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access

an opportunity platform for Burger's Park Pretoria

Gavin Williams

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Submitted in partial fulfilment of the requirements for the degree Magister in Architecture (Professional), Department of Architecture, Landscape Architecture and Interior Architecture, in the Faculty of Engineering, the Built Environment and Information Technology, University of Pretoria.

Pretoria 2011

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document details

Full dissertation title:	ACCESS. An Opportunity Platform for Burger's Park Pretoria
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Degree:	Master of Architecture (Professional)
Department:	Department of Architecture
Faculty:	Faculty of Engineering, Built Environment and Information Technology
University:	University of Pretoria

project summary

Programme:	Opportunity Platform - Library and Community Centre
Key Words:	accessibility, inclusive design, library, community centre, Burger's Park, Pretoria CBD, ramps.
Site description:	Adjacent to Burger's Park, Pretoria – underutilised corner site
Client:	Department of Arts and Culture, Library and Information Services
Users:	Residents of Burger's Park precinct, pedestrians passing through the precinct and people from the Pretoria CBD.
Site Location:	Erf 718 Portions 1, 2, 3 and 4, Pretoria
Address:	c/o Andries Street and Visagie Street, Pretoria, South Africa
GPS Coordinates:	25°45'9"S, 28°11'26"E

field of study

Theoretical Premise:	The understanding of accessibility in architecture and inclusive design.
Architectural Approach:	An exclusively inclusive approach to the provision of a facility and resources that address the community needs of Burger's Park
Research filed:	Urbanism and human settlements

abstract

This dissertation investigates the accessibility of public architecture. The aim is to illustrate the relevance of accessibility in architecture by establishing a theoretical premise and applying it in design.

The theoretical analysis defines inclusive design and examines the relevance of the topic within the South African context. It explores written theory on the topic and how it has evolved. The aim is to understand the implications of an inclusive design approach in architecture and to assess the inclusivity of recently completed buildings. The design investigation explores an exclusively inclusive approach in the design of a public building. The intent is to create a building that is inclusive; one that can be used by all.

Currently, there is a lack of accessible public facilities in the Burger's Park precinct, thus the Burger's Park Opportunity Platform is proposed. The Opportunity Platform is a building that provides and facilitates the necessary resources for a community to prosper. It facilitates much needed community programmes and facilities such as literacy and skills training and access to books, the Internet and other media. The public nature of this building type implies that it is to be used by the entire community, which provides appropriate conditions to explore inclusive design in Pretoria.

The study, through theoretical, empirical and contextual enquiry, provides an understanding of the principles pertaining to inclusive design and how it manifests in architecture.

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plagiarism report

In accordance with Regulation 4(e) of the General Regulations (G.57) for dissertations and theses, I declare that this thesis, which I hereby submit for the degree Master of Architecture (Professional) at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

I further state that no part of my thesis has already been, or is currently being, submitted for any such degree, diploma or other qualification.

I further declare that this thesis is substantially my own work. Where reference is made to the works of others, the extent to which that work has been used is indicated and fully acknowledged in the text and list of references.

.....

Gavin Williams

thank you

Thank you to everyone who made this journey with me.
Thank you to everyone that motivated, fed, loved and listened to me.
Thank you to the music.
Thank you to God.

This study is dedicated to Phillip Jacques van Zyl, who became a user of this building half way through the year.

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introduction

introduction and overview of the study

1

introduction

We are all potentially handicapped. Whether or not this develops into actuality is partially determined by our environment.

Kenneth Bayes & Sandra Francklin (1971: 9)

1.1 Introduction

Pretoria's central business district (CBD) is filled with unlimited potential (Wiggin, 2009: 7). Pretoria CBD is a place where the people own the sidewalks. However, the changes due to crime and overcrowding has taken this ownership away from the public sector and given it to the private sector. Security gates, palisades and metal detectors have taken away access to foyer spaces and the space in front of buildings that used to belong to the public. Add to that the uneven pavements, grand staircases and lack of texture and colour guidance; the city is no longer available to all residents.

Accessible architecture in Pretoria, the lack of community facilities in the Burger's Park precinct and the potential of vacant and underutilised sites are the reasons for this study. The proposed site, on the corner of Andries and Visagie Street, is in the ideal position to help address the issues mentioned. (Illustration 1.1)

Inclusive design in architecture will be investigated and an exclusively inclusive approach will be taken to allow for complete accessibility to the **Opportunity Platform**.

An **Opportunity Platform** is a building that provides and facilitates the necessary resources for a community to prosper. It facilitates much needed community programmes and facilities such as literacy and skills training and access to books, the Internet and other media; it is a combination of a library and community centre.

1.2 Opportunity Platform

1.2.1 What is an Opportunity Platform?

The proposed programme is that of an Opportunity Platform. An Opportunity Platform is a building that addresses the needs of the community by providing space and resources. The Opportunity Platform is a complex programme incorporating a library and community centre.

The proposed Opportunity Platform consists of 3 pillars that together aim to provide a platform of opportunities to the community of Burger's Park.

The Opportunity Platform is based on the following three pillars:
- Gather
- Learn
- Play

1.2.2 The three pillars of the Opportunity Platform

a) Gather
Providing spaces for gatherings. These spaces could be dedicated spaces and/or multi- functional space that promotes and facilitates the congregation of either large or small groups of people.

b) Learn
Providing spaces for learning. These spaces are dedicated spaces and/or multi-functional space that promotes and facilitates education and skills development such as reading and writing, and other basic skills development with the aid of resources provided in the spaces or elsewhere in the building.

c) Play

Providing spaces for playing. These spaces could be dedicated spaces and/or multi-functional spaces that promote and facilitate recreational activities, of either large or small groups of people. These recreational activities can be of an educational nature.

The Gather, Learn and Play principles are derived from the core needs of the development. The Burger's Park Precinct is rich in community programmes and committees, which are in need of permanent or temporary facilities and resources to help facilitate these programmes.

1.3 Problem statement

When designing, accessibility should be an integral component of the process and should continuously be used in decision making. Accessibility of the built environment is as important as climatic responses in the current time. However, the inclusivity of buildings in Pretoria is questionable. An access audit and exploration of possible ways to make inclusive environments an intrinsic part of architecture should be explored and implemented to promote change.

Current design trends do not reflect the necessary inclusivity that is required to make public places and spaces accessible. Imrie and Hall (2001:4) compiled a study of architects' impressions of the future users of their architecture and they state the result as: "...architects' images of their users are generalised, imprecise and stereotyped." To understand the user as a diverse group of people, and then to respond accordingly to create a building that can be "...used to the greatest extent possible, ...by everyone." (Preiser & Ostroff, 2001: 15).

Accessibility of public places is a South African Constitutional Right. Equality is the basis of what democracy stands for; including equality for disabled persons (South Africa, 1996: [5]). Current legislation (SANS 10400-S) makes provision for compulsory application of accessible features for the disabled members of society. However, this alone is insufficient to render the built environment inclusive.

By setting up design guidelines and creating awareness the inclusivity of Pretoria can be remarkably improved. By designing an inclusive public building, a precedent for future developments will be set.

1.4 Dissertation topic

The point of departure for this dissertation is neither a site nor programme, but a specific theoretical approach to design with the built environment serving as the inception.

This dissertation's topic deals with an understanding of inclusivity in the built environment and the need for it in our current context. As well as, how to incorporate and use the accompanying principles as design informants and generators in the design of public architecture such as the proposed Opportunity Platform.

1.5 Research questions

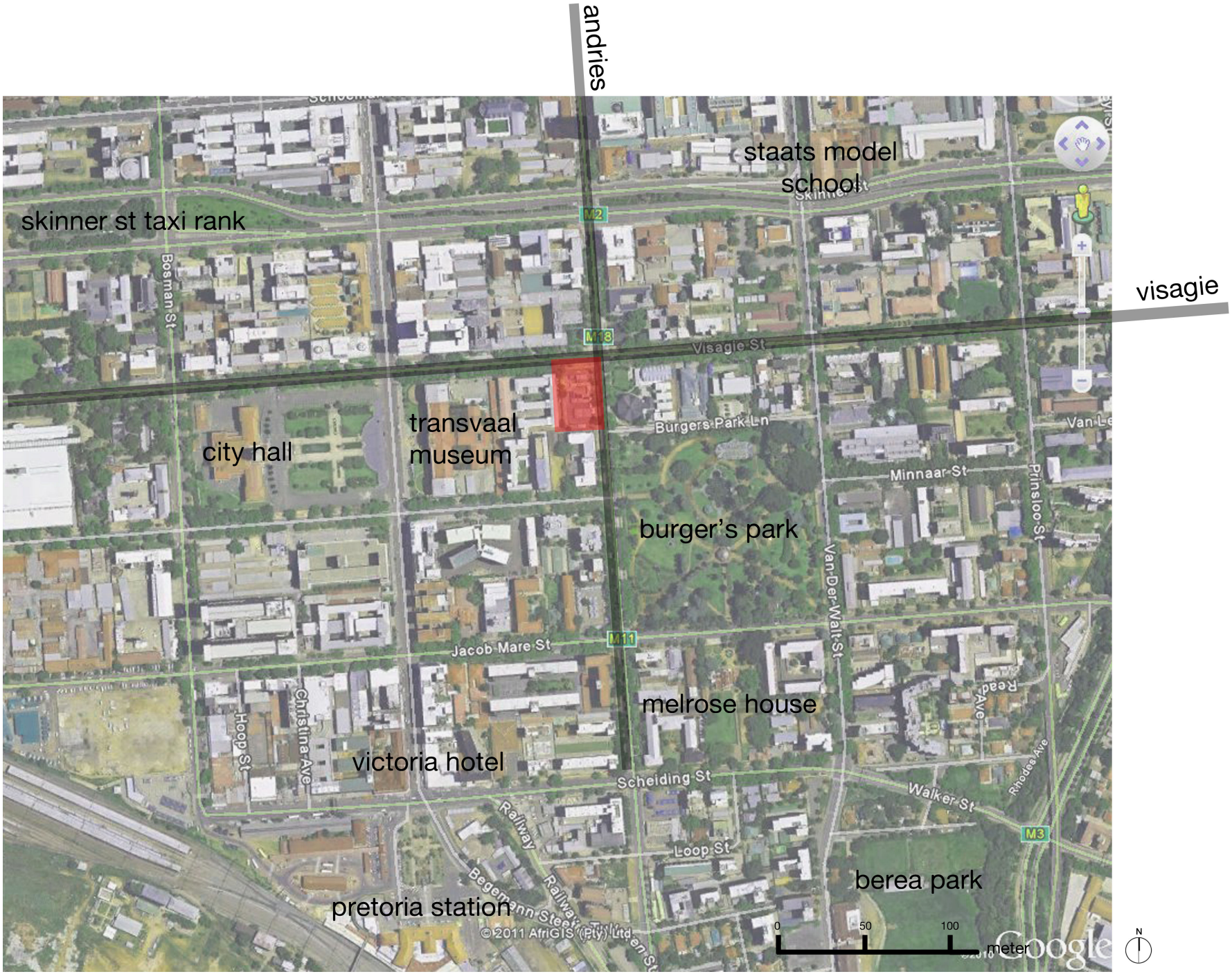
1. What is inclusive design (based upon existing literature)?
2. What is the status quo of public buildings in terms of inclusive design?
3. How can inclusive design be used as an informant in architecture?
4. How does inclusive architecture and the typology of a library / community centre manifest as an Opportunity Platform?

1.6 Aim

The aim of this dissertation is to illustrate the relevance of access within the built environment. It is argued that the attitudinal and environmental barriers that disabled people experience in society could be diminished by an appropriate design response.

The objective is to demonstrate that certain accessibility factors could be used as the foundation and design driver; especially in public architecture.

The difficulty in designing for the wide spectrum of disability is that each disability has its own needs. The intent is to design, to the greatest extent possible, to assist all persons (able-bodied included) in navigating around the building and using it as independently as possible. Should disabilities or impairments not be directly designed for, the environment will be easily adaptable.



illus. 1.1. Location of proposed site highlighted in red, with main landmarks indicated

1.7 Assumptions

- The current owner of the proposed site is willing to sell it and it is acquired by the prospective client through a deed of sale.
- That the existing programmes on site, the hairdresser and car wash, will have relocated by the time this project commences.
- The Tshwane Metropolitan Municipality will approve any zoning applications due to discrepancies of the current zoning.
- All funding mechanisms of the client are presumed sufficient for the proposed development.
- That all Tshwane Metropolitan Municipality Development strategies and the proposed framework mentioned within this document are and will be implemented as planned.

1.8 Site

1.8.1 Choice of site

455 Andries Street (Illustration 1.1) is located within walking distance of Pretoria Station and is well serviced by vehicular routes, busses and taxis. Many people (pedestrians mainly) frequent Burger's Park, opposite the site as a place of rest or to enjoy their lunch. The area is known for its residential character, but many offices and institutional and museum buildings do exist. Also certain buildings of historical and cultural value are located in the precinct. Burger's Park is the main green space in the precinct south of Skinner Street.

The precinct has a mixed use programme, with residential, office, cultural/heritage and commercial buildings mixed throughout the city blocks. Some vacant and underdeveloped stands do exist, and these detract from the character and safety of the precinct. The proposed site is currently occupied by a car wash and hairdresser, which is not ideal as the site now has an undefined urban edge. This contributes to the suitability of the site for redevelopment.

1.8.2 Location of site

The site is located on the corner of Andries and Visagie Streets, Pretoria CBD, Burger's Park Precinct. The address is 455 Andries Street, Pretoria. Refer to Illustration 1.1 for location drawing, site highlighted in red.

1.9 The client

The Department of Arts and Culture (DAC) is the primary client, and the operations of the library and community centre will be in conjunction with the National Council for Library and Information Services (NCLIS). The main objective of the NCLIS is to "provide optimal access to relevant information to every person in a cost effective manner" (Department of Arts and Culture, 2010). The vision of the NCLIS is to place South Africa as one of the most educated populations as well as to promote literacy. The funding for the development will be taken from the Community Library Services Fund as established in 1997, Trevor Manuel (Department of Arts and Culture, 2010). Management will be by the NCLIS.

1.10 The design brief

The Opportunity Platform must address all programmatic requirements as stated in 1.2 above. The Design must be contextual and must address the urban problems identified while at the same time addressing the accessibility of public architecture in Pretoria. The building must allow for social interaction and community participation.

1.11 Research methodology

- Literature review of inclusive design theory
- Critical analysis of the existing practice based upon knowledge gained from the literature review.
- Contextual analysis by mapping and visits
- Study of precedents that are examples of both inclusive design and library and community centres.

1.12 Definitions

Impairment
The result of a range of conditions such as age and trauma. Impairments can become a disability due to environmental and social barriers the persons may encounter in the built environment and products they use (Design Council, 2010; Holmes-Siedle, 1996: 4).

Disability
Persons who are not able to partake in normal community life as an equal to other members of society, due to environmental and social (attitudinal) barriers. Disabled people have a range of impairments; some are even temporary (Lefebvre, 1991:196; Priestley, 2006:21).

Universal design
"A social movement primarily concerned with making products, environments and communication systems usable to the greatest extent possible by the widest spectrum of users" (Imrie & Hall, 2001:14). It aims to include the needs of most disabilities, to make access for all possible without assistance (Imrie & Hall 2001:15; Adaptive Environments, 2010).

Inclusive design
The focus lies on the inclusion of disabled people's design needs to allow them access to environments and usable products, regardless of their "...age, physique and range of ability" (Imrie & Hall 2001:2). The main focus is on independently usable products and objects; free and independent navigation.

Inclusion / inclusivity
Refers to the inclusive design paradigm shift where society has to adapt to facilitate people that have impairments or disabilities; the emphasis moves away from the differentness of the impaired person (Adaptive Environments, 2010).

Environmental accessibility
Accessibility to the built environment and communication. It is the adaption of cities, buildings, roads and paths to allow a many persons to use them, as well as the use of technological advances to assist them (Adaptive Environments, 2010).

Social / Attitudinal Barrier
Many people in society avoid contact or act in a pejorative manner towards people with impairments. These acts are the social barriers that disabled people experience (Design Council, 2010). These barriers often exist due to emphasis on their impairments.

1.13 Outline of study

The structure of this document is based on the process of investigation that has been followed. The theoretical investigation is positioned in the beginning and is accompanied by the empirical investigation to serve as the foundation of the study. It is followed by the site and context and precedent studies combined with the theoretical investigation form the design generators. Finally, this is followed by the technical resolution.

Chapter 1 Introduction

Chapter 2 Theoretical investigation

Chapter 3 Access Audit (Empirical investigation)

Chapter 4 Context (Framework and Site)

Chapter 5 Precedent studies

Chapter 6 Design approach (Conceptual approach)

Chapter 7 Design

Chapter 8 Technical investigation

Chapter 9 Conclusion

theory

theoretical investigation of inclusive design and accessibility

2

theory

"...people who are physically disabled, people with sensory disabilities: both hearing and sight, people with learning disabilities, people with mental illnesses, elderly people, young children, people with heavy luggage, people with dexterity problems, people with neurological problems, women who are very pregnant, people who are distracted or concentrating on something else."

(Osman & Gibberd, 2000: 25)

2.1 Introduction

The need for inclusive design as the design generator for public architecture needs to be contextualised within the theoretical realm. In order to fully comprehend what accessibility and inclusive design means within architecture, a thorough understanding of it is necessary. This chapter aims to explain the existing literature on inclusive design and related topics. It will explain the background of the problem and the prevalence of it in the South African context. The last section will explain the influence of the investigation on the design approach and the concept of **unified design** as introduced by the author.

2.2 Inclusive Design in Pretoria

Statistical data estimates that 5 to 12% of all South African citizens are moderately to severely disabled (De Villiers, 1997: i). The amount of people with disabilities in Pretoria is 20 456 people, out of a total of 525 385 people, which translates to 4% of the population of Pretoria (StatsSA, 2011). The study area of Pretoria CBD has 792 people with disabilities out of a total of 24 758 people living in the CBD (ibid). See appendix 1.

It is important to state that disability refers to a wide range of disabilities and does not only refer to persons with physical disabilities that are confined to a wheelchair (De Villiers, 1997: 1, Imrie, 1996: 1).
The South African White Paper on an Integrated National Disability Strategy (De Villiers, 1997: 2) state the main reasons for the exclusion of persons with disabilities, are the following:

- Inequalities as a result of the apartheid system
- The social attitudes of society towards a (stereotyped) disabled person
- An unspecific legislative system

"The prevalence of disability increases drastically with the onset of old age" (De Villiers, 1997: 6). Age brings impairments which range over types of disabilities that exist. In terms of the ageing community there are 37 024 people living in Pretoria that are over the age of 65; which translates to 7% of the total population of Pretoria (StatsSA, 2011). See appendix 1.

2.3 Who are people with disabilities?

The common misnomer is that all disabled people are in wheelchairs. Statistically the largest group of disabled persons are those with mobility disabilities (walking aids, walkers and crutches), followed by hearing and visual disabilities. The result is that disability in the built environment is not at all a homogenous group. The elderly and in some cases persons with HIV can be seen as equally disabled (StatsSA, 2011). Refer to table 2.1 for a summary and comparison of disabilities in the five categories identified.

2.4 Models of disability

2.4.1 Medical Model

The medical model of disability is the historical way of thinking about disabilities. This model suggests that disabled persons are ill and different from what society had defined as 'normal' (De Villiers, 1997: v). The grounds for the failing of this model are the lack of consideration of the social needs of persons with disabilities. This mentality gave way to many pejorative attitudes towards persons with disabilities and their families. Generally these persons were institutionalised where they could be cared for by 'normal' persons (Holmes-Siedle, 1996: 5). The foundation of the medical model is that those with disabilities need to be feared, as they have some form of illness (ibid).

The main consequence of the medical model is that disabled persons are cut off from society. It is a denial of basic rights like political power, education, employment possibilities and shared interest activities. See illustration 2.1.

2.4.2 Social Model

The social model of disability is the current way of thinking about disabilities. This model dates from the early 1980's when various disability movements worked together to change the 'issue of disability' to an issue of human rights. This model's premise is that disabled persons are not ill and that they need not change, but that it is society that needs to adjust (De Villiers, 1997: v; Heap, Lorenzo & Thomas, 2009: 861). The social model not only advocates that disabled persons have the same rights as the rest of society, but also that it encompasses a lot more than just a societal change, including social, cultural and political rights.

The consequence of the social model is a need for a large adaptation of the existing built environment and a big change in new developments; one that allows all persons to enjoy equal opportunities. This change has already led to many deinstitutionalisations, and the resultant community integration being more successful in caring or allowing for disabled persons (Schwarz & Brent, 1999: 6).
The significance of this model is the acknowledgement of the capabilities of disabled persons (De Villiers, 1997: 9). See illustration 2.1

2.5 The rise of Inclusive Environments

2.5.1 Barrier-free environment

Barrier-free is a concept that arose in the 1950's in European countries, Japan and the United States. Its core principle is the removal of barriers from the built environment (Fischer & Meuser, 2009: 11; Holmes-Siedle, 1996: 1). The rise of the barrier-free design paradigm arose after World War II, when many casualties from the war, were in need of specialised facilities for working and living (ibid). The term physically disabled was also first used during this period.

Even though specifically addressing the barriers in the built environment, the barrier-free concept was still separating in nature; it still had a 'special needs' approach. The focus was simply on the provision of equal opportunity for disabled persons to enjoy themselves in the same way non-disabled persons would (De Villiers, 1996: 30).

Architects and designers had to assume that "...he is designing for an 'unknown person'" (Fischer & Meuser, 2009: 16). The result was a more conscious approach to designing for disabilities. The barrier-free concept does however make no mention of the removal of attitudinal barriers in society and focussed mainly on people with mobility disabilities. See illustration 2.1

2.5.2 Universal Design

The term universal design was first used by architect Ron Mace in the United States of America. Ron Mace had polio as a child, leaving him wheelchair bound. He stated the purpose of universal design as the reduction of both the physical and attitudinal barriers that disabled persons experience. The result of universal design then, is an increased user group and a more integrated society (Imrie & Hall, 2001: 14).

A component to universal design is 'life-span design'. Life-span design refers to the design of environments that allow the occupant to stay within the architecture through various stages of his or her life (Adaptive environments, 2010).

A second component to universal design is based on human-centred design, design that has all persons and all things in consideration (Imrie & Hall, 2001: 17). According to Adaptive Environments (2010) there are seven principles that define what universal design is; the principles are the following:

- Equitable use
- Flexibility
- Intuitive use
- Tolerance for error
- Low (physical) effort
- Size and space in terms of approach
- Access to information

2.5.3 Inclusive Design

"It does not look for the lowest common denominator, nor does it attempt to reconcile the often conflicting needs of every possible minority group in society. Rather, by considering many varieties of special needs inclusive design tries to break down unnecessary barriers and exclusiveness." (Imrie & Hall, 2001: 18).

"There was a denial of disabled people's individuality and vitality" (Imrie & Hall, 2001: 28) and this was the reason for the development of the movements that were pro disabled persons' rights. This is key to the understanding of the aim of inclusive design. The aim of inclusive design is to include as many impairments and disabilities in the design process; specifically taking into consideration the individual needs of a wide variety of impairments, and how each impairment can be accommodated for. Diversity is, from the outset, the main focus (Folette Story, 2001: 10.15).

The core of inclusivity is then the change from an 'individual change' to 'societal change', it is a shift away from the specialness of disabled persons. It takes it to a next level whereby the individual assessment of the disabled and impaired person's needs are done and how these can then be accommodated in the built environment and product design (De Villiers, 1997: 79) See illustration 2.1.

2.5.4 Summary

An inclusive environment is an environment that caters for all people. It is the removal of physical (the environment) and social (attitudes) barriers within the built environment. Accessible components cannot be added but need to be an intrinsic part of the design approach.

Most literature on inclusive design is not from local publications. It has to be stressed that the South African context did not take part in the movements mentioned above. However, the South African Constitution has developed in an appropriate manner to include disabled people (South Africa, 1996: [5]).The main reason being equality rather than the three movements discussed above. The Constitution did learn from the results of inclusivity and the social model. See illustration 2.1.

