle

Image 63: Exterior photos of Seattle Public Library
www.arcspace.com

Image 64 & 65: Perspectives Seattle Public Library
www.publicauthors.com

Image 66: Results of questionairre
Drawn by author

Image 67: Interviewee's comments
Drawn by author

Image 68: Explanation of programme
Drawn by author

Image 69: Mapping of Africa to Alexandra
Drawn by author

Image 70: Site photos
Drawn by author

Image 70: Site photos
Drawn by author

Image 71: Aerial photo of site
www.joburg.org.za

Image 72: Master plan diagrams
Drawn by author

Image 73: Master plan
Drawn by author

Image 74: Photos through Wynberg &Alexandra
Photos by author

Image 75, 76, 77 & 78: Site photos
Photos by author

Image 79: Plan of existing facilities on site
Drawn by author

Image 80: Plan of surrounding facilities on site
Drawn by author

Image 81: Plan of physical constraints on site
Drawn by author

Image 82: Thesis charrette
Artwork by author

Image 83: Thesis charrette models
Photos by author

Image 84: Concept diagramme
Drawn by author

Image 85: Bands diagramme
Drawn by author

images

Image 86: Concept sketches
Drawn by author

Image 87: Sizing of facility models
Photos by author

Image 88: Henri Michaux Narration (excerpt) 1927

Image 89: Works by Nicolette Westfall & Jeff Crouch

Image 90: Concept models
Photos by author

Image 91: Different types of spaces
Drawn by author

Image 92: Concept models
Photos by author

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