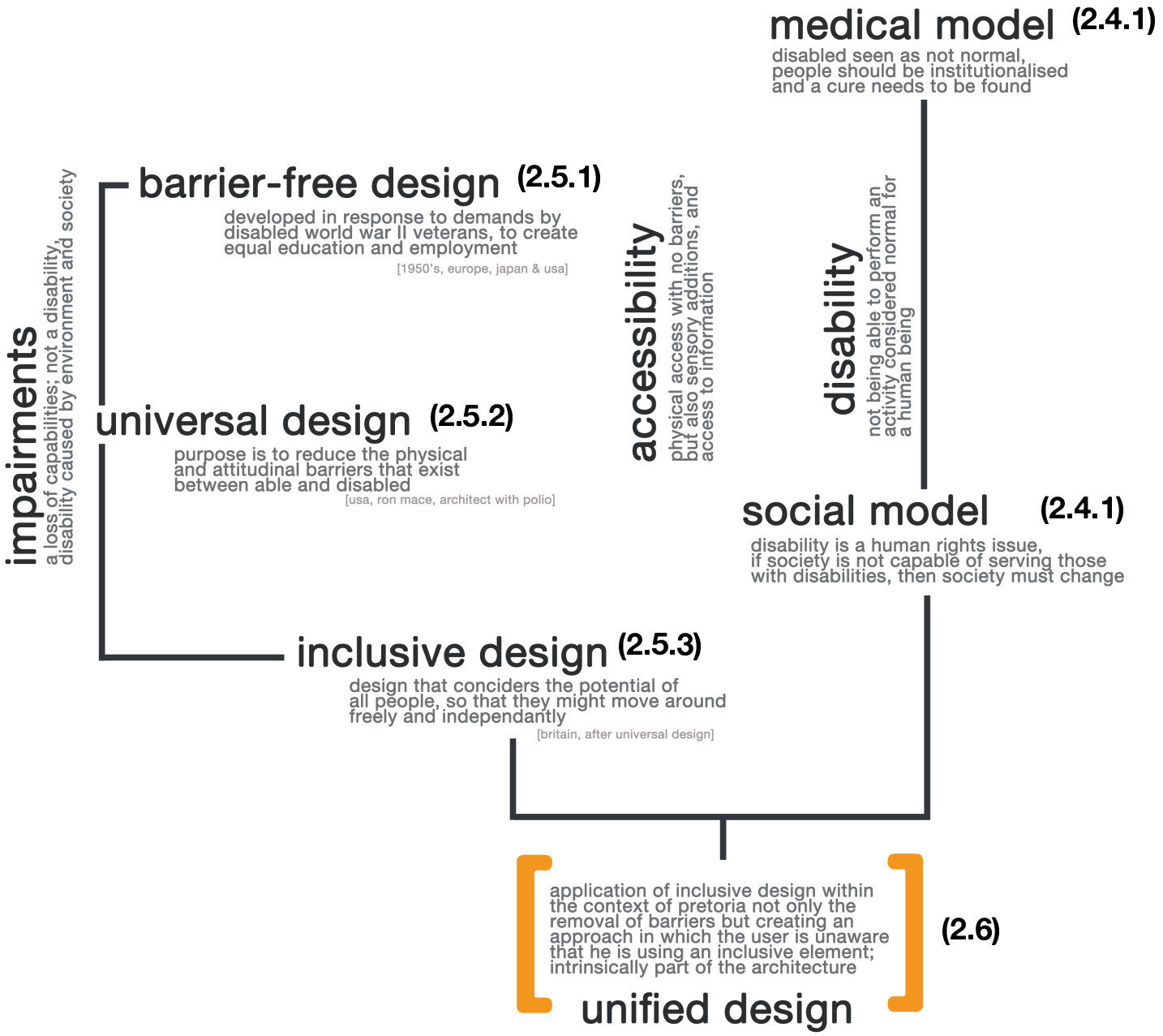
2.5.5 Inclusive Environments in South Africa

South Africa's social context is complex like most other countries (Heap, Lorenzo and Thomas, 2009: 858). Given this complex context, the importance of the constitution is devoted to the improvement of equality in the lives of all South African citizens, including disabled persons (ibid). Many amendments and new legislations were passed after democracy in 1994. Most of them aimed at the groups that had been oppressed prior to democracy; oppressed groups like black people, disabled persons and women (ibid).

Heap, Lorenzo and Thomas (2009: 857) state that the Constitution as it has been established, was written with the aid of the people that had been discriminated against. The shift that we (as South Africans) had to undergo was a shift from the 'I' to the 'we/us'. "South Africa is one of only a handful of countries to have included disability issues within their constitution" (ibid.).

The equality of disabled persons, merely the equal rights to the rights of the rest of the non-disabled persons (Heap, Lorenzo and Thomas, 2009: 858), have significantly impacted the way in which the workplace has treated them. The second place of impact is on the built environment. The impact of this on legislation is also apparent with the passing of Part S of the National Building Regulations (NBR); SANS 10400-S (Karusseit & Gibberd, 2009: 66).

Even though legislation is in place, the inclusivity in South Africa is not at the standard of Europe and the United States of America (Kotze, 2003: 376). Kotze (2003) conducted an access audit on Bloemfontein on a variety of public buildings, and concluded the following; it is clear from the audit that certain everyday factors that are unimportant to the able-bodied individual might spatially transfer people with disabilities (Kotze, 2003: 367). From Kotze's audit and his conclusions it is clear that Bloemfontein's status quo would be much the same in Pretoria and a study would in all probability yield similar results.



illus. 2.1. Diagram indicating the theoretical arguments' structure

2.6 Unified Design

"it appears highly likely that, in the next stage of development, manufacturers in 20 years time will no longer need to designate their products as 'barrier-free', because such a feature will long since have become standard." (Fischer & Meuser, 2009: 20).

The need to change the approach to architectural inclusivity is inevitable (Imrie, 1996: 2). Whether architects can be proactive in realising it remains the challenge. The design approach for the Opportunity Platform is a new approach; an approach that is exclusively inclusive and that results in unified design. Refer to Figure 3.2.

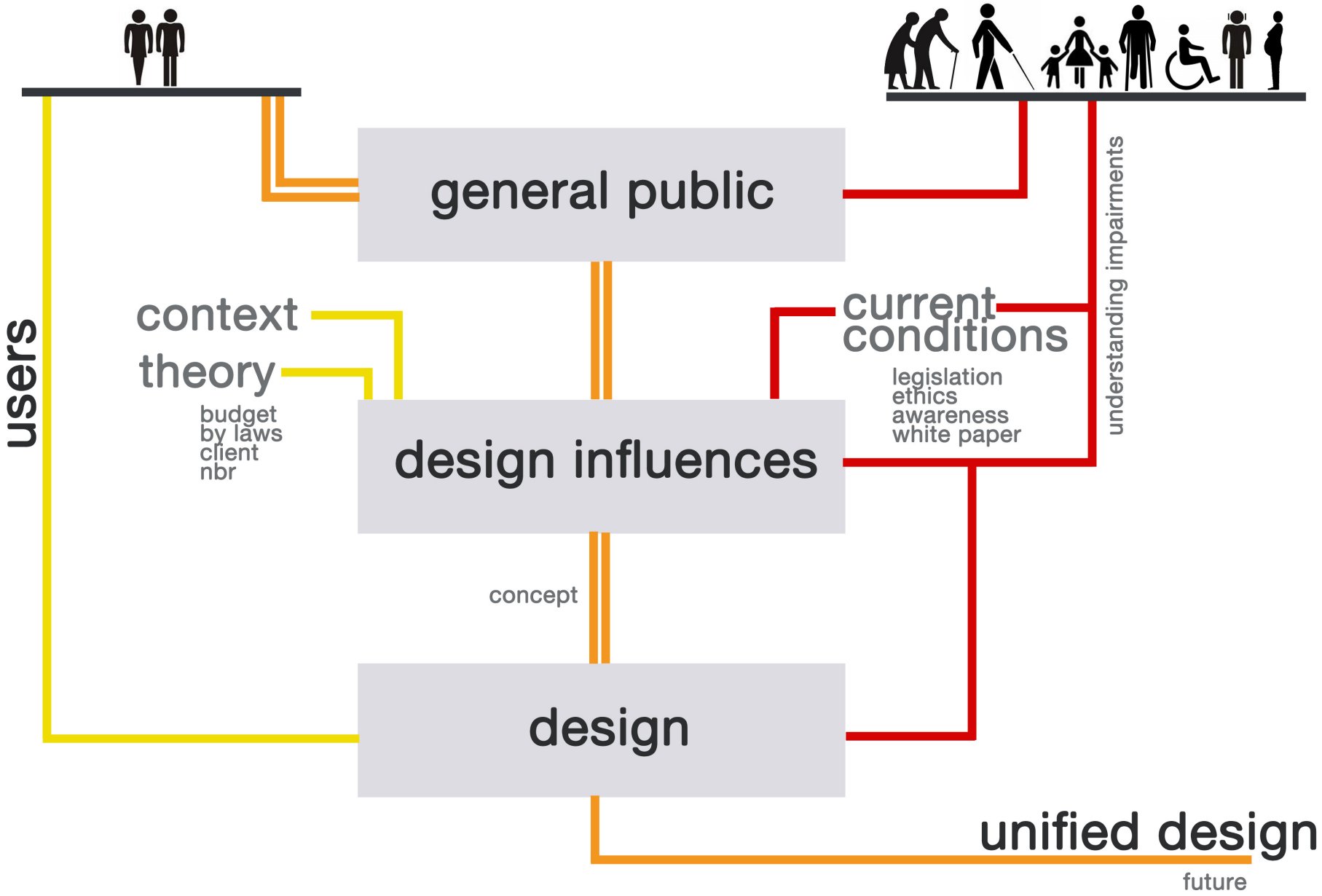
Astronomist Fred Hoyle (Lefebvre, 1991: 13) states that space is a product of energy Lefebvre makes use of this to define what he has called 'social space'. Social space is the product of social interaction, the energy of presence it defines actual space. Though he sees natural space as space, natural space is not social space until it is occupied by energy (Lefebvre, 1991: 30).

The class, and minority, struggles for representation in space, must take mass action and "take over" (Lefebvre, 1991: 56) the space they have been excluded from and change the condition of the social space. The "right to be different" (Lefebvre, 1991: 64) only has value if the difference(s) are based on real previous struggles; struggles of those who were different too, and managed to fight for presence within the social space that they were not allowed to be a part of, without having to change. This is the case with persons who are disabled (by circumstances; permanent or temporary); the fight for access is ongoing.

Lefebvre (1991) equates these struggles to an unification of the "dissociated elements", a removal of the barriers that exist in the presence of the battle. This unification can be applied specifically to the inclusivity of architecture. The way in which designers have in the past (and many still continue to, especially in South Africa) addressed inclusivity is not adequate. It can then be said that the existing codes and legislation are the start of the change, however one must be careful when comparing codes with practice.

Unified design to the built environment is an approach to architecture from the standpoint of equality. It is the way in which space to space transitions are dealt with. This approach aims to make inclusive design such an intrinsic part of the architecture that there is no awareness of it. Though the access is executed so as to include as many impaired people as possible; no exclusive disabled features are added. See illustration 2.1.

The person with the disability receives no 'special attention' due to the fact that he or she does not need it, because unified design is the foundation of the architecture. The proposed process is that of a regressive-progressive (Lefebvre, 1991: 65) manner that can alter approaches to new developments and at the same time adjust the existing neighbouring built fabric to conform to this new standard of unification. "Everyone benefits from an accessible environment to one degree or another."(Ballantyne, 1983: 3).



illus. 2.2. Diagram indicating the conventional approach (double line) and the additional considerations added

	IMPAIRMENTS	BARRIERS	DESIGN AIDS	PROMINENT ASPECTS
BLIND visually impaired	limited field of vision	monotone environments	contrast; floor, ceiling, walls	monotone environments
	short sightedness	inconsistent stairs/ ramps	strategic open plan; noise association	strategic open plan; noise association
	central vision loss	overlit areas	logical layout; easy navigation	logical layout; easy navigation
	cant read small text	lack of legible signage	large font and braille signage	lack of legible signage
	complete loss of vision	intrusive elements, slippery surfaces	railings and navigation tools	railings
WHEEL CHAIR mobility disability	mobility constraints	steap and long ramp lengths	ramped access	ramped access
	not able to navigate steps	stairs and step environments	open plan; wider circulation	stairs and step environments
	not able to use standard w/c	can't reach high up	logical layout; easy navigation	both side railings and landing
	confined to chair position	uneven surfaces and bumps	accessible w/c	accessible w/c
	paralysed body functions	intrusive elements	both side railings and landings	intrusive elements
PREGNANT mother and child	mobility constraints	stairs and step environments	ramped access; low tread stairs	ramped access; low tread stairs
	not able to navigate steps	steap and long ramp lengths	open plan; wider circulation	open plan; wider circulation
	divided attention	complicated layout	logical layout; easy navigation	railings, landings and seating
	gets tired	lack of adequate landings	baby change rooms & feeding	lack of adequate landings
	can't stand for long periods	intrusive elements	railings, landings and seating	intrusive elements
ELDERLY ageing	mobility constraints	stairs and step environments	ramped access; low tread stairs	stairs and step environments
	difficulty in navigating steps	overlit areas	seating and shorter distances	seating and shorter distances
	hard of hearing; loss of sight	complicated layout	logical layout; easy navigation	
	gets tired	lack of adequate landings	contrast planes; legible signage	lack of adequate landings
	can't stand for long periods	intrusive elements, sliipery surface	railings, landings and seating	railings, landings and seating
DEAF hard of hearing	hearing difficulty	noisy areas	compartmentalising of sounds	noisy areas
	communication barriers	getting lost	signage for navigation	signage for navigation
	unable to hear alarms	difficulty in emergency situations	visual communication of emergencies	
	balance problems	uneven surfaces and bumps	hearing aids and awareness under occupants	uneven surfaces and bumps
	sign language difficulties	intrusive elements	railings and landings	railings and landings

COMMON FACTORS MOST IMPORTANT

table 2.1 Assessment of users' needs, most important highlighted and common factors indicated

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access audit

an empirical study on accessibility of existing buildings

3

access audit

A thorough audit will look at more than just physical mobility and disability.

James Holmes-Siedle (1996: 9)

3.1 Introduction

This chapter is an empirical study based on the literature study conducted by the author, resulting in field work; assessing specific library buildings completed since 1994 in Gauteng. The assessment was based on set criteria.

3.2 What is an access audit?

The purpose of an Access Audit is to examine an existing building against predetermined criteria that is geared towards measuring the usability of that building specifically by people with disabilities. Usability refers to the manner in which one can navigate the spaces independently (Holmes-Siedle, 1996: 9).

An Access Audit is based upon more than just mobility disability and also includes an assessment for people with sensory disabilities. This is further explained in the criteria section below. Audits can extend as far as assessing the staff attitudes in the building as well as documentation on equality and disability held by the institution.

According to the National Disability Authority (NDA), Access Audits are "...a useful starting point in assessing the current state of accessibility and usability of existing buildings" (NDA, 2010). The results can then be compiled (and compared) to determine firstly the existing conditions, secondly the way forward and thirdly the knowledge that can be taken from the study to implement in future developments. The document used to do the access audits conducted that are discussed in this chapter, is included as appendix 2.

3.3 The need for an Access Audit

"An access audit is one of the first of many steps that can help to improve accessibility and provides the basis for an access improvement plan or strategy" (NDA, 2010). An access audit will gather data that can be used to compare an existing building with an ideal building for analysis purposes. It can facilitate in the compliance checking with legislation and standards set by inclusive design principles.

An access audit can be used to improve the work environment and could increase employment options and client diversity. The results of an access audit are valuable to the owner and management of the building, and can help with any future changes or additions to the building.

For this dissertation the value of the access audit lies in the observations and conclusions that arise from existing buildings, which can be implemented in the design stages of a new project.

3.4 Criteria used for assessment

Access Audits are performed according to criteria that is predetermined and then taken along on the day of the audit (see appendix 2). The Access Audits conducted for this dissertation were based on the following components of the physical building (NDA, 2010):

- external environment
- vertical circulation
- circulation routes and paths
- facilities
- interior environment
- emergency evacuation
- staff attitudes
- colours, contrast and finishes

The NDA recommends the auditor to keep the following (non physical items) in mind when conducting the audit: (see appendix 2).

- Observations of the users and the staff;
- discussions with users;
- an understanding of the day to day operations of the building;
- an understanding of the maintenance and cleaning routines and the effect these have on the operations within the building.

The structure of the access audits conducted is based upon the National Disability Authority of Dublin guidelines for Access Auditing of the Built Environment (NDA, 2010). The NDA of Dublin is recognised on an international level, and consists of comprehensive methods and structure in which to conduct an access audit.

3.5 Buildings that were audited

The focus of this dissertation's access audits are based on library buildings that were completed after the 1994 democratic elections and therefore should be in line with the Bill of Rights. The buildings assessed were limited to library buildings located in the Gauteng province. The two buildings that were audited were the New Alkantrant Library in Lynnwood, Pretoria and the New Law Library, Constitutional Hill, Johannesburg.

3.6 Audit: Alkantrant Library and Multipurpose Hall, Lynnwood, Pretoria

Audit Date: 10 May 2011.

3.6.1 Project info

Architect: Craig Nel Architects (in association with Studio 3)
Project Title: Alkantrant Library
Building Type: Library & multipurpose hall
Location: Lynnwood, Pretoria
Completion Date: 2009
Climate: moderately dry subtropical
Awards: none

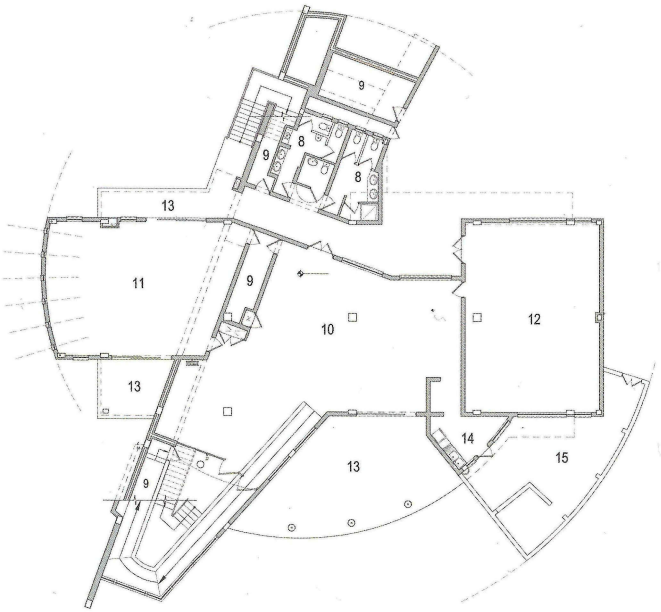
3.6.2 Project description

The new Alkantrant Library in Lynnwood is a result of the redevelopment of the area as business node. This meant that the original Alkantrant library building had to make way for the new development of the Lynnwood Bridge Retail Centre. The new library was constructed just north of the original site and is comparable in size as no new collections were added, with the exception of the multipurpose hall that is used for various programmes and can be rented out.

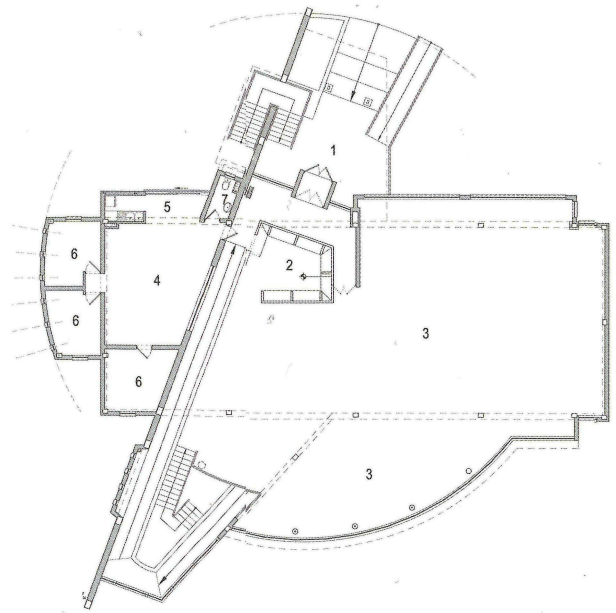
The library was developed by Atterbury Properties but is now owned by the Tshwane Municipality. The library space makes use of views over lawn area towards the spruit, allowing for large amounts of natural light to enter. Also clerestory windows allow for less lighting requirements on the northern side. The design by Craig Nel Architects is made up of two elements; the circle, which houses the main collection and the 'line', which is the main axis through the building (Matthews, 2011: 114-116).Refer to Illus 3.1.

3.6.3 Summary [main findings]

The Alkantrant Library has a ramp that does not conform to inclusive design guidelines. The ramp does not have a handrail on either side and the landing and ramp length and surface finish is problematic. The library's accessible toilet is located on the lower level and this can only be reached by an extended route. No family room is available. The lighting on the main level is adequate and does not have excessive glare.



1 entrance
2 reception
3 main library
4 administration office
5 kitchen
6 general office
7 wc
8 ablutions
9 storerooms
10 internet/cafe
11 activities area
12 listeners library
13 patio
14 wash up area
15 service yard



illus. 3.1. Floor plans of the Alkantrant Library and multipurpose hall (not to scale)

The Listener's Library contributes to access to information for visitors with visual impairments. The entrance door and counter and adjacent circulation widths do not allow for wheelchair circulation. The library staff is willing and able to assist persons with disabilities. The entrance thresholds do not present any tripping hazards. On the lower level the lighting level and quality is problematic.

Signage in the Alkantrant Library is not well executed and the staff members have added printed pages to assist navigation and to demarcate restricted areas. The signage on stacks is carried over from the previous building and is outdated and unclear.

The floor to wall to ceiling contrast is insufficient and results in difficulty in identifying different planes as navigational tools.

3.6.4 Audit

a) Background

This Access Audit is based upon the criteria and understanding of accessibility as set in Chapter 2 of this dissertation.

b) Aims of the study

The purpose of the audit is to assess the accessibility of the new Alkantrant Library building in Lynnwood, Pretoria. The audit examined horizontal and vertical circulation, interior layout and material choices, facilities, communication, evacuation and signage and legibility. (See appendix 2)

The study aims to identify the positive and negative accessibility aspects found in the library.

c) Building type

According to the NDA's guidelines (2010), the aim of this category is to place the building that has been assessed in a rating of accessibility by means of classification. The categories are:

- complete freedom of movement
- controlled entry & freedom movement
- free entry & controlled movement
- controlled entry & controlled movement

The Alkantrant Library falls into the category of free entry and controlled movement. This implies that the access to the building is easily navigated but that the interior spaces (and lower level) are not freely accessible and independent movement is not possible (see appendix 2).

d) Users of the building

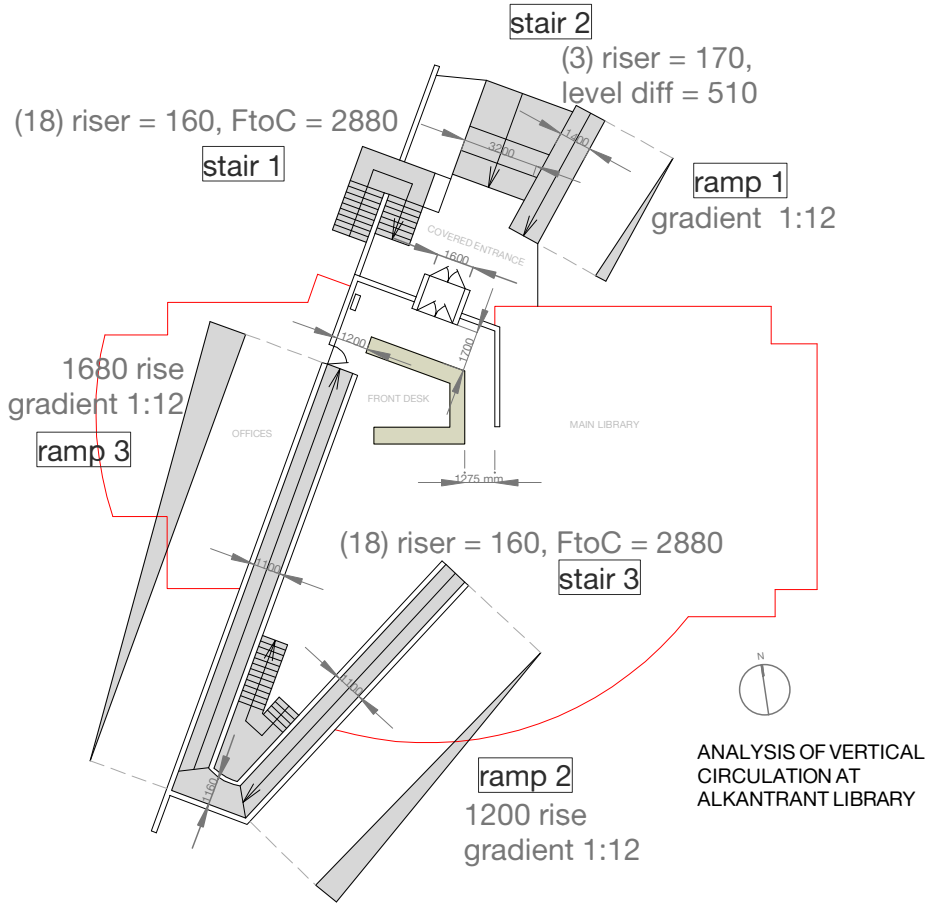
The Library is visited by members of the public and is used daily by the employees. Approximately eight staff members and a diverse spectrum of the public use the library and its auxiliary spaces. The activity normally takes place from 10h00 am until 17h00 pm daily, with the exception of Sundays. The auxiliary spaces and the central location of the library make for a diverse range of users, and it is frequented by many nonresidents of the suburb (de Klerk, 2011 [personal communication]). The library is open to all members of the public. Its close proximity to retirement villages increases the number of elderly persons using the facility. The Library is located within close proximity to one of the CoTMM busses.

An additional component in terms of the programme of the Alkantrant Library is the Listener's Library. The Listener's Library is a collection of audio books, cassettes and other media versions of books. This component of the library attracts many visually impaired people, including elderly persons (Listener's Library, 2011).

e) Documentation of Audit

Vertical Circulation: handrails
Ramps 2 and 3 do not have handrails on either side. The suggested norm is a handrail on both sides. This presents a challenge for the elderly, the visually impaired and wheelchair users alike seeing as the Listeners Library is located downstairs. Ramp 1 has adequate handrails and balustrades. Stair 1 has good handrail placement and stairs are in nonslip tiles. Stair 3 has an interrupted handrail and sharp corner detail. Stair 2 is only three steps and does not present any challenges. See Illus. 3.2.

Ramps: gradient
Ramps 1, 2 and 3 have a gradient of 1:12 which is the minimum requirement by law. Ramp 3 is a very long distance and rises 1600mm which then needs a landing. At the top end of ramp 3 an opening with a door is in immediate proximity of the end of this ramp. By law and suggested practice it must be placed at least 1200mm away from the end of the ramp. See Illus. 3.2.

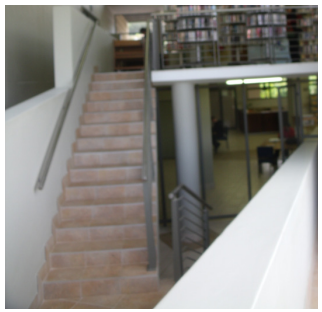


illus. 3.2. Ramp, staircase and steps analysis of the Alkantrant Library

Signage
Signage is generally adequate but is lacking in certain areas. Staff have resorted to A4 printed pages as a quick solution to this problem. No community pin-up board is provided and all notices and advertisements are stuck to the main door which creates a visual barrier when entering the library. See Illus. 3.3c.


illus. 3.3a Alkantrant Library Ramp 3


illus. 3.3b Alkantrant Library Ramp 1, stair 1


illus. 3.3c Alkantrant Library Stair 3

Lighting
Natural and artificial lighting is adequate and the glass facade is well used for this.


illus. 3.4a Alkantrant Library natural lighting

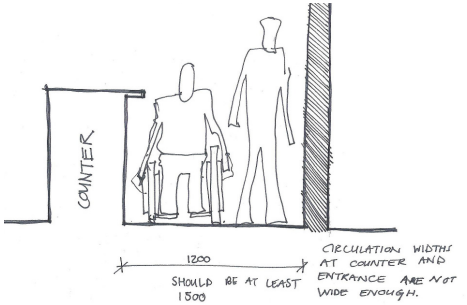

illus. 3.4b Alkantrant Library artificial lighting

illus. 3.4c Alkantrant emergency signage

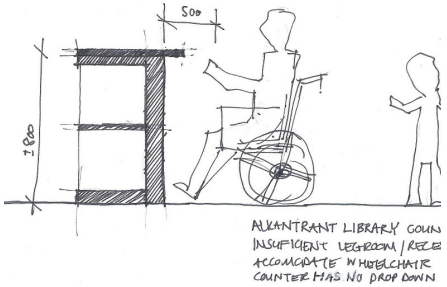
Counter and circulation
Counter design does not allow for easy use by children or wheelchair users. Combined with the narrow space this creates a space that is difficult to navigate. Circulation space at the main entrance and main desk is only 1200mm on the eastern side; this does not allow enough movement space for two persons as indicated in illustration 3.5b.

The top end of ramp 3 has only 1200mm circulation space which is inadequate for the turning circle of both a pram and a wheelchair, which are the intended users for the ramp, other than the library trolleys.

Entrance
Entrance level change is adequate for wheelchair users, the elderly and visual impaired persons as it presents no trip hazard. The swing doors are not optimal, but are easily operable with good handles. See Illus. 3.5a.



illus. 3.5a Alkantrant circulation width



illus. 3.5b Alkantrant counter height

f) Conclusion

The Alkantrant Library is not inclusive and does not allow for independent use of its spaces.

- Disabled parking is within close proximity to the entrance and the entrance ramp and stairs are easily navigated.
- Lighting in the main level is adequate.
- Staff are willing to assist and approachable
- The layout of the library is for the larger part logical but placing the toilets on the lower level is questionable.
- The library has insufficient contrast making navigation for visually impaired difficult, despite the existence of the Listener's Library.
- The signage is lacking, but where present it is adequate.
- The main counter is not designed for children and wheelchair users to comfortably borrow or return a book.
- Circulation widths are problematic in areas where gathering of people is expected.
- The ramp extending to the lower level does not allow access for the elderly and wheelchairs as intended.

3.7 Audit: Constitutional Court Law Library of South Africa, Constitution Hill, Johannesburg

Audit Date: 30 June 2011.

3.7.1 Project info

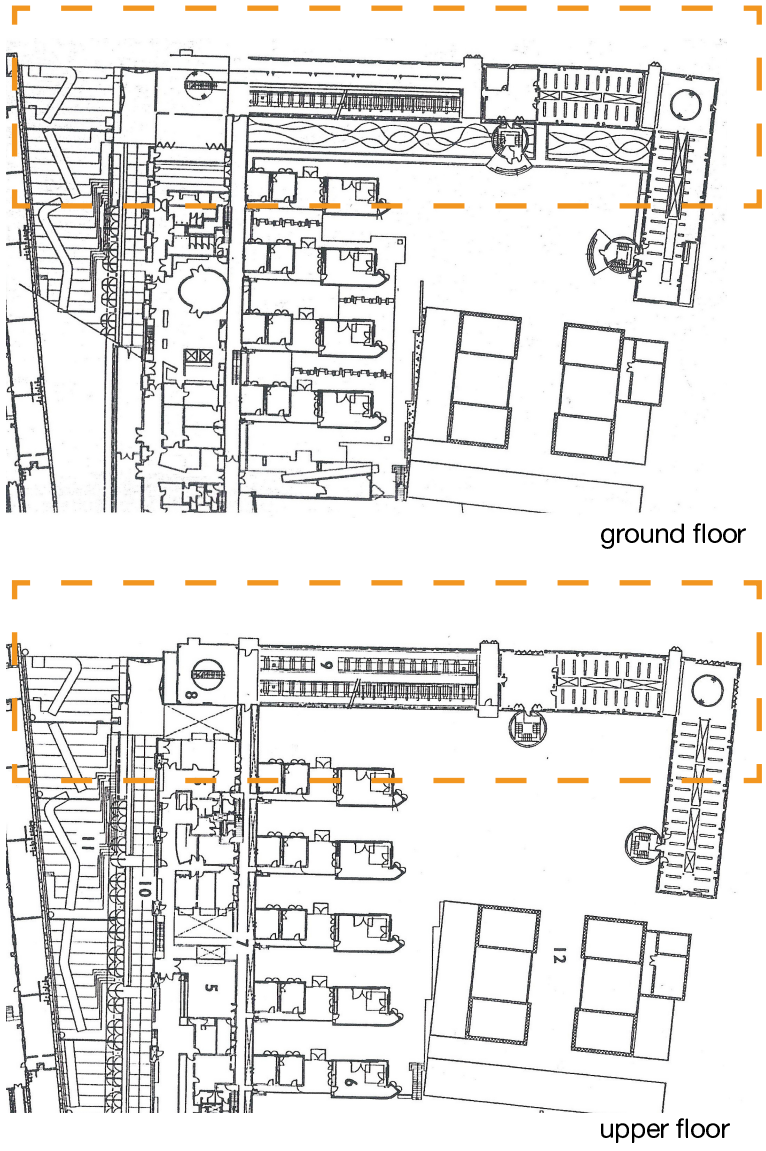
Architect: OMM Design Workshop and Urban Solutions Architects
Project Title: The Law Library of South Africa
Building Type: Library
Location: Constitutional Hill, Johannesburg
Completion Date: 2004
Climate: moderately dry subtropical
Awards: GIA Award of Merit 2005, SAIA award for Excellence 2006

3.7.2 Project description

The Constitutional Court complex is one of the architectural manifestations of democracy in South Africa. The whole building is supposed to represent the human rights of the democracy. The Law Library was opened in 2005 after the opening of the Constitutional Court in 2004 (Joubert, 2009: 116).

The library can be seen as a wing of the main building and it forms a long narrow structure on the opposite side of the court chambers. See illustration. 3.6. The library houses 40 000 volumes at its present state, and the design allows for the collection to expand to 400 000 volumes (Constitutional Court, 2011). It also houses access to Internet and electronic resources, especially of international origin (ibid.). The public reading room is one of the main gathering spaces in the library and is (with prior arrangement) open to the public.

The design of the library consists of a grouping of ramps with shelves along the ramps. The stacks have adjustable feet to accommodate the angle of the ramp. The library houses study spaces, lounge type reading spaces and views over the neighbourhood and internal courtyard. The interior is comprised of meranti timber and concrete with ample glass to allow shaded natural light to enter (Joubert, 2009: 116). The alternate means of vertical circulation is a timber and steel staircase from the foyer, situated in a circular cut in the floor slabs. See Illus 3.7c.



illus. 3.6 Floor plans of the Constitutional Court with Law Library indicated (not to scale)

3.7.3 Summary [main findings]

Access to the Constitutional court complex is accessible and circulation routes and entrances are adequate. Special care has been taken in the inclusion of lifts for wheelchair users where ramps were not an option. Access to the library itself is level with the surface of the gallery foyer space that connects to the court complex. The counter does not allow for easy access by wheelchair users.
Natural lighting results in glare on timber surfaces in upper levels due to the gloss finish used. The timber and steel staircase has adequate handrail and balustrade detailing, but the open risers will be problematic for some users.
Book stacks are higher than 1500mm, which means top shelves must be accessed by assistance. Stack signage is adequate and category signage is legible.

3.7.4 Audit

a) Background

This Access Audit is based upon the criteria and understanding accessibility as set in Chapter 2 of this dissertation.

b) Aims of the study

The purpose of the audit is to assess the accessibility of the Law Library of South Africa in Constitutional Hill, Johannesburg. The audit examined horizontal and vertical circulation, interior layout and material choices, facilities, communication, evacuation and signage and legibility. (See appendix 2)
The study aims to identify the positive and negative accessibility aspects found in the library.

c) Building type

According to the NDA's guidelines (2010), the aim of this category is to place the building that has been assessed in a rating of accessibility by means of classification.

The categories are:

- complete freedom of movement
- controlled entry & freedom movement
- free entry & controlled movement
- controlled entry & controlled movement

The Law Library of South Africa falls into the category of free entry and controlled movement. This implies that the access to the building is easily navigated but that the interior spaces (and upper levels) are not freely accessible and independent movement is not possible (see appendix 2).

d) Users of the building

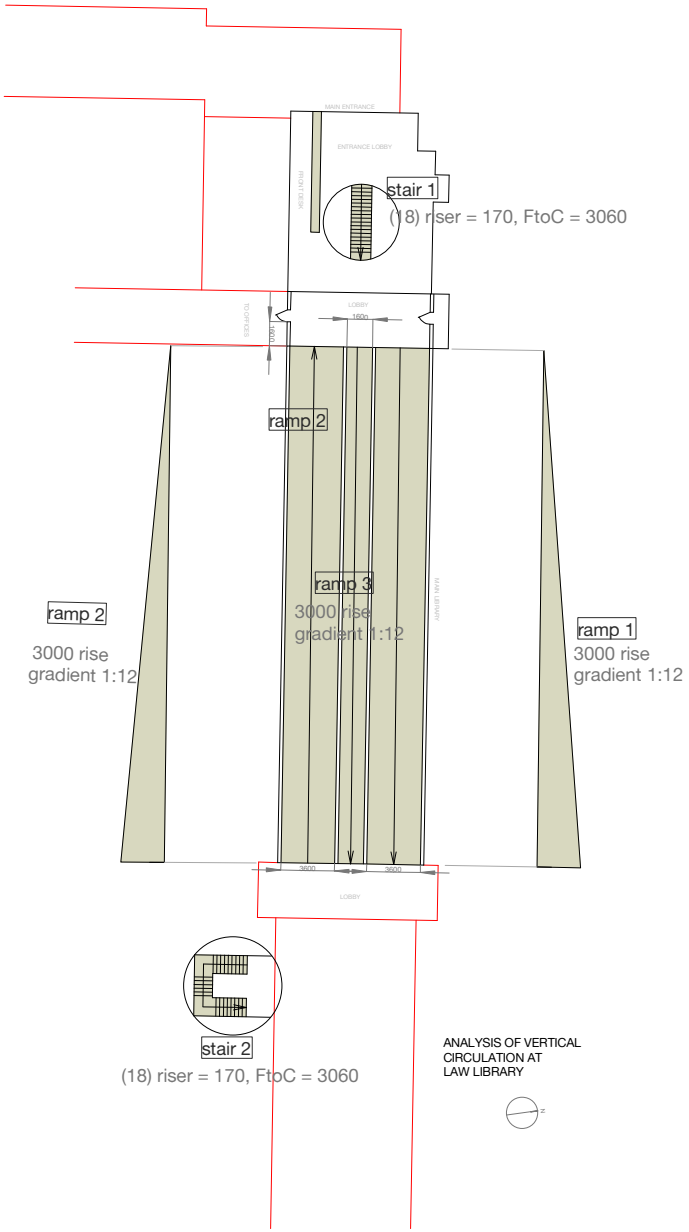
Though seen as a public law library, the library at Constitutional Hill is not open to all members of the public. Access is limited to law related professions "...for research by other courts, independent state institutions, legal academics, practising lawyers and other constitutional law researchers" (Constitutional Court, 2010) and students in this field for reference purposes.

Public access is limited to tour groups, special arrangements and open days. Theoretically the complex is open to the entire public as a tangible manifestation of the constitution. Users fall within all age groups and include a wide range of foreign visitors. The complex makes provision for private parking, bus and taxi stops and is in close proximity to the Gautrain Station.


illus. 3.7a Law Library Ramp 1


illus. 3.7b Law Library Ramp


illus. 3.7c Law Library Stair



illus. 3.8 Law Library ramp and stair analysis

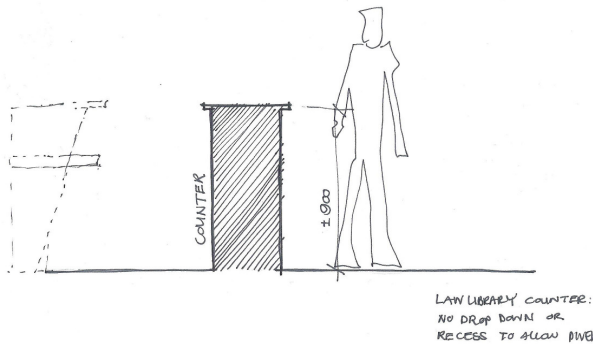
e) Documentation of the Audit

Lighting
Hanging light fitting and desk lamps provide adequate overall lighting and task lighting. Natural light is utilised, but is unfiltered form the inner court yard and presents a glare problem on the glossy finish timber flooring. See illustration 3.10c.

Ramps and staircases
The Law Library floors consist of three ramps with 1:12 gradients. Ramp 1 and ramp 3 are the same width and have book stacks at regular intervals. The ramp length is 36 000mm and rises 3000mm to the next landing (illus. 3.8). This distance of ramp is uninterrupted and has no landings. Ramp 1 and 3 have a handrail on the one side against the facade. Ramp 2 is the same gradient but has no bookstacks and has handrails on both sides. The floor material on the ramp is nonslip.

Stair 2 has two landings and handrails on both sides with closed risers. Stair 2 has open risers and no landing and continues up 18 stairs to the next level and presents difficulty for some people.

Counter and circulation
The Law Library's counter is 900mm high and has no recessed vertical panel or a drop down section. The counter is problematic even for shorter people. Circulation around the entrance and counter is ample, because no passage like space exists. See illus. 3.9a. The foyer is freely movable and the floor surface is covered in one material (Law-Viljoen, 2008: 29).
The main entrance is on the same level as the internal courtyard from which you enter.



illus. 3.9a Law Library counter

illus. 3.9b Law Library counter

illus. 3.10a Law Library entrance signage


illus. 3.10b Law Library emergency signage


illus. 3.10c Law Library glare problem on floor

Signage
Signage is of legible type face and adequate. Standard pictogram style signage is used elsewhere. See illus. 3.10a and 3.10b.

f) Conclusion

The Law Library of South Africa is not inclusive and does not allow for independent use of its spaces.

- Natural lighting utilised during day time and artificial lighting provides the additional required lighting.
- Entrance level form gallery space, the library foyer and reception is on one level with good flooring contrast and spatial changes identifiable.
- Main entrance signage is small, but clear and typeface is legible.
- Standard signage pictograms are used for fire exits, fire houses and extinguisher points.
- Stack numbering is printed A4 identification and is legible.
- Circulation widths on average measure to acceptable distances and would allow a person in a wheelchair to pass a walking person and be turn around. Circulation in between stacks is limited, but stacks are grouped in maximums of three, thus turning around is not necessary.
- Entry to the library is on level surface.
- Circulation within the library is of adequate width and is logical in layout.
- Floor to wall contrasts are adequate.

- Gloss finish varnished timber flooring has high glare factor in daytime with natural lighting.
- Counter is at a higher level and does not allow wheelchair bound users to properly reach and interact over the counter.
- Ramps for circulation are only equipped with handrails on both sides, but ramps with stacks have handrails on one side only.
- The area with stacks on ramps does not have any landings, and the gradient is not near 1:25 so it cannot be considered flat.
- Staff members are not approachable and do not seem to have any training in handling people with disabilities.

3.8 Conclusion

The Access Audits conducted on the Alkantrant and New Law Library yielded similar results; both buildings fall in the category of classification; free entry & controlled movement. This result is mainly due to interior design and layout inadequacies. Secondly, a result of poor colour and material choice. Thirdly, poorly detailed stairs, steps and staircases with inadequate or lacking balustrades and handrails.

The Access Audits have revealed that recent buildings still do not fully comply with legislation and do not meet suggested practice. The critical assessment of these two libraries have yielded expected results. The inclusivity of public buildings remain questionable.

A project like the Alkantrant Library has specifically included a ramp in the design, yet the ramp does not meet the required specifications. The Law Library presents a different situation, ramps are navigational but present difficulty between stacks. Also, stacks are tall and it is near impossible to reach the top shelf, even as a standing short person.

Both the buildings that were audited were freely accessible (entrance), but presented challenges and problem areas once inside. Spaces do not allow for independent movement and present hazards and result in inaccessible building components.

This Empirical Study has confirmed the initial responses of inclusivity and now serve as a reference point on which to build, in order to realise the premise of an inclusive public building.

context

positioning the investigation within the Burger's Park Precinct

4

context

The foundation of design is for us a question of context.

Bouroullec and Bouroullec (2005: 47)

4.1 Introduction

This chapter aims to contextualise the proposed site. To gain an understanding of the programmes, buildings, transport networks, communities, religious institutions, the streets and pavements, parks and other urban public areas, and the people of the Burger's Park precinct.

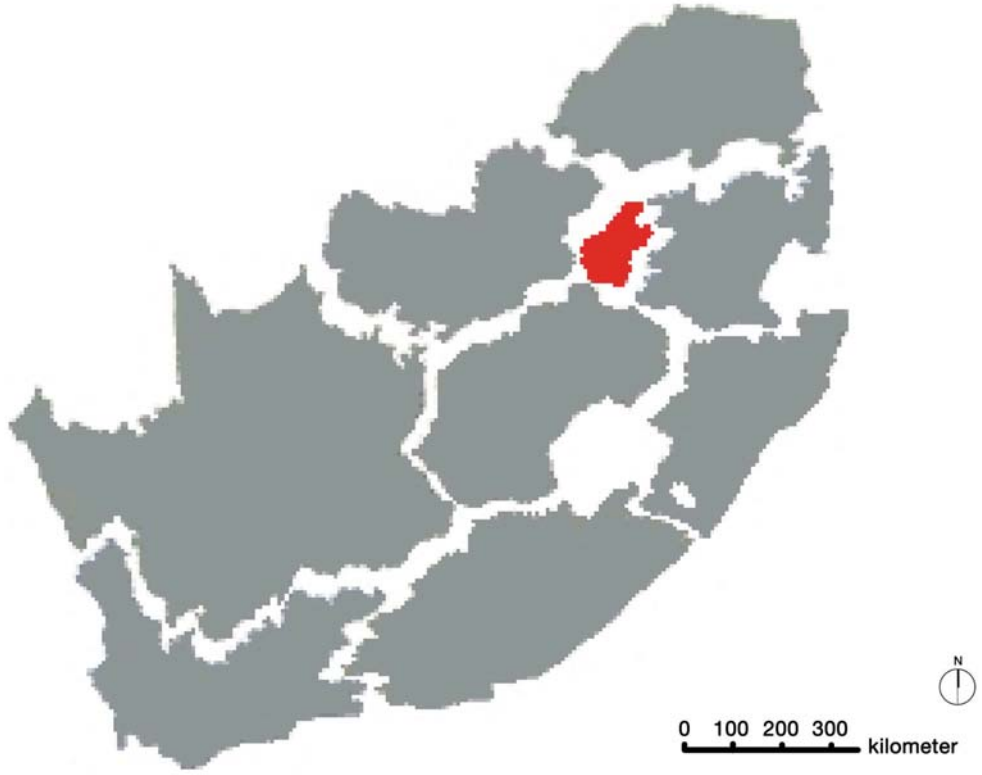
The context is approached on three levels; Macro, Meso and Micro. This chapter also intends to contextualise the Burger's Park precinct, in Pretoria, as well as the City of Tshwane Municipality.

Pretoria for the purpose of this study it refers to the city of Pretoria, including all suburbs. Tshwane refers to the Metropolitan Municipality (City of Tshwane, CoT) that encompasses a greater region, including places like Mamelodi, Centurion, Akasia and Shoshanguve. See illus. 4.2.

4.2 Site location

South Africa, Gauteng Province

Pretoria is situated in the Gauteng Province of South Africa. Although Gauteng is the smallest province in area, it has the highest population per square meter. See illus. 4.1.

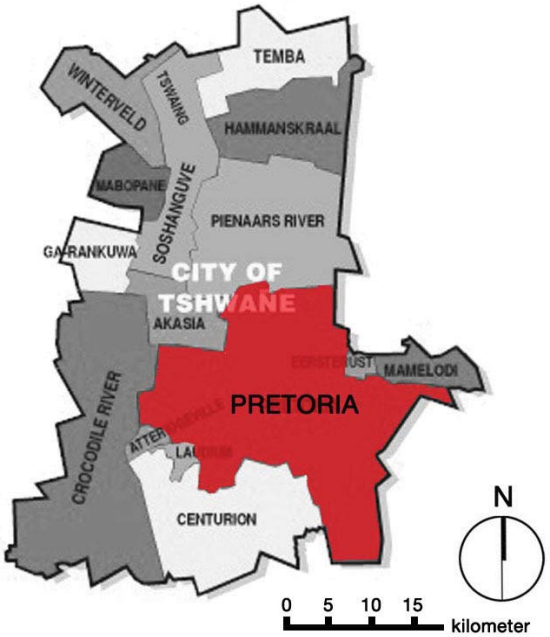


illus. 4.1 Exploded map of South Africa with Gauteng indicated in red

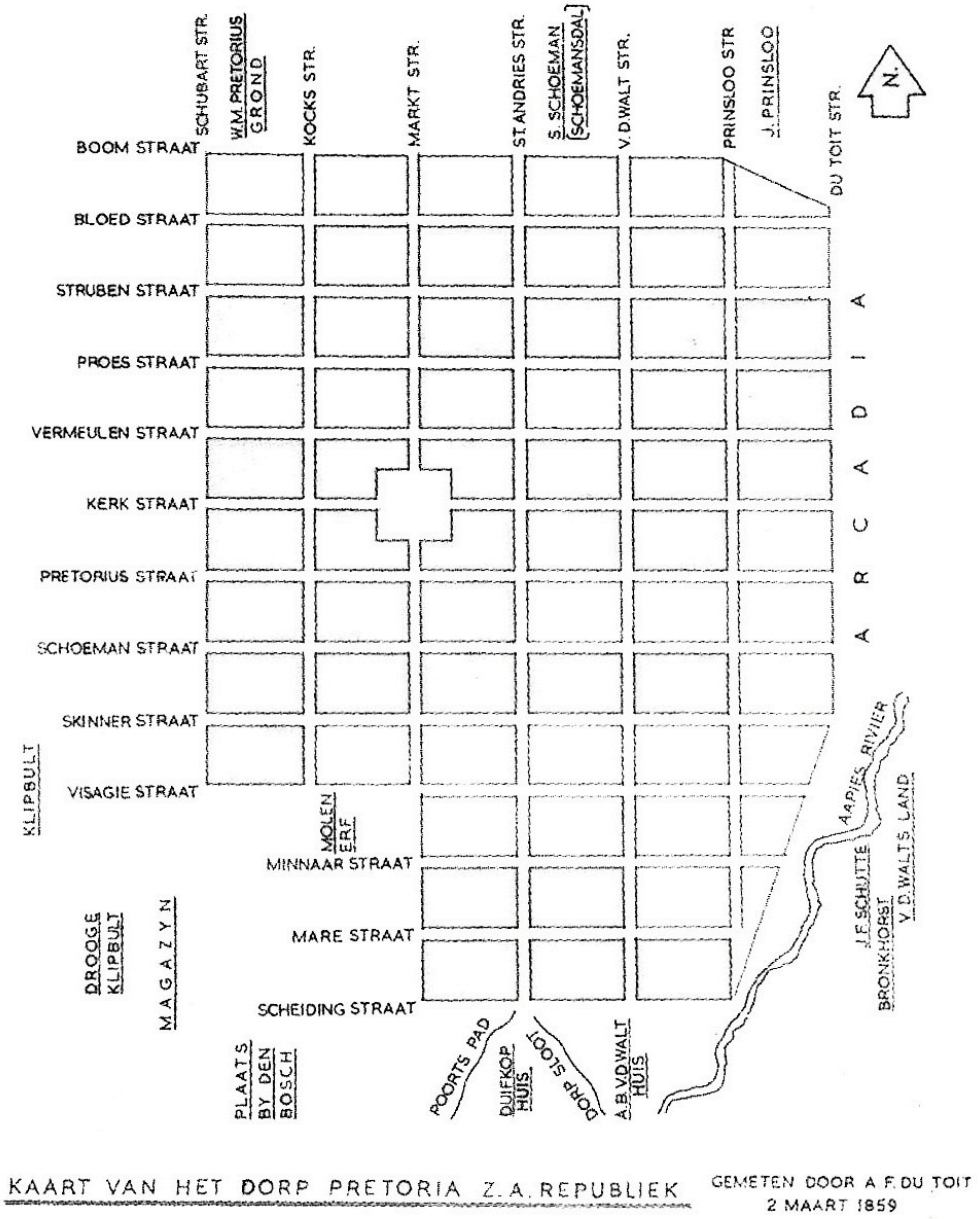
4.3 Macro Scale - Pretoria

4.3.1 Introduction

Pretoria is one of the three capital cities of South Africa (the others are Bloemfontein, the judicial capital city and Cape Town, the legislative capital city), Pretoria being the administrative Capital city. Pretoria was founded in 1855 (Allen, 2007:18) by Marthinus Wessel Pretorius (1819 - 1901), which he named after his father, General Andries Wilhelmus Pretorius (1798 – 1853). Pretorius was chosen as the first President of the Republic of South Africa in 1857 and moved to Potchefstroom. After Pretorius' departure the town was surveyed by Andries du Toit, the then landdrost of the town (see Illus. 2.5). The first map was drawn up after this survey, complete with street names and completed by du Toit in March of 1859 (ibid., 14-16). The area of the Burger's Park Precinct is not yet laid out on this map. It is also the first map to indicate the "Saint" Andries Street naming of Andries Street. The several stands that would later be Burger's Park was vacant for many years before the development of the park as a Botanical Garden commenced. See illus. 4.3.



illus. 4.2 Map of Tshwane Metropolitan Municipality with Pretoria indicated in red



illus. 4.3 Map of old Pretoria town as drawn by du Toit in 1859

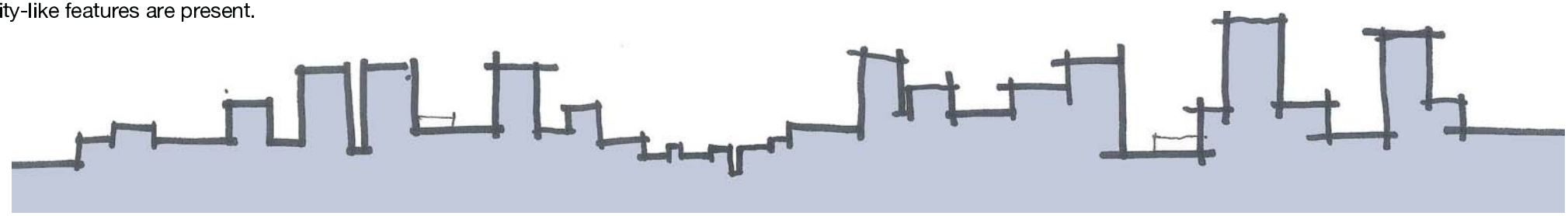
4.3.2 Pretoria the Post-town

The broad-spectrum character of Pretoria is similar to that of a town. Pretoria's developmental roots as a town on the original kerkplaats is still present today. The core of the city is still surrounded by the original buildings dating back to the origin of Pretoria. The height and scale of buildings in Pretoria's skyline is opposite to that of a city. The core of a city should be high rise due to the high value of land, this is not the case in Pretoria. Clear proof that Pretoria developed as a town, and grew into a city. In the case of Pretoria lower heights, with the old Raadsaal and Palace of Justice are positioned around Church Square, form the centre of Pretoria (Picton-Seymor, 1977: 273). Refer to Illustration 4.4.

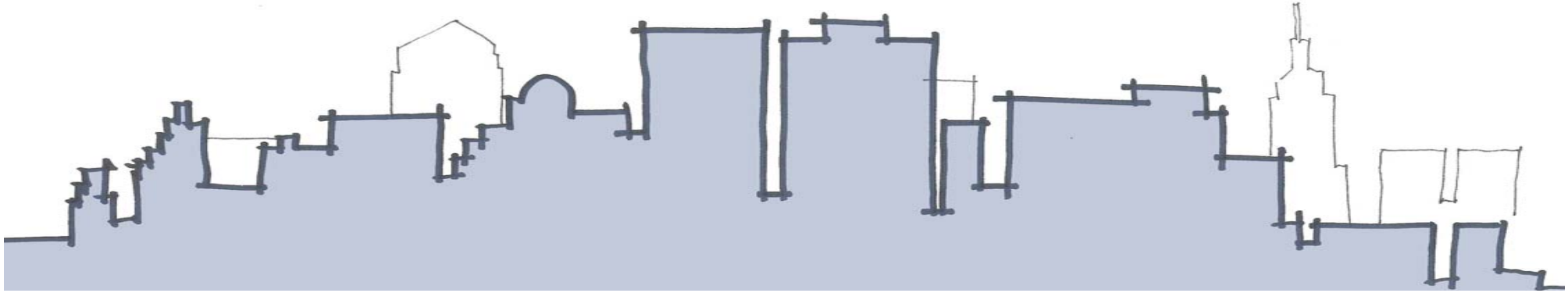
A comparison of the city section of Pretoria against that of a city like New York, which has its origins as a city, yields many differences. A comparison to New York would be relevant as the New York skyline is one of the most published and recognisable skylines in the world. Refer to Illustration 4.5. The city section differs greatly. Although Pretoria is a city, its scale and characteristics are town-like, with city-like features are present.

Pretoria does have high rise buildings, but none of them are situated in the core/ CBD. Therefore it is essential to see Pretoria as a post-town. This occurrence could be used to make future decisions of development. This occurrence is prevalent in many South African post-town cities. Many (historical) city centres have a strong identity; an identity framed by the heritage fabric at its core. These historical cores are mostly low rise buildings. Generally these centres would have been dominated by their town (city) halls; as is the case in Pretoria. These areas require a different, post-town, approach when future development decisions are made (Picton-Seymor, 1977: 273).

The post-town characteristics are a strong feature and identity of Pretoria. The presence of this 'old town' remains has divided the city into different sections of development. For instance, the Church Square area was largely left as it is, and development and redevelopment has occurred around the central core. Also the cardo-decomanus of Pretoria, Paul Kruger and Church Street, further divides the city into quadrants, a binding yet dividing factor. These quadrants have been severed by the Skinner Street redevelopment, and have divided the city on an east-west axis.



illus. 4.4 City section outline of Pretoria through CBD (not to scale)



illus. 4.5 City section outline of New York through CBD (not to scale)

4.3.3 Pretoria the fragmented city

Pretoria has been fragmented; Reasons exist for this fragmented state that it finds itself in. Some of them are:

- Apartheid; separation of people by skin colour and culture
- Natural edges of the city; river, ridges
- Incoherent development strategies; growth to the west was stopped and was promoted towards the east – reason for the east's development, west has been stagnant since the 1970's.
- Drastic interventions, like the widening of Skinner Street in mid 1990's (Personal communication, Muntigh, Ferreira 4 April 2011) which has resulted in a highway-like road that bypasses the actions and activities of the city. Also the implementation of the one-way system in 1991 that was never completed resulting in areas of confusion.

4.4 Meso Scale – Burger's Park Precinct

4.4.1 Introduction

This section precedes the immediate context of the proposed site; and serves as an introduction to the precinct. It discusses reasons for the forming of the precinct -one of the fragments of Pretoria- and the features and strengths within it. It concludes with an identification of the problems and opportunities the precinct is facing.

4.4.2 Precinct identification

The southern precinct (now referred to as Burger's Park precinct) could be described as one of the fragments of Pretoria. The Burger's Park precinct has over the past years grown into a suburb of its own. The area is separate from the main (northern) precinct. The main community functions are now no longer situated within one precinct. Refer to Illustration 4.7. However, the problem with this development is that many community needs are no longer being fulfilled in the Burger's Park precinct.

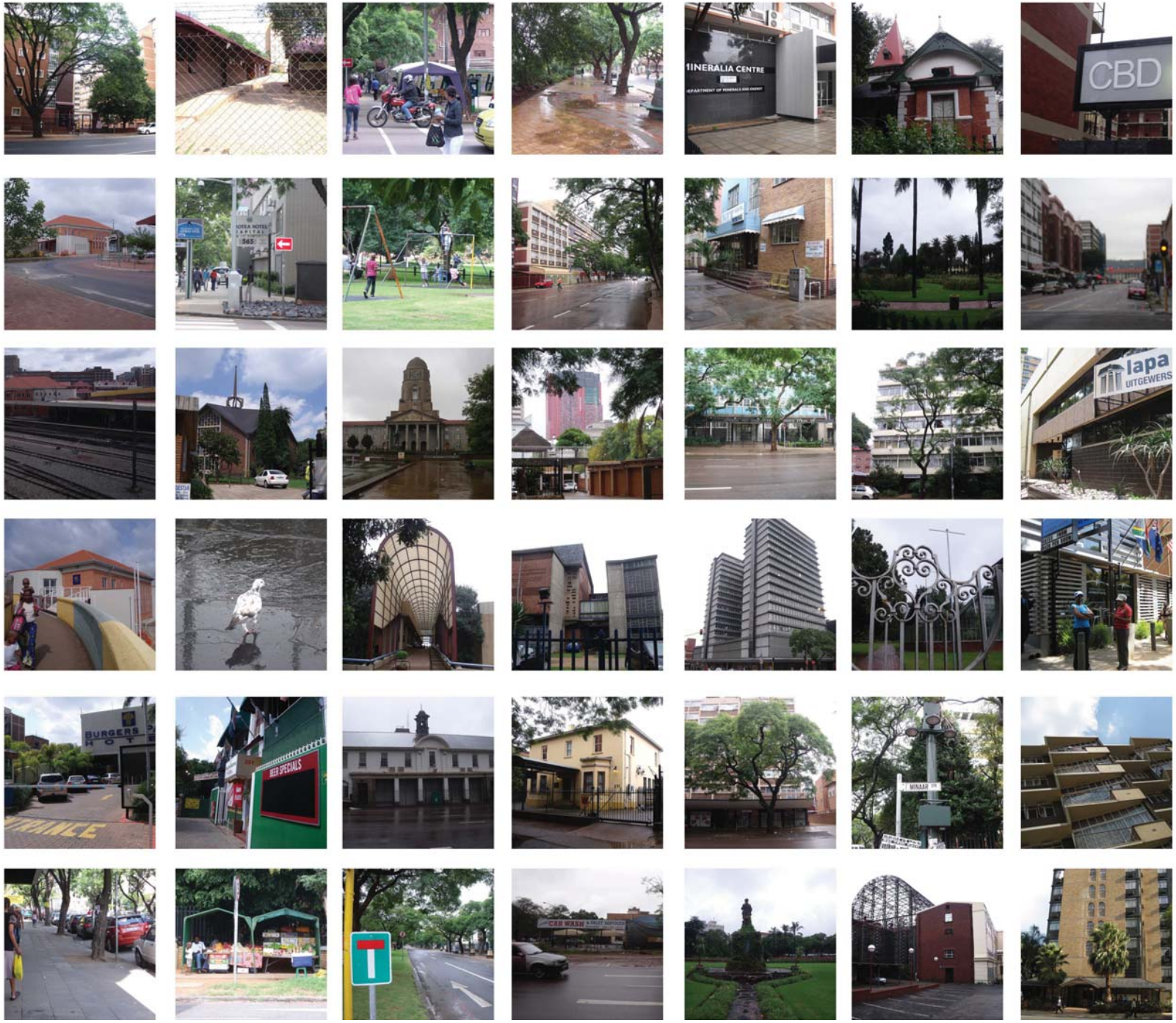
The positive side is the generous public park (le Roux, 1990: 131) that the precinct has got its name from; Burgers Park. Situated on a large plot, it is there for the community's leisure (Andrews & Ploeger, 1989: 18). The Burger's Park Precinct also houses many churches, schools, the museum block, the City Hall, Melrose House, Barton Keep and the Pretoria Metro, Shozaloza Myel and Gautrain Stations.

4.4.3 Theoretical background to urban investigation

The mapping and analysis of the Burger's Park precinct is based on, but does not prescribe to, the principles of Kevin Lynch's principles as set out in Image of the city (Lynch, 1960: 47). The edges, landmarks, nodes, routes and districts form the foundation of the investigation.

4.4.4 Visual Introduction

This visual introduction firstly aims to show the architectural phases, the condition of certain areas and the barriers as well as openings to public areas that exist in the Burger's Park precinct. Secondly, to illustrate some of the activities and users that visits the area. It also includes some images of the streets and sidewalks, surrounding the park to give an indication of the condition of adjacent buildings and edge conditions. See illus. 4.6.



illus. 4.6 Collage. Visual introduction to Burger's Park precinct

Pretoria CBD with the Burger's Park Precinct indicated

4.4.5 Urban Mapping

illus. 4.7 Figure ground drawing of central Pretoria indicating study area: Burger's Park precinct


N

Functions

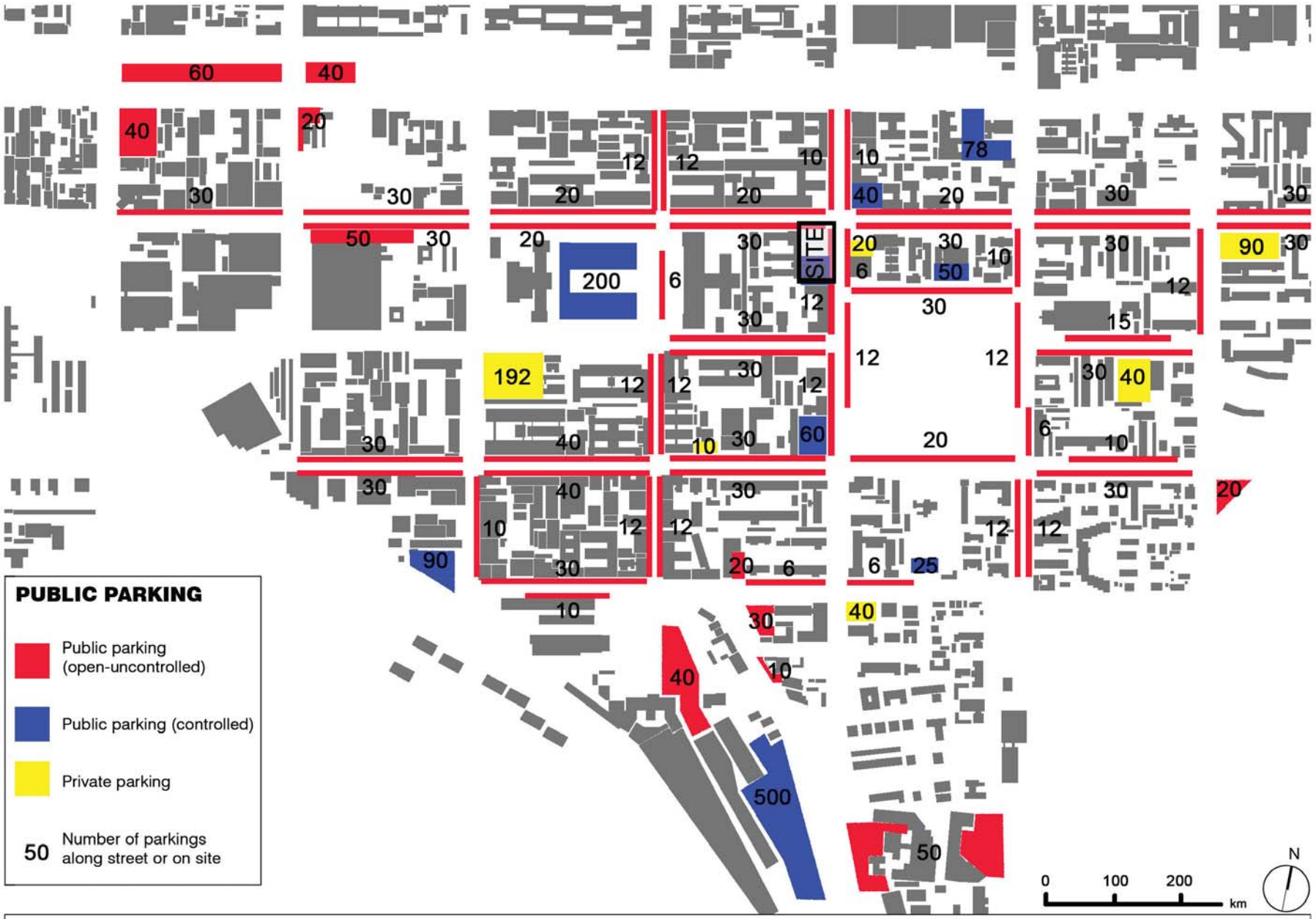
Observation(s)_

Diverse mixed use characteristic per city block within precinct. Lack of community facilities and functions. Existing museum buildings are not functioning optimally.

Proposal_

Introduction of more community orientated functions. Reconsider museum exhibitions and role within precinct. Introduce resources and functions that directly addresses the community needs.

illus. 4.8 Urban Mapping. Building functions (Burger's Park Framework 2011)



Private Parking

Observation(s)_

Currently parking lacking in central part of precinct. If precinct is developed, parking is going to be compromised.

Proposal_

New central development to accomodate parking needsof precinct.

illus. 4.9 Urban Mapping. Parking quantities (Burger's Park Framework 2011)

Pedestrian Activity_Daytime

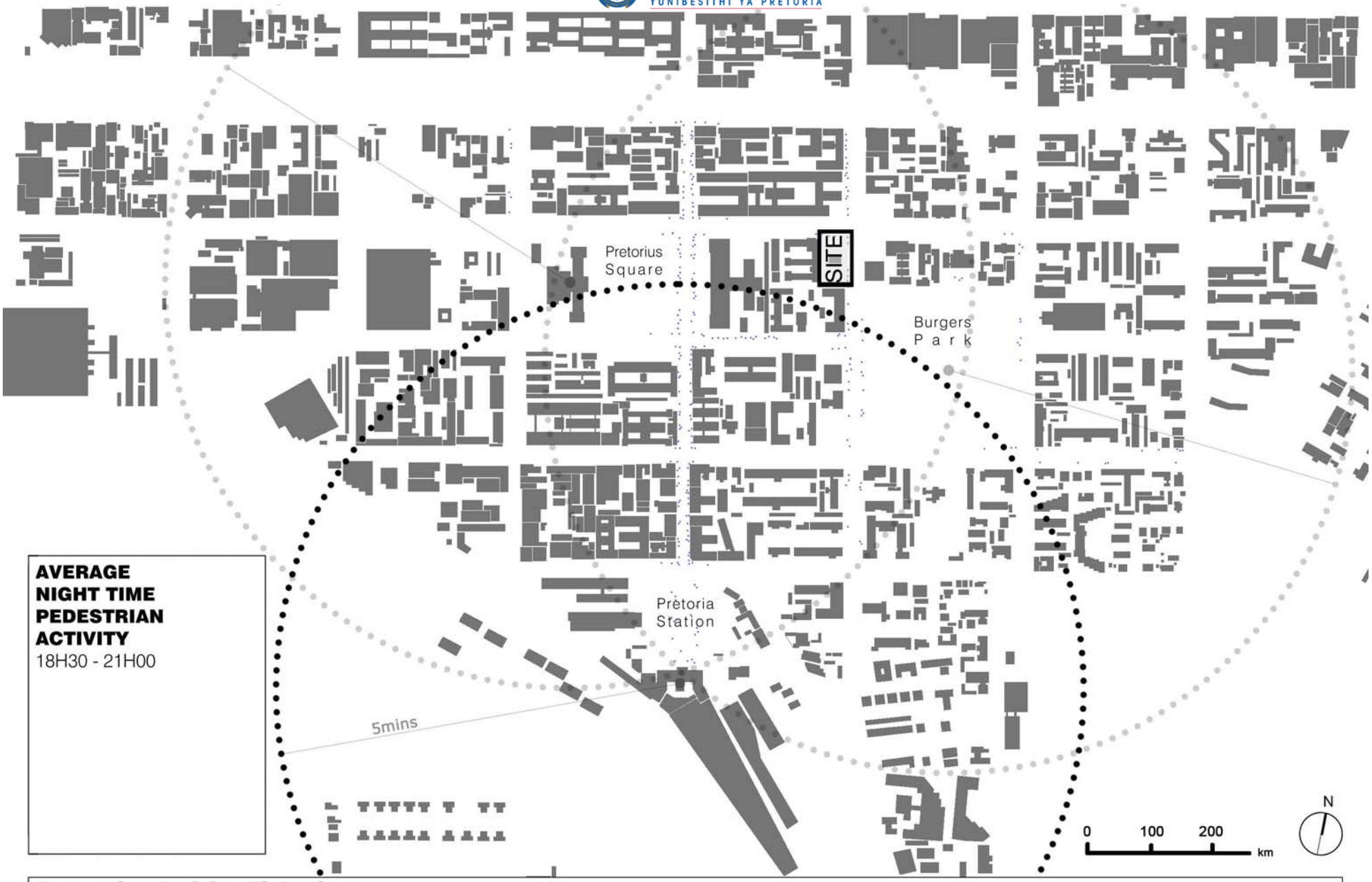
Observation(s)_

Paul kruger street forms main pedestrian thoroughfare through precinct. Bosman and Andries street form secondary routes. Minnaar street is underutilized.

Proposal_

Activate Minaar street as main east-west pedestrian route within precinct, and provide additional sidewalk to 3 pedestrain routes mentioned above.

illus. 4.10 Urban Mapping. Daytime pedestrian activity (Burger's Park Framework 2011)



Pedestrian Activity_Night time

Observation(s)_

Low pedestrian activity due to no '24hour' retaining functions within precinct, presence of prostitutes

Proposal_

Increase pedestrian activity within precinct by introducing and altering functions to include night time and activating functions.

illus. 4.11 Urban Mapping. Night time pedestrian activity (Burger's Park Framework 2011)

Edges + Access

Observation(s)_

Fences instead of buildings articulate edges. Most public spaces are controlled by access gates and fences. Precinct is not inclusive, especially sidewalks and older buildings.

Proposal_

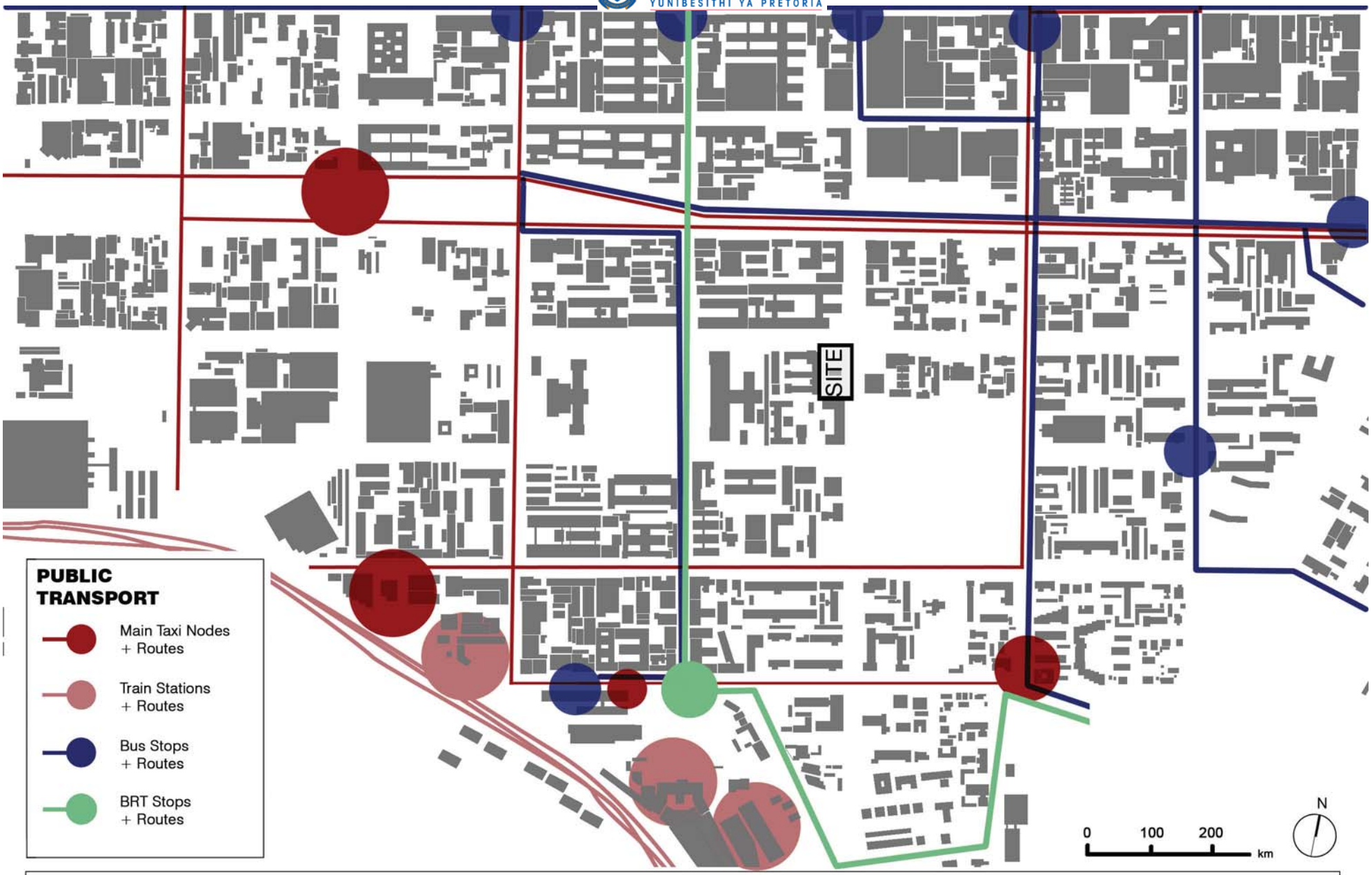
Removal of fences and boundaries. Introduction of universal access into buildings. Revisit sidewalk, pavement and street crossings.

illus. 4.12 Urban Mapping. Edge and barrier conditions (Burger's Park Framework 2011)

Boundaries
Observation(s)_
Precinct has well defined boundaries, but boundaries are not accesible by pedestrians
Proposal_
All boundaries and crossings to be made pedestrian friendly

Nodes
Observation(s)_
Precinct needs anchor node on western edge, Burger's Park Node to get additional functions
Proposal_
Establishement of new anchor and activity node at western origin of Minnaar street

illus. 4.13 Urban Mapping. Boundaries and nodes (Burger's Park Framework 2011)



illus. 4.14 Urban Mapping. Public transport; existing routes and proposed BRT routes (Burger's Park Framework 2011)

Public Transport Routes and Nodes

Observation(s)_

Gutrain now providing additional public transport routes. Together with other existing and proposed routes precinct is well serviced.

illus. 4.15 Urban Mapping. Public transport; Gautrain bur routes (Burger's Park Framework 2011)

illus. 4.16 Urban Mapping. Analysis; Strengths, weaknesses and threats (Burger's Park Framework 2011)

illus. 4.17 Urban Mapping. Analysis; Opportunities (Burger's Park Framework 2011)

4.4.6 Summary

4.4.6.1 Macro Scale

The Pretoria CBD has been fragmented leaving areas of degradation. The CBD does have its own narrative to tell, and any intervention should adhere to and contribute to this narrative. The narrative of a post-town, capital city with many residents and lots of potential.

4.4.6.2 Meso Scale

The Burger's Park precinct has a lot of potential. All the makings of a community is possible, but rebranding and re-focussing of the museums, a safety improvement on all public transport routes and stops and an introduction of the lacking components to the entire precinct are necessary. Also the need for development of the western edge of the precinct will be crucial.

After compiling the above Urban Mapping (Illustrations 4.7-4.17) as part of the Burger's Park Group Framework (2011), the following can be seen as the problems that the Burger's Park Precinct currently faces:

- Lack of functioning public buildings
- Lack of public facilities, restaurants, services, shops and rest rooms
- Neglected and unfrequented museums
- Pedestrian unfriendly sidewalks along north-south axis
- Lack of balance to pedestrian, public and private vehicular movement.
- Undefined gateways
- Mainly a transitional space, not a destination
- Absence of precinct specific and appropriate community functions
- Unsafe and not inclusive public transport stops
- Prostitution at night time around Burger's Park

A precinct with such a strong identity and character like the Burger's Park Precinct is in need of well informed urban design and architectural intervention to realise its full potential. In this instance a reaffirming of its existing nodes, paths, edges and landmarks (Lynch, 1960); as well as a proposal for the inclusion of new features that will strengthen what is already evident.

4.4.7 Textures of the Burger's Park precinct

In this investigation of accessibility and inclusivity, the presence of textures, colours, and barriers are relevant. The following textural introduction to the precinct is there to give a feel for the tactile qualities that one can find in the precinct (Illus. 4.18).

4.5 Urban Framework

4.5.1 Introduction

The Burger's Park Group Framework 2011, is based on the area surrounding Burger's Park. The area was chosen because of its existing potential, the large existing residential community and the uniqueness of the urban problems, problems that are specific to the area and differ from the rest of Pretoria CBD. The Burger's Park Precinct serves as a transition zone and acts as a gateway for pedestrians and commuters going to the CBD. Modes of transport in the precinct are train, taxi and the now functioning Gautrain. Pedestrian movement, however, does take prevalence.

4.5.2 Problems identified

The problems identified in Burger's Park Precinct summarised and illustrated in Illustration 4.19.

4.5.3 Aims and vision

The Burger's Park Group Framework 2011 vision and aims are the following:

- A mixed use environment with a unique character that is identifiable.
- An environment focused on pedestrian movement in and through the precinct, through easy navigable, accessible and safe, routes and spaces.
- Introduction of community functions and public resources.
- Increased densities and infill of vacant and under utilised sites and buildings.
- Addresses the lack of public interface in office and governmental buildings.
- Updating of the existing museums by introducing new exhibitions
- Creation of a cultural, art and museum precinct that promotes these functions, which develops the visitors and residents simultaneously.

(Burger's Park Group Framework, 2011)

illus. 4.18 Collage; Textures of the precinct

4.5.4 Precinct Proposal

The Burger's Park Group Framework 2011: Problems, is illustrated below (Illus. 4.19).

Urban Problems
Identified within Study Area

1. Minnaar street termination
Poor spatial beginning for prominent road within precinct

2. Minnaar street / Schubart street intersection
Dangerous for pedestrians and unarticulated

3. Crossings within precinct
Orientated towards vehicular use

4. Current museum buildings
Severely underutilised and neglected

5. Palisade fences and brick walls
Prevents urban and pedestrian amalgamation of space

6. Underutilized and vacant lots
Degrades urban character of precinct

7. Taxis along Jacob Mare street
Creates dangerous urban edge to street

8. Government Buildings
All government, office and institutional buildings to have public interface ground floors

9. Block thoroughfares
Poorly defined and severely under utilized arcades

10. Pretorius square
Poorly functioning public space - no established hierarchy

11. Pretorius square / Paul Kruger street edge
Edge not utilised

12. Paul Kruger street
Street and edges need revision in order to improve pedestrian environment

13. Informal off-street parking
Street edge definition and pedestrian environment compromised

14. Buildings close to Pretoria Station
Densities too low to accommodate increased economic activities from Gautrain

15. Pretoria Station crossing
Dangerous for pedestrians and unarticulated - lacks "gateway"

illus. 4.19 Urban Framework. Urban problems within precinct (Burger's Park Framework 2011)

Urban Design Proposal for Precinct

1. Minnaar street termination
Creation of a new pedestrianised anchor node. The node will include new landscaped areas as well as new cultural facilities.

2. Relocation
New site for additional Culture programme or museum.

3. Reprogram
Government Printers to be reprogrammed in order to interact with the new node as well as gain museum / educational functions.

4. Minnaar street / Schubart street intersection
Crossing to be paved in order to facilitate a change in texture as well as level.

5. Crossings within precinct
Crossings to be paved in order to facilitate pedestrian movement across intersections. Texture difference and level difference in order to indicate and allow for the predominance of the pedestrian.

6. Paul Kruger street
Sidewalks along Paul Kruger Street to be extended by one lane on each side in order to better facilitate informal trade as well as flow along the Paul Kruger axis. Boulevard to be created through the addition of a pedestrianised island in the middle of the road in accordance with the Re Kgabisa Tshwane framework. Landscaping to be dealt with as appropriate.

7. Block thoroughfares
Thoroughfares to be articulated as arcades. Building interfaces and landscape to be dealt with as appropriate.

8. BRT Station
Proposed BRT Station to be moved north one city block.

9. Buildings close to Pretoria Station Western block
Building densities to be increased and reprogrammed as mixed use high density development. Perimeter blocks to define street edge with a building height of 5-10 storeys.

10. Buildings close to Pretoria Station Eastern block
Building densities to be increased and reprogrammed as mixed use high density development. Buildings above 5 storeys to be considered for adaptive re-use.

11. Pretorius Square Parking Basement
New Basement Parking and cultural node to activate square. in excess of 1000 parkings to be provide for precinct.

12. New cultural / civic building
Existing structures to be demolished and unfertilized site to be developed. Program to be cultural / civic based and highly public in nature. Building height to be between 7 and 9 storeys.

13. Vacant / unfertilized lots
Vacant sites to be developed. Buildings to be highly public in nature with the building height in accordance with existing built fabric. new community functions around Burger's Park.

14. Melrose House
Bicycle rental facilities to be provided in tennis courts. Parking area to double up for adjacent public buildings.

15. Public Transport
All bus stops and routes to be facilitated in any new developments.

illus. 4.20 Urban Framework. Urban design proposal for precinct (Burger's Park Framework 2011)

4.6 Micro Scale – Site Surroundings

4.6.1. Precinct

The Burger's Park precinct is a patchwork of urban fabric, with patches of old, older, recent and new interventions. When studying old aerial photographs of the area, it is clear that the scale, uses and architectural styles have varied, and continue to vary (le Roux, 1990: 125). One aspect, however, has been a long-standing characteristic of this precinct, a very strong residential character concentrated around Burger's Park itself (le Roux, 1990: 130). Also, the strong pedestrian link from the Pretoria Station to Church Square, further north, remains a busy street with loads of activities happening alongside it. The precinct consists mainly of privately owned apartments overlooking Burger's Park, in close proximity to the Pretoria Station (Swart, 2010: 60). See illus. 4.21.

illus. 4.21 Site surrounds. Site highlighted in red, adjacent building and street names indicated

4.6.2 Adjacent Buildings

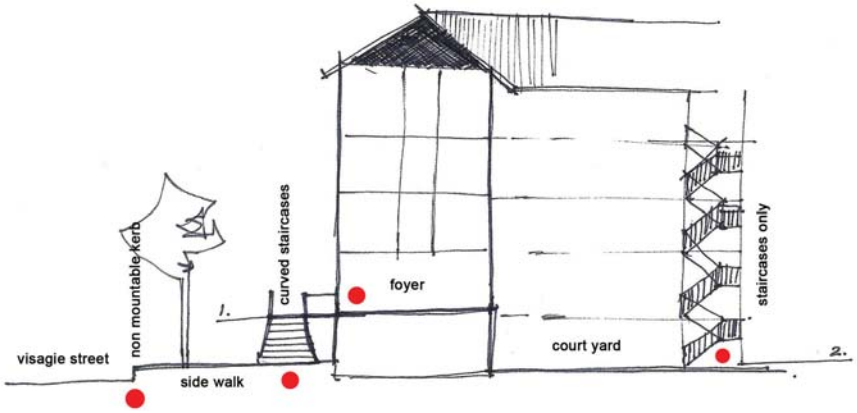
a) A.J.O. Sentrum

The A.J.O. Centre (235 Visagie Street, erven 2798 and 735) is a losieshuis [lodging house] in an E-shaped floor plan (Illus. 4.22a). The original structure, before it was built on to towards the south, was designed by architect H. Vermooten in 1953. It is also an example of modern style with a strong functionalist approach (le Roux, 1990: 126). The building edges are appropriate and add to the street quality with garden space along the sidewalks, and a well looked after pedestrian path. See illustrations 4.22a,b,c.

The entrance to the A.J.O. Centre has double, curved staircases to the main foyer space (ibid). Illustration 4.22c. This is the only access to the main foyer space from the street. The courtyards are level with the ground floor, because the courtyard spaces are at a lower level than the street access. Vertical circulation in the A.J.O. Centre is by means of staircases only. No lift is present in the centre. The central walkway provides access to rooms and shared spaces.

illus. 4.22a A.J.O Centre. Eastern facade from site

illus. 4.22b A.J.O Centre. Eastern facade from site



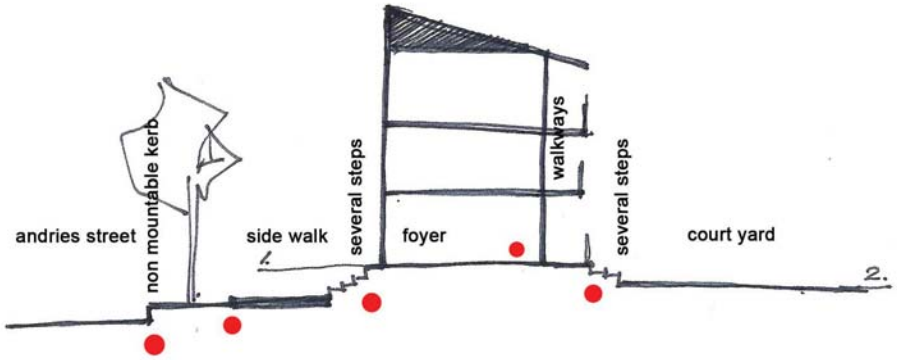
illus. 4.22c A.J.O Centre. Physical barriers indicated with red

b) Stellenberg Apartments

South of the proposed site. The building actually consists of two structures, built at different times, which function separately. It consists of two L-shaped buildings, of which the north one was built first and the second completed later. Stylistically it is distinctly Modern and very pragmatically realised.
However, the use of the yellow-brown face bricks is unconventional, the expected finish would have been plaster with a white shade of paint (le Roux, 1990: 130-131).The block is well maintained, but the sidewalk has not been taken care of properly. Illustration 4.23a & 4.23b.
The main and central access to the apartment building from Andries Street has six steps leading up to the foyer space. Refer to illustration 4.23c. No handrails are present on either side of the staircase. Access from the west is through the vehicle entrance with three steps leading up to the walkways and staircases providing access to the apartments. Walkways as well as the courtyard are under lit. No lift is present, presumably due to the period in which building was completed.


illus. 4.23a Stellenberg. Eastern facade from site


illus. 4.23b Stellenberg. Eastern facade from site



illus. 4.23c Stellenberg. Physical barriers indicated with red

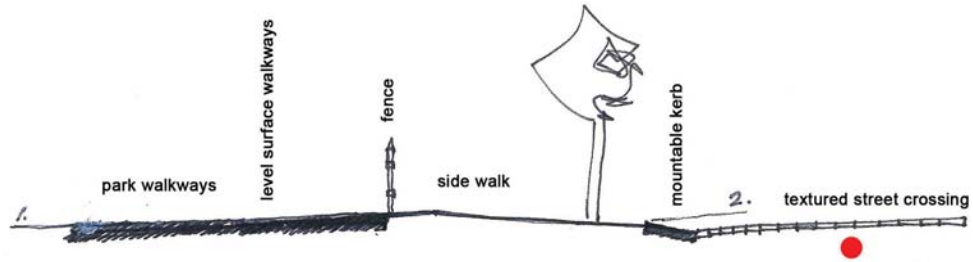
c) Burger's Park

Burger's Park (290 Jacob Mare Street, erf 3139) is a 4Ha plot that doesn't quite fit into the pattern of the Pretoria city block (le Roux, 1990: 131). The property was originally set to the Botanical Garden of Pretoria (circa. 1874). The park as it is today was laid out by George Hays (owner of Melrose house opposite the park) and was realised by the botanist James Hunter (Be my Guest, 1990: 17). The completion of the park was only realised in 1892, making it the oldest park in the city. This Victorian park with its Victorian Keeper's house (le Roux, 1990: 131), has asymmetrical walkways and abundant curves.

The florarium, kiosk and Band stand are of architectural value (Be my Guest, 1990: 17). It also houses a World War I memorial for the South Africans who died in battle as part of the Scottish Regiment (Visit Pretoria, 2010). The park is well kept and used; it is an escape from the busy city centre to the north. Many children and residents and passersby frequent the park daily (ibid). Illustrations 4.24a, 4.24b & 4.24c.


illus. 4.24a Burger's Park. Statue of Pres. Burger


illus. 4.24b Burger's Park. Playground area



illus. 4.24c Burger's Park and sidewalk. Physical barriers indicated with red

d) Wesley Methodist Church

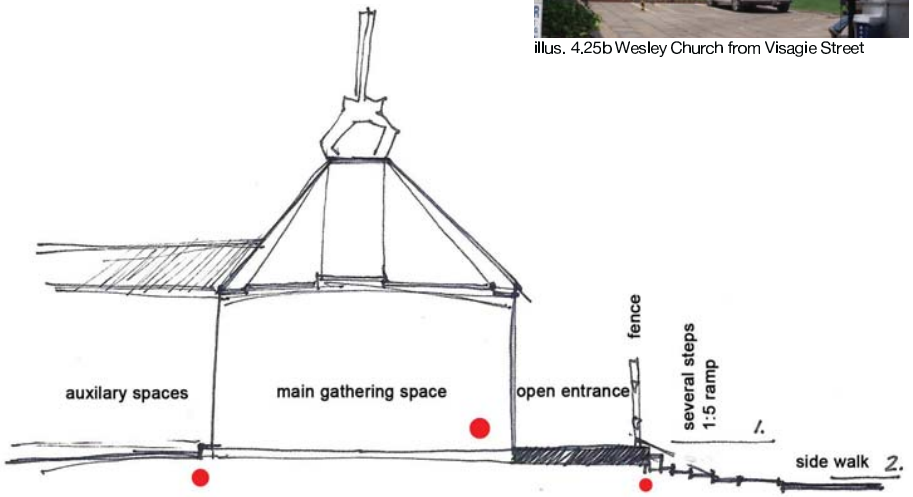
This church (251 Visagie Street, erf 2930) is located in Burger's Park Lane which forms a quiet barrier that separates the city from the park. The six-sided church was designed by Gordon Ellis and was completed in 1970 (le Roux 1990: 127).

The main structure, sitting on the six corners is exposed concrete columns and beams, with brick in fill. The main entrance is on Andries Street, and has several steps and two steep ramps leading to the entrance. The recently completed Yeast Social housing project is located east of the church. (Illus. 4.25a, 4.25b & 4.25c).

The main entrance to the church is fenced of from the sidewalk by a palisade fence. The ramp gradient is to steep and the steps do not have a handrail (Illus 4.25c). The entrance from the lawned parking lot has no steps, and most elderly people prefer the use of this entrance.

illus. 4.25a Wesley Church. Sidewalk main entrance

illus. 4.25b Wesley Church from Visagie Street



illus. 4.25c Wesley Methodist Church. Physical barriers indicated with red

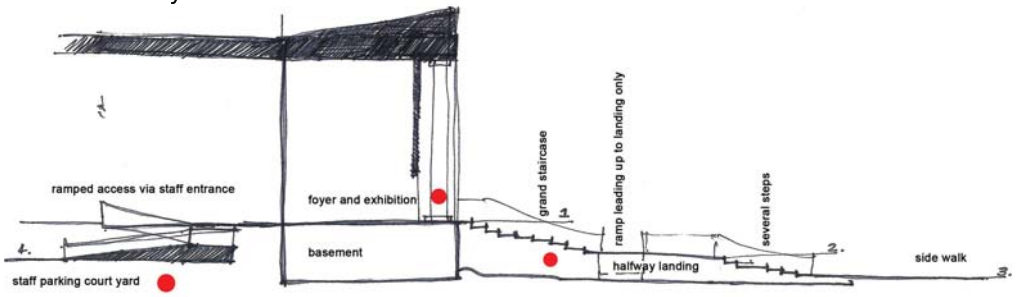
e) Transvaal Museum

The Transvaal Museum is built in typical monumental museum style, complete with majestic staircase and symmetrical facade. This sandstone and brick building with its arched windows and heavy columns was completed in 1913 by the Department of Public Works (Le Roux, 1990:124). The Transvaal museum is yet another example of finely detailed sandstone work in Pretoria (ibid). The additions in the 1980's were done with sensitivity and mimic the proportions and detailing of the existing building, but in modern face brick finish. See illustration 4.26a.

Access to the museum sits on the symmetry axis on the western facade by means of the 15 step entrance only. Handrails are provided and the finish of the steps allows for some definition in tread and riser identification. Access for unassisted elderly persons and those confined to a wheelchair or crutches is by means of the back entrance through the staff parking lot, with inadequate signage indicating this disabled entrance and parking (see illus. 4.26b). The front entrance is ramped (1980's addition) but only extends to the landing level of the main staircase (see illus. 4.26c). The Transvaal Museum is currently undergoing a rebranding exercise and will soon be called the Museum of Natural History.

illus. 4.26a Transvaal Museum. West facade

illus. 4.26b Transvaal Museum. Back entrance for disabled persons



illus. 4.26c Transvaal Museum. Physical barriers indicated with red

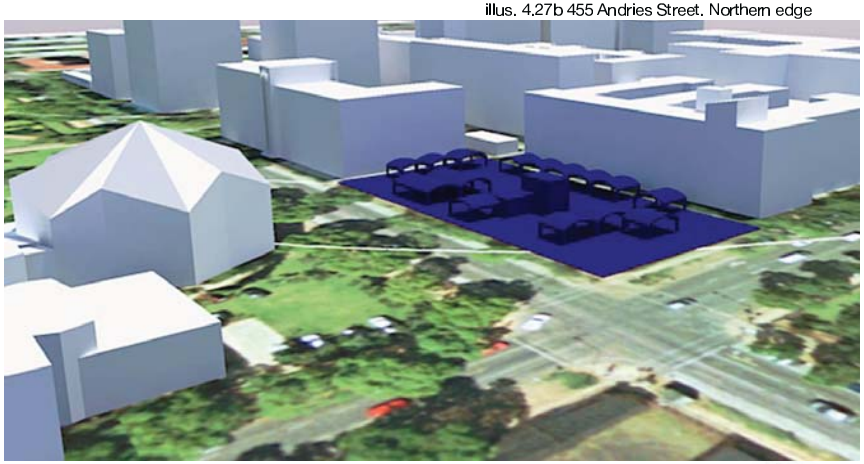
f) 455 Andries Street

455 Andries Street is situated on the corner of Andries and Visagie Street (erf 718 portions 1, 2, 3, 4). The current uses of this site is Lethu's Car wash occupying the shade ports and Sammy's Hair Salon operating from an old container. There is only a small permanent structure on the stand, which currently houses the offices and storerooms of the car wash (illus. 4.27a & 4.27c).

This erf is surrounded by four storey to six storey apartment buildings, and up to fourteen storey high office and departmental buildings. It is clear from the analysis of building heights and densities that this site is underutilised and underdeveloped. The underdeveloped state has left the crossing of Andries and Visagie Street with an undefined urban edge. The site is in need of development, to be incorporated into the existing character of the area. Illustrations 4.27a & 4.27b.

illus. 4.27a 455 Andries Street. From the South

illus. 4.27b 455 Andries Street. Northern edge



illus. 4.27c 455 Andries Street. Existing structures on the site

4.6.3 Micro Scale – Summary

The area surrounding the proposed site has varied building uses and typologies. The main focus would be on improving sidewalk conditions, street/walkway surface transitions, densification of open sites, proposing accessibility solutions to existing buildings and the need for improved public transport to Burger's Park itself.

precedent

analysis of existing works as influence to the design proposal

5

precedent

A wise person once said that you're only as creative as the obscurity of your sources.

Albert Einstein (Think Exist, 2011)

5.1 Introduction

This chapter is an evaluation of existing projects that have a similar programme, context and intent. This chapter also investigates projects that have similar form, typology and design influences than the proposed Burger's Park Opportunity Platform. Each project study has a focus area, but the programme, construction and accessibility will continuously be assessed when applicable.

5.2 Mount Angel Abbey Library, St. Benedict, Oregon

5.2.1 Project info

Architect: Alvar Aalto
Project Title: Mount Angel Abbey Library
Building Type: Library
Location: Mount Abbey, Oregon
Completion Date: 1970
Climate: moist & temperate
Awards: none

5.2.2 Project relevance

- Programmatic
- Daylighting
- Structural expression
- Brick work

5.2.3 Project description

This library was commissioned by the Benedictine Monk's campus in 1967 (Mount Angel Abbey Library, 2011). Even though the library forms part of the campus, it is a community library to the remote regions surrounding the hilled areas in the region of St. Benedict, 65 kilometers north of Portland in Oregon, North-west United States of America.

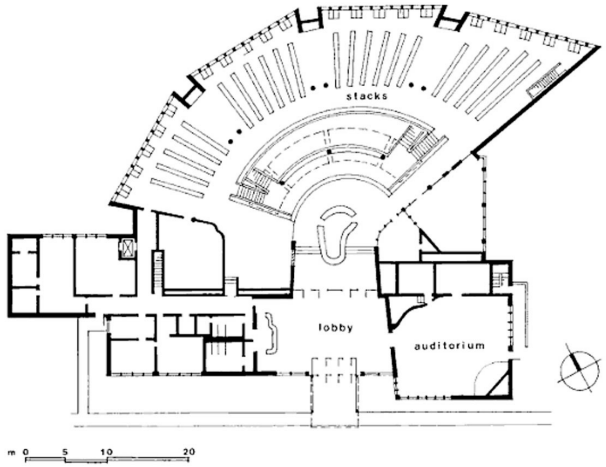
The building is located on the sloped side of a hill top, with views of the area all around. The main entrance is low scale and it gives the illusion that it is a small building; however upon further investigation one realises it is a large volume of yellowish brick.

The concept Aalto used was a direct result of the clients ideals; "...to build a library where the pleasure of reading would be combined with efficiency and functionalism of a competent and specialised learning centre." (Asensio, 2002:64)

5.2.4 Project Analysis

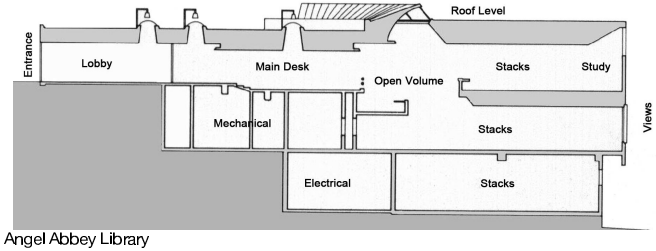
1) Library design

The plan is 3 wedged shapes placed around a central point with an atrium-like central space. See illus. 5.1.



illus. 5.1 Ground floor plan of Mt. Angel Abbey Library

The design of the library (Illus. 5.1) has provided seating throughout the stacks and other library spaces, allowing for pause, reading and resting. The location of the info desk enables viewing of various sections of the library from the main central desk. Chairs, seating, desks, light fixtures, lighting quality, spatial experience were purposely designed. Alto also ensured visual links between different levels (Illus. 5.2). Aalto also managed to capture specific views and circulation routes and spaces were designed around these views, which contribute to the interior.

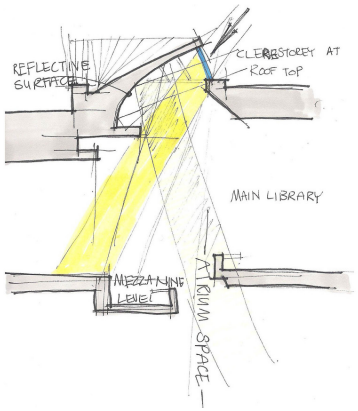


illus. 5.2 Section of Mt. Angel Abbey Library

2) Daylighting

From the onset of the architectural approach, the lighting (focussing on daylighting) was key in the entire building's organisation and space planning. Aalto has managed to create different light qualities for different spaces; light qualities that compliment the different intentions of the spaces. Based upon research conducted in 1997 by Nathan Good (Architect) from the California State Polytechnic University, the users, visitors and employees are of the opinion that the quality of the lighting in the spaces are the reason for the success of the library (Good, 1997: 9).

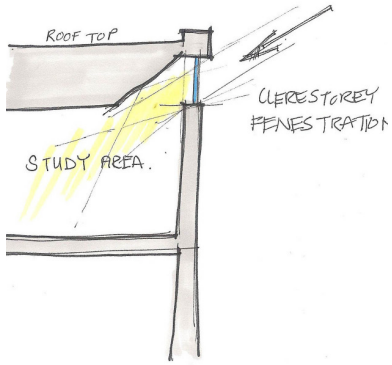
Various ways of letting in natural light is utilised in the Mount Abbey Angel Library building and they will be investigated below: Refer to illus. 5.3, 5.4 and 5.5.



illus. 5.3a Section of Natural lighting 1

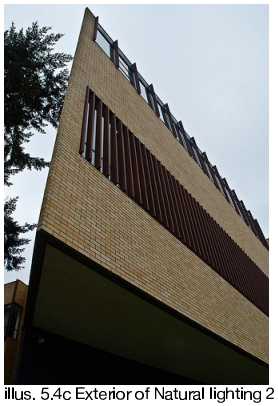
illus. 5.3b Interior of Natural lighting 1

illus. 5.3c Exterior of Natural lighting 1

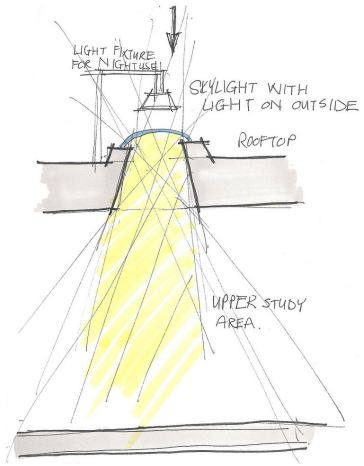


illus. 5.4a Section of Natural lighting 2

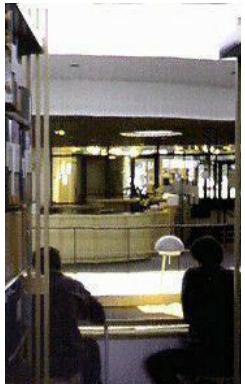
illus. 5.4b Interior of Natural lighting 2

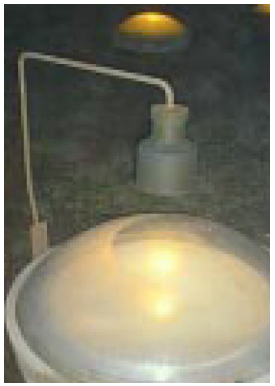


illus. 5.4c Exterior of Natural lighting 2



illus. 5.5a Section of Natural lighting 3

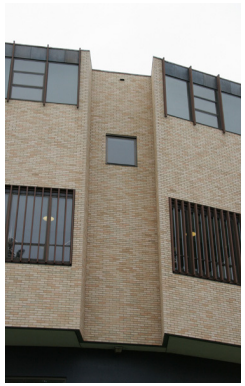

illus. 5.5b Interior of Natural lighting 3


illus. 5.5c Exterior of Natural lighting 3

3) Facade design

The exterior walls of the mount Angel Abbey Library is in direct contrast with the smooth off-white plastered interior finish. The yellowish brown brick exterior is complimented by the timber slats that cover the sun facing windows. Carefully selected colour palette and brick joints (in particular at corner junctions) ensure that the library sits unobtrusively in its environment. See illus. 5.6a.


illus. 5.6a Brick exterior


illus. 5.6b Exterior of aisle window


illus. 5.6c Exterior of aisle window

4) General

The library has been critiqued for having certain areas that have dark passages, but for the most part it is well lit with natural lighting for most of the year (Good, 1997: 9). It can however be said that the occupants, the workforce in particular, do not have a complete understanding of the buildings lighting intent. During the investigation Good, found that when the janitor opens up in the morning, he turns on all the lights, which continue to burn for most of the day.

5.2.5 Lessons learnt

- The Mount Angel Abbey Library makes use of natural lighting in various ways, resulting in a lively and conducive environment with designed lighting quality.
- The architectural language and material palette have stood the test of time and the library has undergone very little changes over the past 40 years, a testament of the quality of the design.
- Certain parts of the library are designed to use natural lighting, but it is visible even in photographs that some of these areas are underlit.

5.3 Peckham Library and Media Centre, Peckham, South-east London

5.3.1 Project Info

Architect: Will Alsop
Project Title: Peckham Library and Computer centre
Building Type: Library & Computer resource centre
Location: Peckham, South-east London
Completion Date: 2000
Climate: temperate marine
Awards: Stirling Prize for Architecture, 2000
Civic Trust Award, 2002.

5.3.2 Project relevance

- Programmatic and collection size
- Computer resource centre
- Public interface
- Volumetric & form
- Urban regeneration & safety issues

5.3.3 Project description

The Peckham Library and Media Centre were designed for the London Borough of Southwark to revitalise this middle to lower income suburb of London. The centre houses a range of facilities including a library, study areas, computer and other media centre, children and topic specific areas, multi use spaces and a conference space (Public Architecture UK: 12).

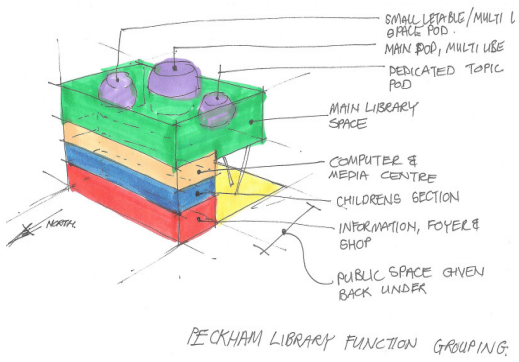
The library is located opposite a small public space and responds to it by extending this space by raising the structure above it. Spatial organising is done in levels; with auxiliary functions, the bookshop and information desk on the ground level. As one moves up, the children's section and the bulk of the computer section is located on the levels overlooking the public space. The library, study and conference spaces are located on the top level, optimising on view and natural lighting. The building facade is operable to the north (shaded side) to allow natural ventilation and lighting. The 'pods' in the library space have skylights that are manually controlled to allow natural light to enter as desired (London Open House, 2011: 3).

The brief by the clients to the architects included the following: the library should be light, must have flexible spaces which could change as library needs changed, a safe and welcoming environment (given high crime & community fears) , and it had to be energy efficient.

5.3.4 Project Analysis

1) Public interface & function distribution

The public interface of the library building is towards a square that has been created by the elevation of the top floors and the cutting back of the lower, to create a pause and shelter space; an outside room. See illus 5.8a and 5.8b.



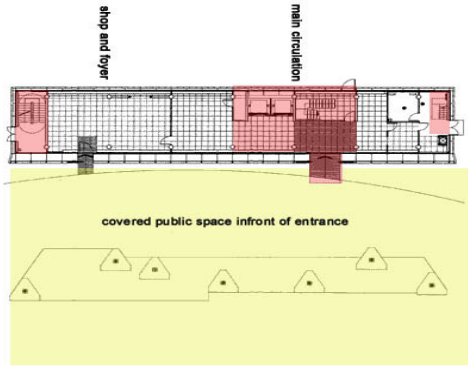
illus. 5.7a Peckham Library function grouping

illus. 5.7b Exterior of Peckham Library

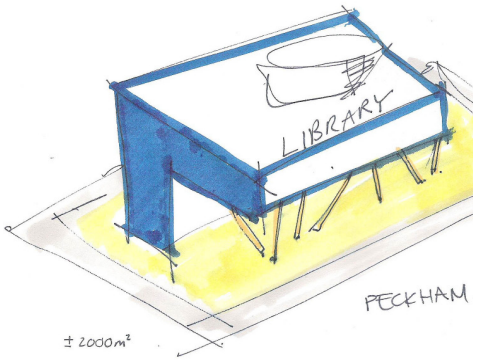
2) Urban regeneration & safety

The iconic volume and presence of the architectural language within the adjacent suburbs has made it impossible to ignore that this new structure had been erected. The library's use since opening in 2000 has been overwhelming and judging by the response on the library's official website the library has fulfilled a much needed community function.

The result of the development of the library had led to many other developments in the immediate area. An article written by Sui-Ti Wu, the Design Director at NPS Property Services, in 2008, entitled 'Peckham Revisited' (Public Architecture UK: 11) states that the effect this urban regeneration has had on the area is evident. The building also won the Civic Trust award in 2002, an accolade that speaks of the achievements in empowering citizens.



illus. 5.8a Peckham Library public interface



illus. 5.8b Volumetric of Peckham Library

3) Programmatic, volume size

Function	area	alternative
Total area	2500sqm	5 storeys
Library area on top floor	1200sqm	80 000 volumes & 60 carrels
Learning & computer centre	250sqm	50 media stations
Shop on ground floor	90sqm	1 tenant
Pod Meeting Room	60sqm	50 people seated

Table 5.1 Peckham Library accommodation schedule

5.3.5 Lessons Learnt

- The introduction of the Peckham library in the run-down suburb has revitalised the area and exceeded its expectations. This is especially is clear if one reads what the residents of the area have to say about the library and what it has meant for the community.
- The importance of an outside foyer or public square as an outside room to the library.
- The iconic structure that is the Peckham Library is recognisable in the precinct as a public building, and due to the colour use and form it has a certain playfulness that is expected.
- The condensed envelope of the library proves that a mixed-use library can be fitted into the size of an equivalent conventional library. Table 5.1.

5.4 Idea Store, Whitechapel, London

5.4.1 Project info

Architect: David Adjaye
Project Title: Idea Store Whitechapel
Building Type: Library, computer centre & multipurpose hall
Location: Whitechapel, Tower Hamlets, London
Completion Date: 2005
Climate: temperate marine
Awards: none

5.4.2 Project relevance

- Programmatic, not just a library
- Accessible approach
- Multipurpose hall, Computer centre, class rooms
- Urban regeneration
- Facade and context response

5.4.3 Project description

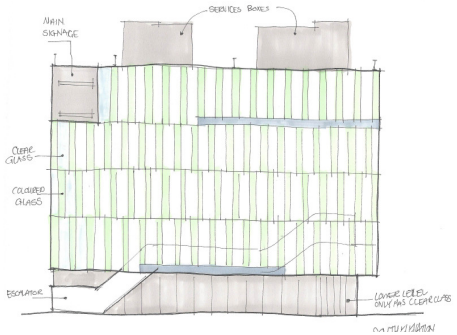
The Idea Stores of David Adjaye were introduced in 2000 as a new way of bringing books and computers to the suburbs in which they were introduced. The Idea Stores are a contemporary interpretation of a library (Allison, 2006; 184-186). It does away with the conventional library building with dusty books and few users. The concept behind the Idea Store is an urban resource centre which houses community spaces that are linked to the library and facilitate the use of these spaces. The Idea Stores are urban renewal projects with the intent to uplift both the people and the place in which it is inserted (Tower Hamlets Borough Council, 2011).

5.4.4 Project Analysis

1) Facade design

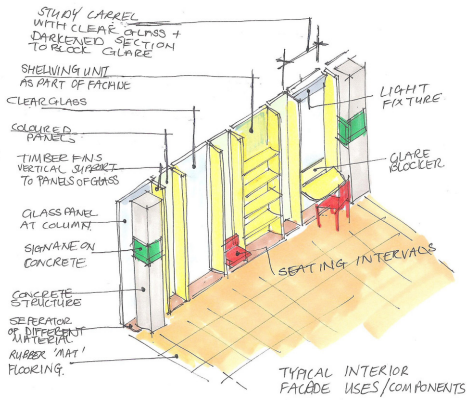
The facade treatment is a result of two considerations; firstly the inspiration from the roof structure of the nearby market stalls; secondly a direct result of the interior design; the study carrels and book stack configuration (Allison, 2006; 186). Certain views have also been framed within this regulating grid of the facade and fenestration design. Illus. 5.9a&b and 5.10a&b.

illus. 5.9a Corner approach of Idea Store



illus. 5.9b Elevation of Idea Store

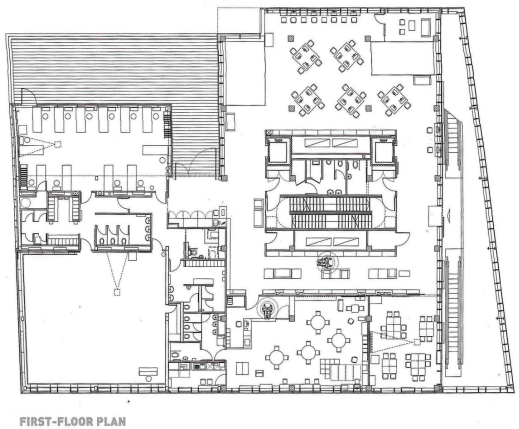
illus. 5.10a Facade design of Idea Store



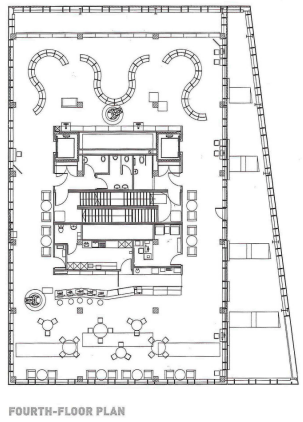
illus. 5.10b Interior facade design of Idea Store

2) Library Design

The Idea Store, Whitechapel, can be seen as multiple buildings or as one multi functional building (Allison, 2006; 184-186). The layout functions per level and different community spaces are provided on the lower levels. The upper level is dedicated to the library space and a café. Whitechapel also has a multi functional hall, but it is designated as a dance studio (Tower Hamlets Borough Council, 2011). See illus. 5.11a and 5.11b.



illus. 5.11a First floor plan of Idea Store



illus. 5.11b Fourth floor plan of Idea Store

3) Programmatic, volume size

Function	area	alternative
Total area	2340sqm	4 storeys
Main library	1010sqm	100 000 volumes & 60 carrels
Children's library	330sqm	18 000 volumes & seating
Classrooms	340sqm	80-140 persons
Cafe	165sqm	50 patrons
It/surfing	150sqm	25 fixed, 12 open
Dance studio	140sqm	40 – 60 dancers
crèche	95sqm	
a/v library	110sqm	12 000 volume

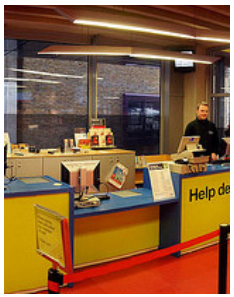
Table 5.2 Idea Store accommodation schedule

4) Urban regeneration, response to context

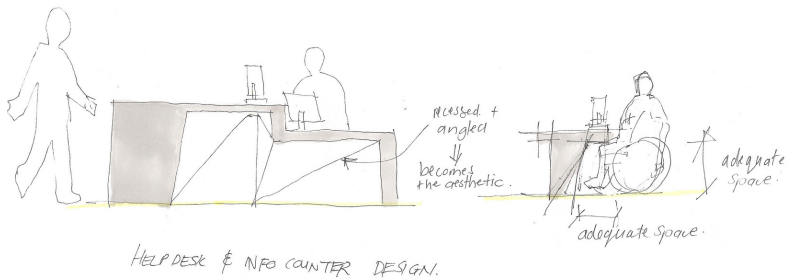
The response to the existing buildings, on what used to be an open erf - both on a volumetric and scale level- are done in a very sensitive manner, but still allows the Idea Store Whitechapel to be visible from the street because of the way in which the facade protrudes the adjacent building envelope (Tower Hamlets Borough Council, 2011).

5) Accessibility

The Idea Store Whitechapel has been designed from the start with accessibility in mind. Adjaye has even included on the floor plans a wheelchair bound person to indicate adequate space and orientation (Allison, 2006; 191). See illus. 5.11a & 5.11b. The counter design in the Idea Store makes provision for a wheelchair by means of a recessed counter, that also drops down for easy use. This drop down also enables children to use the counter easily. See illus. 5.12a & b.

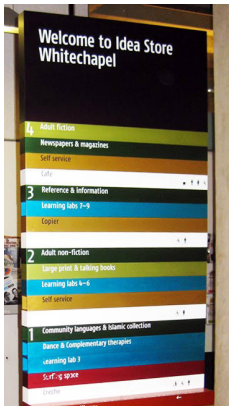


illus. 5.12a Counter design of Idea Store



illus. 5.12b Sketch of recessed counter of Idea Store

Signage has also been included with high contrast, easy reading and appropriate positioning. There is additional orientation signage provided for easier navigation to the different components inside the building. The development of the signage by Adjaye is a way to simplify the complex programme and wayfinding in the Idea Store. See illus. 5.13a and 5.13b.



illus. 5.13a Main signage

illus. 5.13b Lobby signage of Idea Store

5.4.5 Lessons Learnt

- The Idea Stores have reintroduced the library in a way that has enticed the residents to explore it. It is a mixed-use library, which introduces additional programmes into the building that allow for flexibility and adaptation.
- In a complex programme with multiple spaces (like the Idea Store, Whitechapel), navigation, wayfinding and signage are crucial to the optimal performance of the building.
- The Idea Store has managed this by colour coding zones and through easy to read protruding typeface making wayfinding clear and accessible. Tactility of signage and colour use enables the visual impaired to engage with the signage.

5.5 Brandhorst Museum, Munich, Germany

5.5.1 Project Info

Architect: Sauerbruch Hutton
Project Title: Brandhorst museum
Building Type: Art Museum
Location: Munich, Germany
Completion Date: 2009
Climate: continental
Awards: Intl. Prize for sustainable architecture, silver medal Designs of the year 2010, design Museum London, Shortlist Lubetkin Prize 2009, Shortlist Mies van der Rohe Award 2009, Selected work.

5.5.2 Project relevance

- Facade treatment
- Interior light quality due to solar shading
- Corner treatment
- Passive cooling and heating

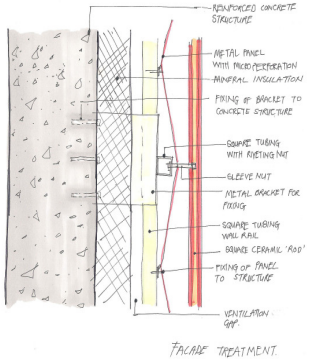
5.5.3 Project description

The Brandhorst Museum houses a private collection of art from the late 20th century as well as contemporary works (SauerbruchHutton, 2011).

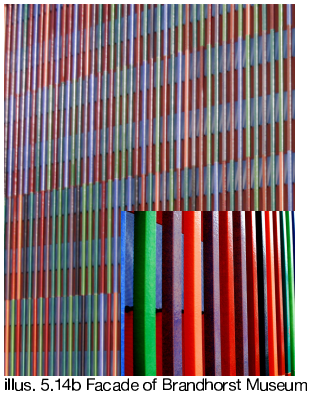
The result of a competition, the area has been livened up by the bold colour use as an expression of the “art district” it announces. The colourful facade announces the start of the art district. The facade is entirely covered with the ceramic blocks, with the exception of strategic fenestration and entrances. The interior is finished completely in white with continuous floor, ceiling and balustrade surfaces. The floors are fitted Danish Oak timber contrasting with the white surfaces elsewhere. The Brandhorst Museum is also designed to keep temperatures under control without the use of electricity or mechanical systems.

5.5.4 Project Analysis

1) Facade detail and interior light quality

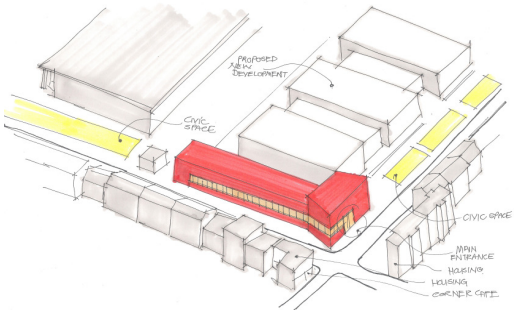


illus. 5.14a Fixing method of ceramic tubes


illus. 5.14b Facade of Brandhorst Museum

The facade treatment consists of 40mm by 40mm ceramic tubes in 23 varying colours (50 Years Detail, 2011). The facade colours are divided into two groupings with darker and lighter variations. The facade is continuous and covers certain strategic fenestration to provide shaded interior light with patterns. Some fenestration elements on the exterior do not sit behind the ceramic facade to place emphasis on these openings (SauerbruchHutton, 2011). See illus 5.14a and 5.14b.

The exterior contrast with the white interior were intentional, because the interior is meant to be a blank canvas on which the artworks can be exhibited. The exterior identity was intended to be bold and iconic within the precinct. The facade is a product of NBK, TerrArt Baguette Glazed (illus. 5.14b). The colours were specifically chosen, custom made and fitted to the detail shown in illus. 5.14a, as recommended by the manufacturer (SauerbruchHutton, 2011).



illus. 5.15a Corner and urban fabric response of Brandhorst Museum


illus. 5.15b Photo of corner with entrance away from corner

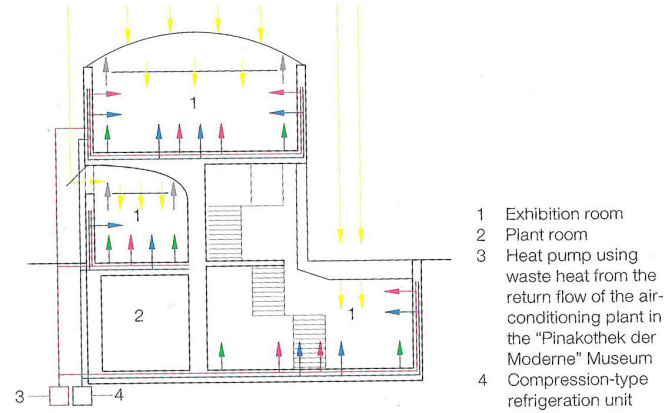
2) Corner treatment

The corner treatment was dealt with in a nontraditional manner, by not placing the entrance on the corner and instead having a recessed courtyard that provides entry into the building. See illus. 5.15a and 5.15b.

3) Cooling and heating

The Brandhorst museum makes use of a system that uses heat (captured with a heat pump) from surrounding ground water to heat up the interior. The distribution of air is done through the floor (see illus. 5.16) for both heating and cooling strategies, and requires an overall decrease in air-conditioning needs (Hausladen & Tichelmn, 2010: 98). See illus. 5.16.

Cooling is achieved through a compression type cooling unit and strict pollutant and moisture content monitoring is applied (Hausladen & Tichelmn, 2010: 99).



illus. 5.16 Cooling and heating strategy in the Brandhorst Museum

5.5.5 Lessons Learnt

- From the onset the corner had been the main generator in the form and urban edge response.
- Offsetting of the entrance from the corner
- Colour use on the exterior to reflect vibrancy of interior objects and activity.
- Ceramic tubes provide an engaging facade, which has proven to be low maintenance.

5.6 Harare Mixed-use Library, Khayelitsha

5.6.1 Project info

Architect: Chamberlain & Irving Architects (in association with Mark Thomas)
Project Title: Harare Mixed-use Library
Building Type: Library & community centre
Location: Khayelitsha, Western Cape
Completion Date: 2010
Climate: sub-tropical Mediterranean
Awards: none

5.6.2 Project relevance

- Programme
- Colour use and artwork
- Project intent
- Materials
- Natural lighting

5.6.3 Project description

The Harare Library is more than just a conventional library where one can take out books and other media. It also houses an Internet cafe, a training centre, a children's centre, a community space, study spaces, lounge areas, and a few NGO office spaces (illus. 5.17). It also forms the edge to the adjacent Harare Square from which the Library gets its name (Cooke, 2011).

The building design was kept simple to keep cost low, and many robust material choices have been made in order to ensure maintenance and durability is optimised (illus. 5.17).

5.6.4 Project Analysis

1) Programme
The diverse programme has been welcomed by the community and has become more of an attraction than a standard library. For the management and owners this has also been a good start, as the long-term feasibility and sustainability had been considered and directly resulted in this diverse programme (Cooke, 2011).

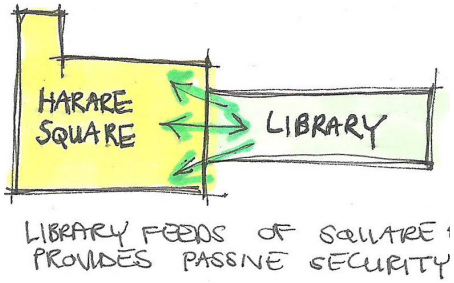

illus. 5.17 Main circulation space with brick paving, and natural lighting from saw-tooth roof clere storey windows

2) Colour use and Artwork
The colour palette of the Harare Mixed-use Library was limited and colour is introduced by community executed artworks and furnishings. The artwork are strategically placed and contributes to the identity of the architecture. The furnishings introduce splashes of colour in the otherwise white and red brick interior. See illus. 5.18a & 5.18b.


illus. 5.18a Community mosaic artwork at Harare Library


illus. 5.18b Children's library and play area

3) Project intent
The Harare Mixed-use Library is intended to function as a library and a community centre to the residents of Khayelitsha. It is also intended for the building to provide the adjacent Harare Square (and the neighbourhood) with passive surveillance. This has been successful and petty crime has decreased noticeably since the opening of the library. A crucial element in the design of the building is the interaction on the entrance level, as the public interface, directed towards the square (Cooke, 2011). See illus. 5.19a & 5.19b.



illus. 5.19a Interaction between square and library

illus. 5.19b Photo of Harare Library main entrance

4) Materials

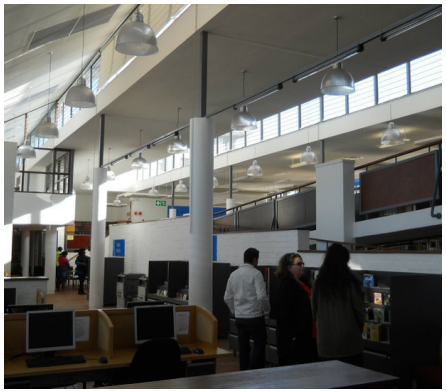
Material choices were based upon cost and the robustness of the materials. The floor of the main entrance lobby and circulation is red brick clay pavers that is extended from the outside forming a seamless threshold between the inside and the outside. See illus. 5.20a & 5.20b.

illus. 5.20a Gathering space with informal seating arrangement

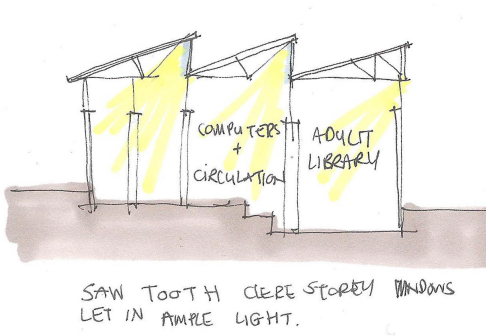
illus. 5.20b Main counter with dropped down section and artwork

5) Natural lighting

The main spaces of the library and community spaces make use of natural lighting by means of clerestory windows located in the saw-tooth truss system used. The lighting provides adequate soft lighting for the reception area, main circulation and stacks on the higher level. The south facade, facing Harare Street also provides ample lighting. The library makes use of task lighting that is individually controlled to further meet the lighting requirements. See illus. 5.21a & 5.21b.



illus. 5.21a Interior of computer space lit by natural light



illus. 5.21b Sketch showing natural lighting from above

5.6.5 Lessons Learnt

- Mixed-use approach to library has made sense in this context and is proving to be well utilised by the community.
- Community involvement played a role in the community's ownership of the library.
- The direct link and relationship between the library and gathering spaces have allowed resource use from the library to facilitate the programmes that have been implemented since the inception of the building.
- Robust materials can be used in unconventional applications.

5.7 Seattle Central Library

5.7.1 Project info

Architect: Rem Koolhaas
Project Title: Seattle Central Library
Building Type: Library & community centre
Location: Seattle, Washington, United States of America
Completion Date: 2004
Climate: Humid sub-tropical
Awards: Leadership in Energy & Environmental Design (LEED)
Silver certification, 2005 Honor Award for Outstanding Architecture
American Institute of Architects, 2005 Outstanding Library Building Award
American Institute of Architects and American Library Association, 2005 Platinum Award for Innovation and Engineering, American Council of Engineering Companies (ACEC)

5.7.2 Project relevance

- Programme
- Ramp
- Signage
- Urban response
- Gathering spaces

5.7.3 Project description

The Seattle Central Library (SCL) is part of the larger group of libraries that form the Seattle Public Library system which has been in existence since 1891. (Seattle Library, 2011). A library that's main aim "is to bring people, information and ideas together to enrich lives and build community"(Seattle Library, 2011). The SCL was funded by the "Libraries for All Building Program which was established in 1998 and aimed to provide access to libraries, upgrading of existing libraries to the greater Washington, D.C. district (ibid.).

The building is a glass and steel structure with a continuous ramp that houses the collection of books, computers and gathering spaces. The idea behind the ramp was to provide a uninterrupted presentation of the Dewey decimal system used in numbering books according to their category. The ramp also allows for easy movement between these levels. The ramp's gradient is very gentle and makes for easy transition between the book stacks (OMA, 2011).

5.7.4 Project Analysis

a) Urban response
The SCL is one of several projects that were introduced to serve the immediate community (Seattle Library, 2011). The Seattle area was lacking in public services and deteriorating. The library injected new energy, resources and money into this area. The library has been described by Koolhaas as a "community hub" but it has been criticised in the architectural realm and by its community as not being that. Architecture critic, Lawrence Cheek, criticism was that "if it were a community hub then the doors would have opened" onto street along the whole facade. The public have described it as being too inward and not inviting (Seattle Times, 2011; Project for Public Spaces, 2011). See illus. 5.22a & 5.22b.


illus. 5.22a Exterior view of Seattle Central Library


illus. 5.22b Seattle Central Library

b) Signage
Signage in the SCL is incorporated with the floor or with the surface that it is placed on. The book stack numbering system is integrated on the floor surface in the flooring material as indicated in illustration 5.23a (OMA, 2011). Signage for counter identification is integrated on the vertical surface in a contrasting colour and legible typeface (illus. 5.23b).

The SCL is a large building with many components and wayfinding in it was initially criticised. The signage was revised and navigation is very clear in the library now. Clarity and visibility of signage is the success, together with the incorporation of the signage into building components.

illus. 5.23a Floor signage part of floor material

illus. 5.23b Counter signage on the main desk

c) Gathering spaces

The SCL has a large number of gathering spaces (Seattle Library, 2011). Some gathering spaces are formal and suited for lectures and meetings. Other spaces are smaller and are used as instruction rooms for small groups (OMA, 2011). Many informal spaces also allow for spontaneous grouping of people. Illustrations 5.24a and 5.24b.

illus. 5.24a Gathering space with formal seating arrangement

illus. 5.24b Reading and small gather spaces

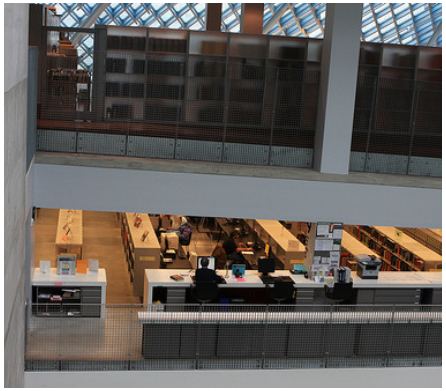
d) Ramp design

The ramp approach that Koolhaas has taken in designing the SCL originated in two components; the uninterrupted Dewey decimal system and the ease of movement between levels (OMA, 2011). See illus. 5.25a & 5.25b.

The ramp applied in the SCL is continuous and extend up multiple floors to form main component of the building (illus. 5.27 & 5.28). The ramp has function on it and not merely a circulation method as it is usually applied in architecture. The ramp house the book stacks and numbering of these stacks are implemented on the floor material on the ramp, making it very clear to the user where he is in the Dewey sequence. (Illus. 5.26). A staircase in the centre of the building can be a shortcut between the different levels in spiral ramps. Books, desk spaces, computers and seating is located on the ramps (Seattle Times, 2011).

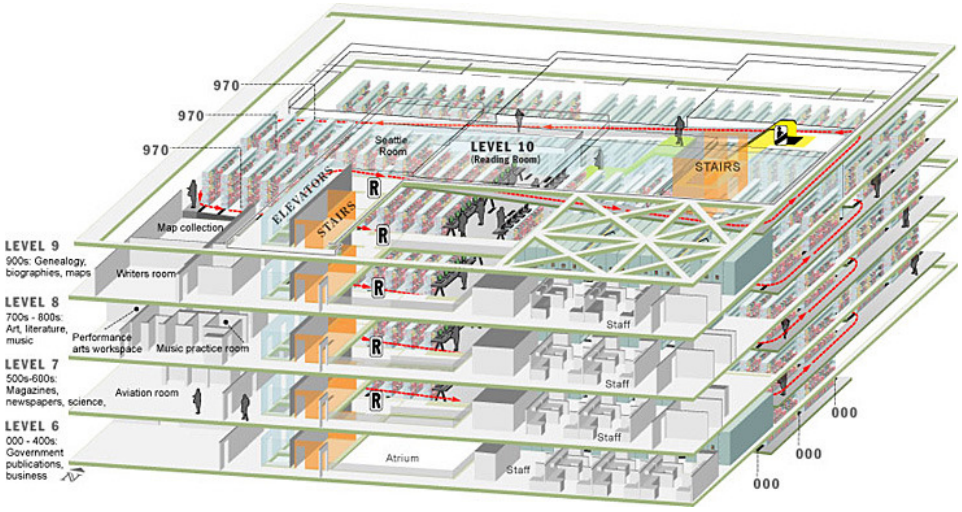
The ramp as been used to visually and physically connect different levels and components in the library (illus. 5.27 & 5.28). Though there are escalators, lifts and stairs in the library, many users prefer the ramp as main means of vertical circulation (Seattle Library, 2011).

The ramps extend the equivalent of four floors and have a slope of 1:25 which is very gentle and make movement with wheelchairs and prams easy. The problem with the ramp is the circulation widths as "...the ramp aisles are too narrow to allow wheelchairs or baby strollers to pass each other" says Steve Johnston of the Seattle Times (Seattle Times, 2011).

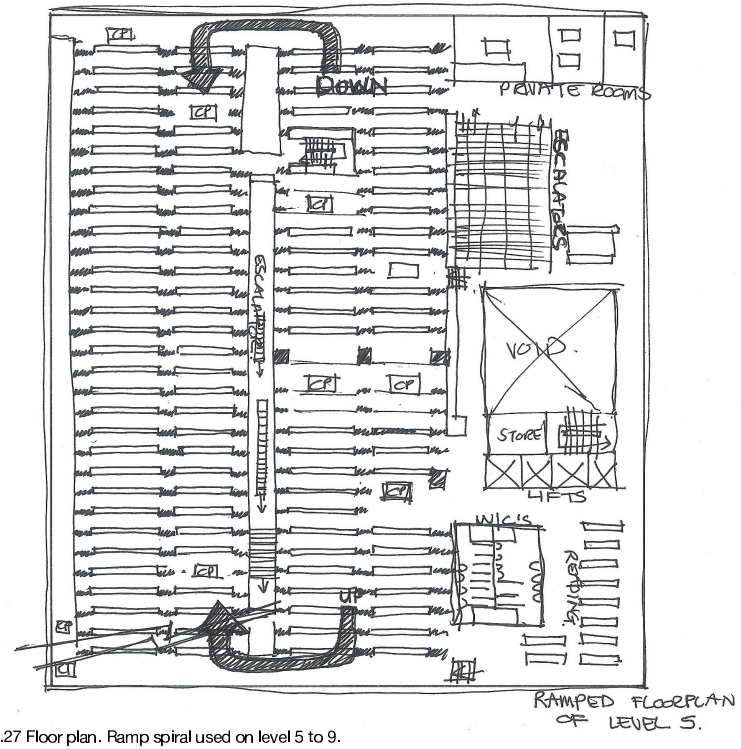


illus. 5.25a Gentle ramp spiral with book stack arrangement

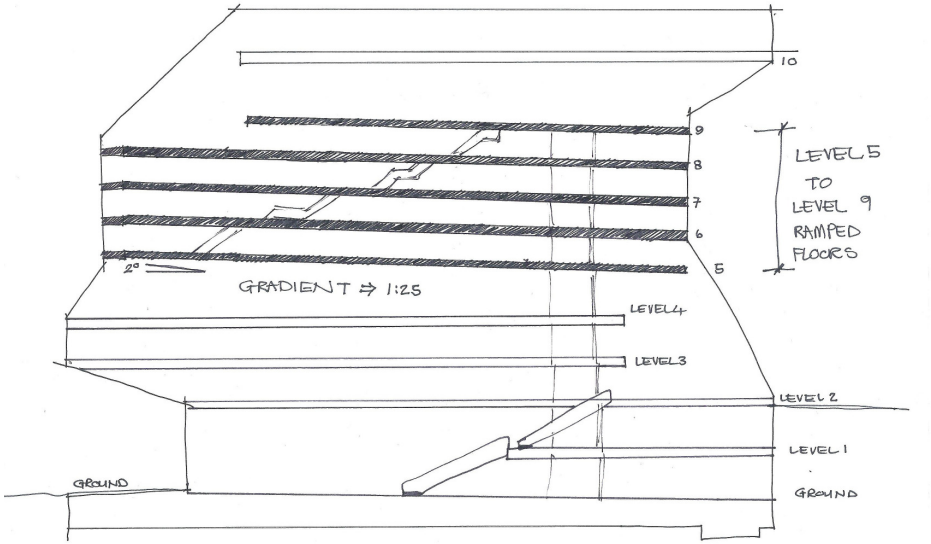
illus. 5.25b Gentle ramp slope easily navigated to level surfaces



illus. 5.26 Ramp spiral used for Dewey numbering system, housing book stacks and other functions



illus. 5.27 Floor plan. Ramp spiral used on level 5 to 9.



illus. 5.28 Section. Ramp spiral used on level 5 to 9 indicated.

5.7.5 Lessons Learnt

- Mixed approach to library spaces with diverse programme that encompasses books, digital media, gathering of people, educational programmes and access to the Internet.
- Signage incorporation into furniture, floor and walls allows for less complicated approach and makes signage part of the aesthetic. Also makes signage more inclusive as contrast and position is critically decided.
- Urban edge needs to connect with street and building must interact with the people on the street and invite them in.
- Varying types of gathering spaces allow many different types of programmes to be run.
- The ramp as means of vertical circulation makes going form one level to the next an experience and surfaces changes from a gentle gradient can be easily navigated as transition point is not obtrusive. The ramp also allows for connection to levels below.

design development

documentation of design generators and process of design proposal

6

design development

No great thing is created suddenly.

Epictetus (IEP, 2011)

6.1 Introduction

This chapter considers factors that served as design generators, thereby reinforcing the need for the Burger's Park Opportunity Platform. Secondly the chapter introduces design considerations and includes a continuous assessment of inclusive design guidelines that are intrinsically part of the design approach.

6.2 Client Profile

6.2.1 Main Client

- The Library and Information Services (LIS)

LIS is a subsidiary of the Department of Arts and Culture (DAC). The client is chosen because the project meets the requirements for eligibility for funding from the Community Library Services Fund.

The reason for this choice is because the project intention addresses "... the continuous challenge of improving access to information for all South African communities." (LIS Transformation Charter, 2009).

6.2.2 Participants

- Tshwane Leadership Foundation (TLF)

Development of Communities and urban renewal by means of community upliftment and skills programmes.

- The Burger's Park Community Platform (BPcom)

BPcom is a nonprofit organisation that was established as a result of community needs and new developments in the precinct.

- Wesley Methodist Church Community Programme

The Wesley Methodist Church has community based projects dealing with unemployment, women specific classes (like sewing classes), child care (like the day-care) and other basic skills development (like English literacy classes).

The participating foundations will run the Opportunity Platform, facilitating the 'Learn, Play & Gather' programmes with the aid of the resources provided. The centre will be run by these participants as they are already based within walking distance of the Opportunity Platform.

6.3 Accommodation Schedule

The programme development has given rise to the need of the following spaces:

Sidewalk and street edge:

Seating
Bus stop
Bicycle racks
Covered area for shelter
On street parking for persons with disabilities

Ground floor:

Foyer space
Lobby
Toilets including accessible wc
Average size kitchen for community hall
Community hall with storage
Secondary community space, unprogrammed
Exhibition space
Server (food or selling of items)
Place for seating
Outside space linking to inside
Refuse yard
Recycling depot

First floor:

Children's library and play area
Computers
Photocopiers
Small informal gathering area
Secondary entrance
Main counter with office
Instruction rooms (for small classes or workshops)
Rest rooms with baby changing facilities
Storage

Second floor

Counter with office
Periodical collection
Main library
Computers
Copiers
Small informal gathering area
Staff offices and boardroom
Storage
Reading corner

Third floor:

Counter with office
Reserved collection
Main library
Computers
Copiers
Small informal gathering area
Storage
Reading corner

Roof:

Services such as solar water heaters
Lounge/gather space
Server
Patio type space for gathering

illus. 6.1 Programme distribution in the Burger's Park Opportunity Platform

6.4 Design Generators

6.4.1 Theoretical premise as design generator

a) Social architecture

Alvar Aalto speaks of 'social architecture' and reiterates the responsibility of architects to design buildings that are of no harm to its users and that are suitable to all its users (Aalto, 1940: 15).

Social architecture that Aalto refers to is the making of spaces that contribute to the lives and experiences of the users, humanising of architecture. This is important in public architecture, as public architecture has the possibility of enabling the community to become fully participating members of society. Jim Channon, a self proclaimed social architect, states that it is to "...design spaces so that people can have a bigger sense of life, a life force and ultimately an experience."(Video, Channon, 2008).

If the link is made between social architecture and designing for persons with disabilities and impairments, it can be concluded that architectural space and place should enable people's development and experiences, and "bring them together" (ibid.) rather than inhibit or diminish it.

b) Senses and synaesthesia

Lefebvre, in Production of space (1991), refers to social space as space that is occupied by energy. Energy within architectural space is the presence of humans. Human presence within space is experienced and appreciated by the use of senses. The senses of sight, hearing, taste, smell and touch can be used within architecture to change the perception of space. Space is also influenced by the presence of natural phenomena and 'the outside'.

Synaesthesia is the use of senses. Synaesthesia, as part of the theoretical premise of inclusive design, can be used as a generator of architectural space that is accessible, but also that enhances the experience of ambulatory persons.
Senses are used for wayfinding in buildings, and wayfinding is the experience of spaces. It is essential that the multiple sensory decisions inform space, in order for persons with reduced senses, to be able to still experience the space or to navigate the space without difficulty. Easily navigational spaces are perceived as safer by individuals who are not familiar with the spaces. According to an interview with an occupational therapist, persons with disabilities often 'fear their environments' (personal communication, Smit, 2011), a direct result of the environments they have found themselves in. If this fear of environments can be broken, by the author's suggested Unified Design approach, these members of society that experience this fear will become productive and engaging members of society.

c) Inclusive design theory

Inclusive design carefully considers each disability, as diverse as they are, with equal importance. As discussed in Chapter 2, an inclusive environment is an environment that takes all people into consideration.

The inclusive design principles and intent are clear. It is an environment that considers the potential ability of all people, in order for them to use and occupy spaces freely and independently.

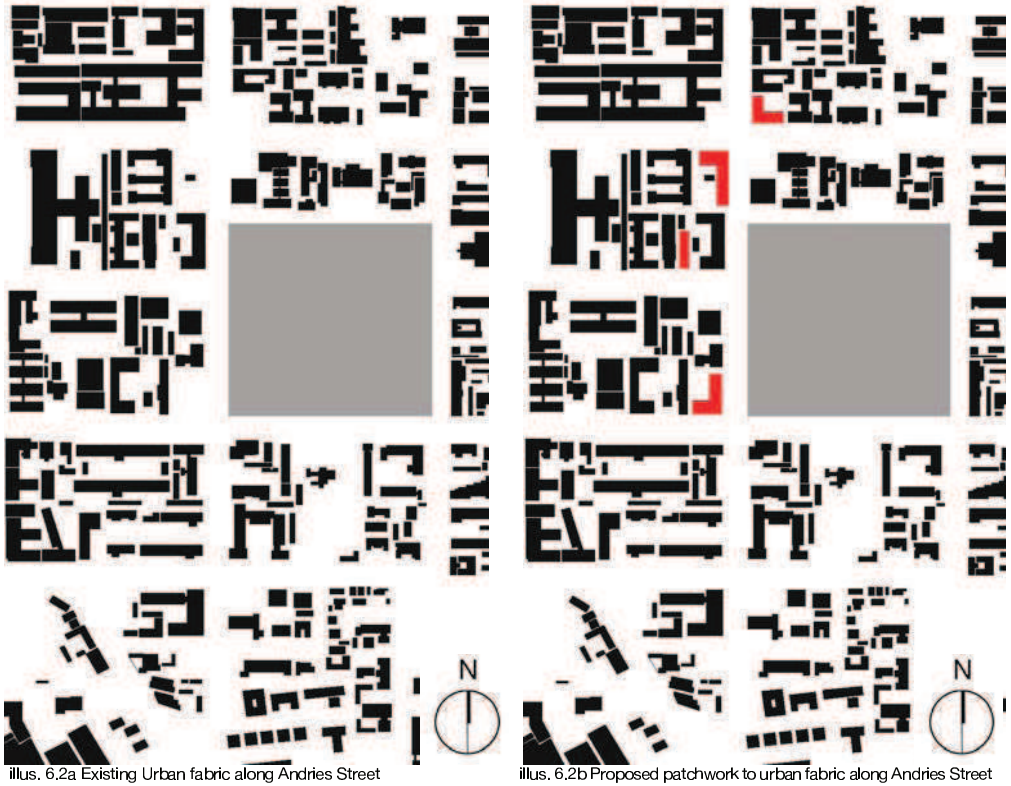
Within the design of a public building the process must be an exclusively inclusive approach, one that considers every design decision critically. This critical retrogressive-progressive process of decision making and evaluation, with inclusivity in mind, enriches and enables buildings to be intrinsically inclusive.

6.4.2 Site as generator

6.4.2.1 Urban Design considerations

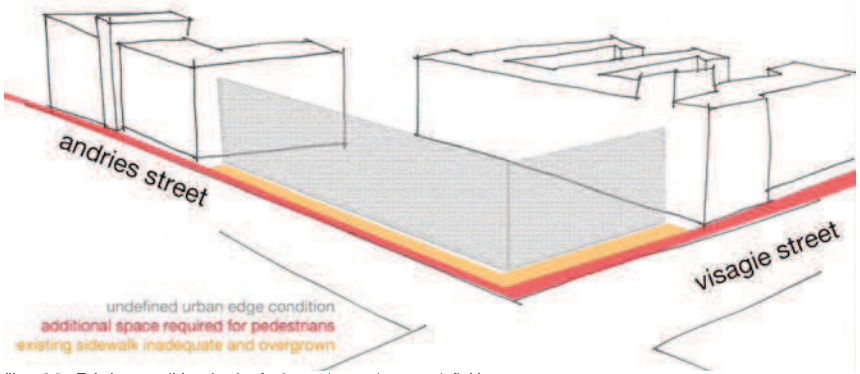
a) Urban fabric

The urban fabric of the Precinct is a fine grain patchwork of low rise apartment buildings and old houses. The urban fabric displays areas of urban scars and wounds. The proposed site, 455 Andries Street can be seen as one of these wounds, illustration 6.2a. Illustration 6.2b indicates the result of repairing the wounds along Andries Street. The site can be seen as underdeveloped, which is a break in the developed and established character of the precinct as a whole. The proposed courtyard typology responds to existing developments in the precinct and completes the urban fabric.

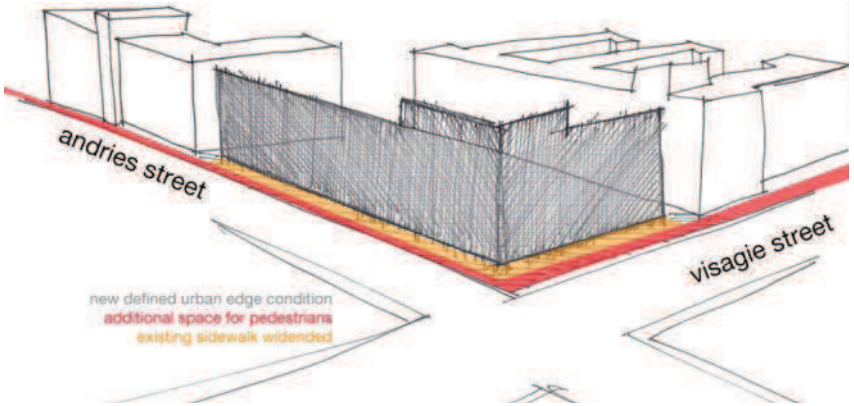


illus. 6.2a Existing Urban fabric along Andries Street

illus. 6.2b Proposed patchwork to urban fabric along Andries Street



illus. 6.3a Existing condition; Lack of urban edge and corner definition



illus. 6.3b Proposed urban edge and corner treatment

b) Undefined urban edge

The site has an undefined urban edge that results in a series of problems as discussed in Chapter 2. The main problems are:

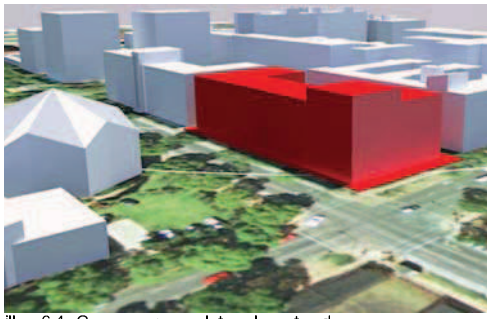
- Lack of built fabric
- Inadequate pedestrian response
- Dilapidation and deterioration of urban qualities
- Problems with crime and illegal occupations

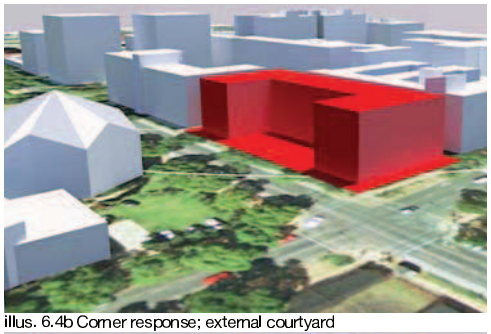
Illustration 6.3a&b shows the intended treatment of the site/street edge to reduce and/or address the identified issues.

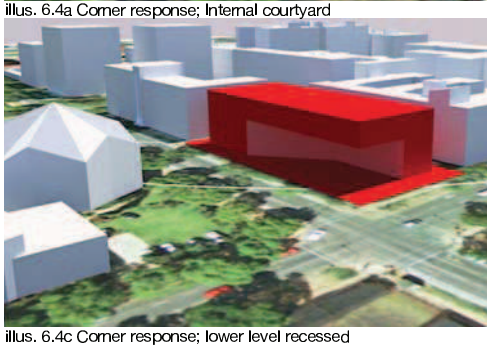
c) Corner site

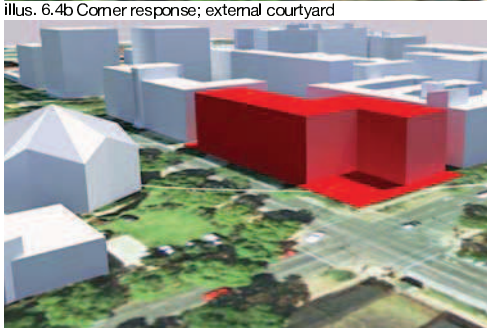
Traditional corner treatment methods were investigated and are illustrated in Illustrations 6.4a to 6.4c. The corner treatment of the proposed site is dealt with in the following manner:

- Recessed facades relative to corner
- Corner facade(s) reads as larger volume
- Corner volume of continuous material choice to anchor and define the corner
- Verticality of screen elements suggest a ‘tower’ corner
- Entrance on ground level is located on corner, possible entry from both sides of corner


illus. 6.4a Corner response; Internal courtyard


illus. 6.4b Corner response; external courtyard


illus. 6.4c Corner response; lower level recessed


illus. 6.4d Corner response; corner recessed

d) Pedestrian routes not defined and inadequate

The current sidewalk conditions along the site are inadequate and neglected. The fencing and vegetation growth on the sidewalk is overgrown on the fence and on the sidewalk surface, no vegetation is present. The existing 1200mm sidewalk is in good condition, but does not suffice in carrying the pedestrian traffic. Illustration 6.5 shows the position and size of the sidewalk and fence. Illus 6.5 is a photo indicating the lack of ownership and neglect due to no development on the site.

illus. 6.5 Sidewalk in need of upgrading and vegetation overgrowing fence

6.4.2.2 Site conditions

a) Pedestrian activity

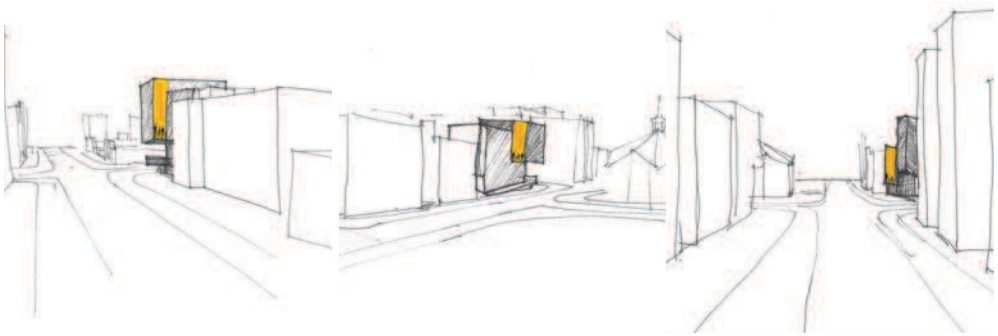
The intersection of Andries and Visagie is an active pedestrian intersection, with many people moving to and fro between the Pretoria Station, Burger's Park and the CBD. Most of the concentrated pedestrian activity ensues during the peak periods; early morning, lunch time, after school and at the end of the work day. Illustrations 6.6a to 6.6b are photos indicating the inadequacy of the sidewalk treatment.


illus. 6.6a Busy sidewalk after school day


illus. 6.6b Busy sidewalk with inadequate path

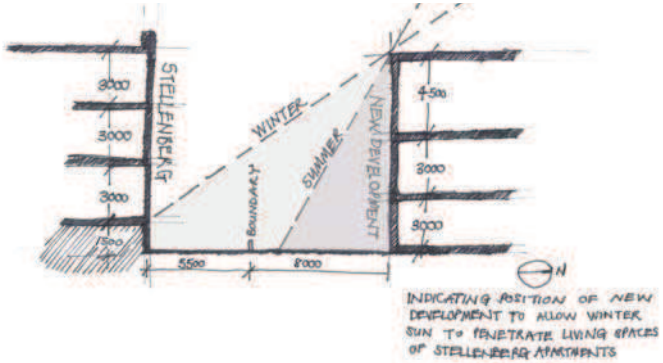
b) Vehicular activity

The site also has two major one way streets running past it, Visagie Street towards the east and Andries Street towards the south. This direction-controlled movement of cars results in the eastern and the northern facades being the only visible facades when travelling in a vehicle past the site. This observation should inform the placement of entrances and building identification tools (like signage). Illustration 6.7a indicate the possible use of facades as signage or advertising.


illus. 6.7 Drawings indicating use of facades for building identification and signage

c) Adjacent buildings

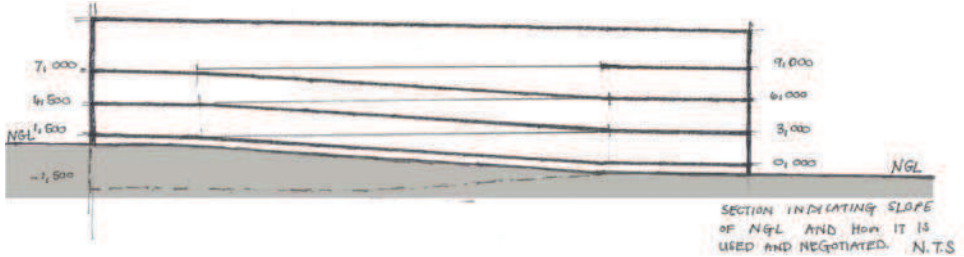
The third component of consideration is the adjacent buildings locations. The A.J.O Centre on the western periphery and Stellenberg Apartments on the southern periphery have implications on any development that takes place on the site, as both buildings have units that are orientated to the site. Careful consideration in terms of function placing and shading opportunities and restrictions. Illustration 6.7 indicates positioning of new built fabric to allow adequate winter sun to still enter the living areas of Stellenberg apartments.



illus. 6.7 Drawings indicating distance required to retain winter sun in Stellenberg Apartments

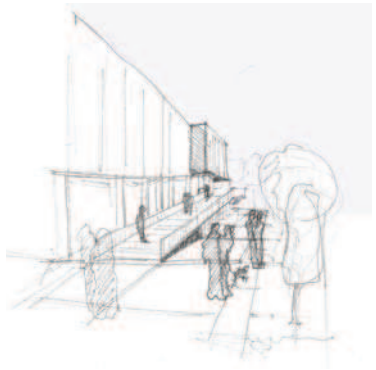
d) Topography

The site has a fall of two meter diagonally across from the south-west corner to the north-east corner. The slope is utilized as a design generator to position the floor levels. Firstly the lowest point is placed level with the entrance level ensuring the possibility of a threshold transition from inside out to be flush (Illus 6.8).
The level difference is also absorbed by the approach to vertical circulation by means of the central ramp-around-atrium configuration. The south block floor level acts as the landing for the ramp, and the north block then acts as the next landing for the ramp. This enables the building to take on a form that does not create levels with no function.



illus. 6.8 Slope of site is negated by the use of ramps

The downward slope is also juxtaposed by the ramp extension of the (downward sloping) sidewalk that leads up to the first level. The ramp only has to negotiate a level change of 1500mm due to the existing slope and building positioning. (Illus 6.8 and 6.9).



illus. 6.9 Sketch showing sidewalk manipulation by the use of the ramp

6.4.3 Site zoning as generator

6.4.1 Presence of energy and users

The first zoning approach is the positioning of spaces with functions that relate to the presence of users. This results in the positioning of the community spaces on ground level, the main entrance to the library component off the ramp on the first floor and the location of spaces that need a quieter environment higher up (illus 6.8).

Position of external ramp that leads to first floor is off the main pedestrian route past the site and aims to extend the sidewalk to an upper level. The ramp also serves as vantage point, shelter below and allows access for persons that prefer not to use of stairs as vertical circulation (illus. 6.9).

6.4.2 Presence of noise

The noise generated by pedestrians and passing vehicles has determined the zoning of the site. The programme of an Opportunity Platform has diverse accommodation schedule and allows for function grouping. The community spaces, receiving foyers and public seating are grouped on the lowest level towards the street corner of Visagie and Andries Street. The other community space extends outwards to the quieter amphitheatre space, a semi private extension to the built fabric.

6.4.3 Summary

Vertical zoning has taken into account the placement of functions that work together more appropriately and that generate tolerable noise levels. The following is the distribution of functions in the design:

- Noisy community spaces on ground floor
- Children's library on lower level, placed to link to outside space
- Instruction/workshop spaces on first level opening up on the balcony/ extension of the ramp
- The open computers and gathering lounge spaces are located on the lower levels adjacent to the atrium.
- Upper levels are dedicated to study spaces, the library and reserved sections
- The roof is accessible and can accommodate functions and gatherings and also houses some of the services of the building

6.4.4 Programme as generator

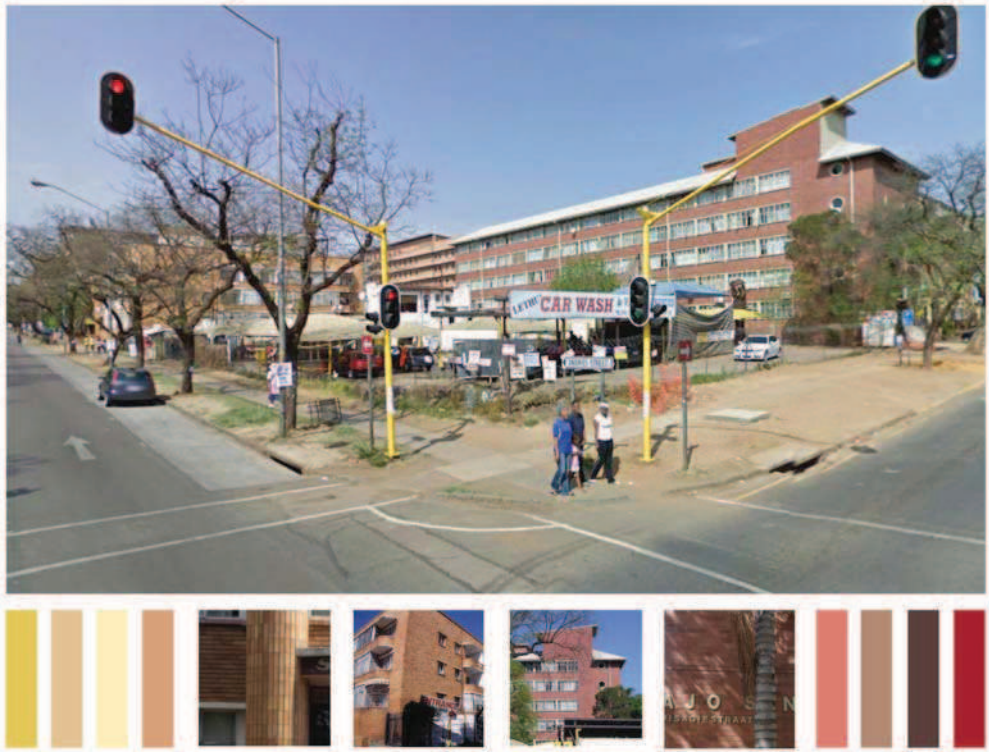
Visual connections between levels allow for passive surveillance due to the presence of people. Library and computer spaces need this passive surveillance and omnipresence of eyes as an additional security measure.

The community gathering spaces that are provided within the Opportunity Platform have two different intentions. Resources and gathering spaces; with the possibility of play in both components. The programme had the following implications:

- Visual links between levels a passive surveillance
- Ease of navigating between different components of the programme\
- The grouping of services
- Separation between community gathering spaces and library component, without physical barrier by placement of spaces
- Square forms work best for book stack layouts and are also optimal for group gathering spaces.

6.4.5 Prevalent colours and materials

Stellenberg apartments to the south of the site are built of face brick in a yellow-brown shade, whilst the A.J.O. Centre is in a dark deep red-brown colour. These colours are shown in Illustration 6.10, and serve as informant for the colour choices of the Eastern to Northern facade screen. These colours are used and red, orange and yellow are introduced.



illus. 6.10 The prevalent colours; Colour analysis of Stellenberg Apartments and A.J.O. Centre

6.4.6 Views from the site as generator

The Burger's Park Precinct is located in an area that is surrounded by many visual links, places of interest and landmark buildings. The site has the opportunity to make use of these as an influence on the organisation and quality of interior functions and space.
The Illustration below indicates the views possible from the site. Some of the elements in view are only visible or appreciable from upper floors, due to adjacent buildings. Views that were optimised are B.J. Vorster Tower, The Wesley Methodist Church and the lush trees of Burgers' Park.

The presence of the Wesley Methodist Church greatly influences the observer from the proposed site, given the omnipresence of the "hand of God" on the roof of the church building (le Roux, 1990, 127).

The view towards the B.J Vorster Tower is utilised by placing and orientating reading spaces towards it. The presence of objects within view, during reading, makes for good eye distraction and helps eye fatigue and concentration span.
From the roof the natural ridges that surround Pretoria can be observed, and to south, the Voortrekker Monument is visible on the ridge (Illus. 6.11a,b,c & d).

illus. 6.11 Possible views from the site

6.5 Design response process

[Intent, description, problems]

6.5.1 Initial design response

Model 1

Intent:

- Iconic volume
- Respect to adjacent built fabric
- Sidewalk widening
- Importance of stair and lift combination as vertical circulation method
- Service grouping

Result:

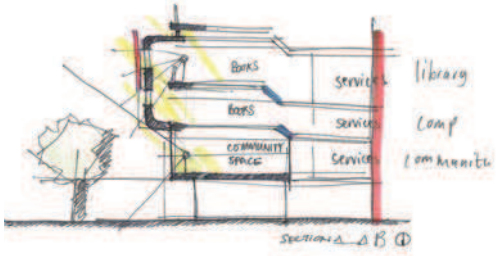
The first response after observations was to address the need for a pedestrian friendly sidewalk and street crossings over Andries and Pretorius Street. Along with this was the inclusion of the new Gautrain bus stop and the general need for more space on the corner for people waiting to cross the road.

The volumetric proposal was that of a box on a pedestal, which allows for the required additional space on the corner. This volumetric approach firstly addressed the undefined urban edge by filling the void. Secondly it provided a recognisable, iconic volume that stands out within its context; appropriate given the public nature and importance of the Opportunity Platform within the precinct.

The proposed volume responds to existing built fabric and respects the building heights within close proximity to the site; It also investigates the use of colour.

This investigation placed importance on vertical circulation (lift within stairs) as the only form of circulation; a result of the unified design approach. This is expressed on the exterior facade as a single vertical element. Access into the building is from ground floor, on the street corner, into the lobby space. Community spaces placed on first floor to overlook activities below on the street corner. Book and computer repositories are located on upper levels.

illus. 6.12a Model 1. Volumetric model



illus. 6.12a Model 1. Section

illus. 6.12b Model 1. floor plans

Model 2

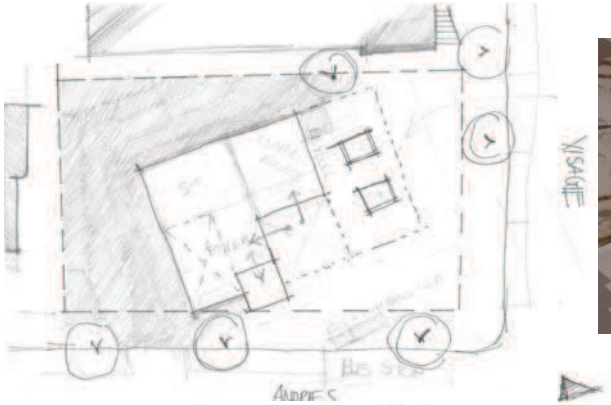
Result:

This interpretation of the first response reassesses the placing of the box and investigates the possibility of introducing a twisted placement. The twisted geometry orientates towards Burger's Park and generates additional urban surface in the form of public realm as an outside foyer to the entrance of the building. This foyer space increases space for pedestrians, the bus stop and for cutting the corner.

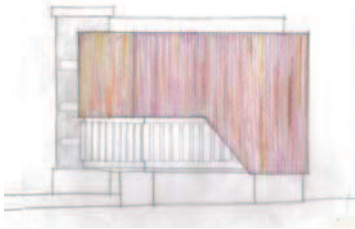
This model introduces a further exploration of the vertical circulation expression on the facade. An atrium-like space is also placed on the eastern facade and directly faces the street.

Problems:

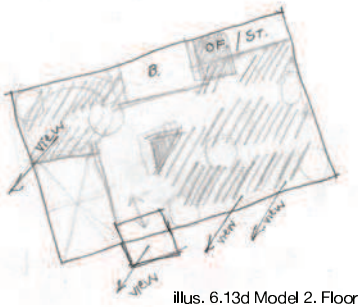
- Set back corner could result in inadequate corner definition
- Unprogrammed podium level creates dead street interface, even though sidewalk is increased.
- Box approach is problematic in plan and results in a deep floor plate creating darker interior spaces that are difficult to light and ventilate naturally, even though atrium-like space is present.
- Twisted geometry creates awkward space on western and southern facades, therefore the spaces become recluse.
- Twisted geometry seems arbitrary and unjustified (even though justified).
- Missed opportunity from inclusive design point, very little exploration other than vertical circulation.
- Lack of ordering system



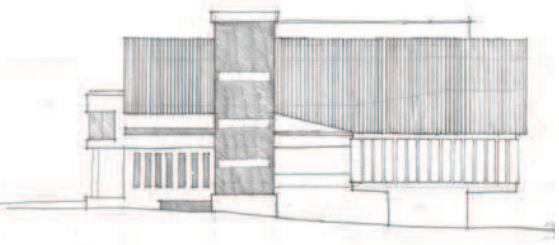
illus. 6.13b Model 2. Volumetric model



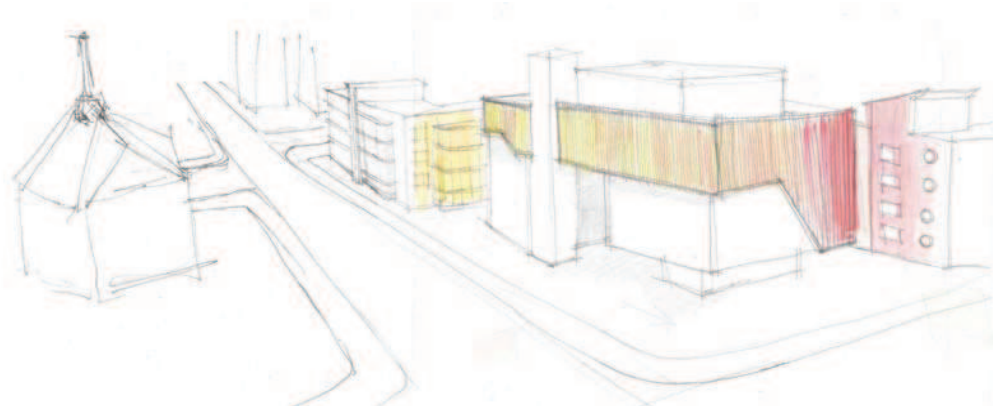
illus. 6.13c Model 2. North Elevation



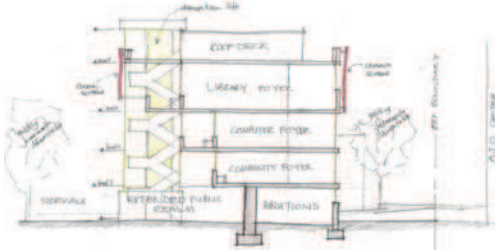
illus. 6.13d Model 2. Floor plans



illus. 6.13e Model 2. East Elevation



illus. 6.13a Model 2. Corner approach



illus. 6.13e Model 2. Section

6.5.2 Revised response

Model 3

Intent:

- Re-evaluate the model 1 and 2 sidewalk responses and evaluate approach to make a better urban edge connecting building to surroundings.
- Addressing placement of main community gathering space on first floor opening to balcony/ramp extension.
- Explore ramp as extension of sidewalk
- Usable space under ramp extension
- Screen element reconsidered

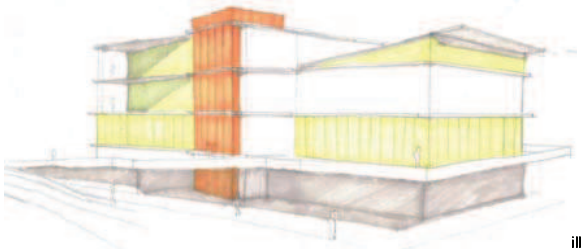
Result:

Takes model 1 and introduces extension of sidewalk by introduction of external ramp to connect with first level. The investigation focuses on the addition of an external ramp to existing ideas. The ramp addition provides outside space that can be used as extension of space or vantage point over street activities. Removal of twisted geometry.

The external ramp as extension of sidewalk gives new opportunities on and below it. This should be explored. Ramp allows access to first floor without the use of stairs. Services are reorganised but remain grouped on the southern facade.

Problems:

- Screen element needed, contextualisation lost
- Top floors are cut off from lower levels.
- Copy paste floor plans
- No links (physical and visual) other than vertical circulation tower
- Ground floor still lifeless and not reacting to street edge, gathering space, to move to ground floor.
- Oversized foyers and lobbies



illus. 6.14a Model 3. Corner approach

illus. 6.14b Model 3. Floor plans

illus. 6.13c Model 3. Volumetric model

6.5.3 Response 4

Model 4

Intent:

- Iconic facade manifested in traditional corner approach
- Respect and response to existing built fabric and introduction of contextualising by addressing the approach to screen (colour use)
- Sidewalk widening and extension thereof to the first floor
- Specific focus on inclusive design during urban response
- Specific focus on volumetric response together with layout and circulation within building with inclusive design as generator.
- Take traditional corner response and investigates the specific site and problems that need to be addressed.
- Additional breathing space between A.J.O Centre and the proposed building, with the possibility of private space away from street.
- Exclusively inclusive approach to all design decisions

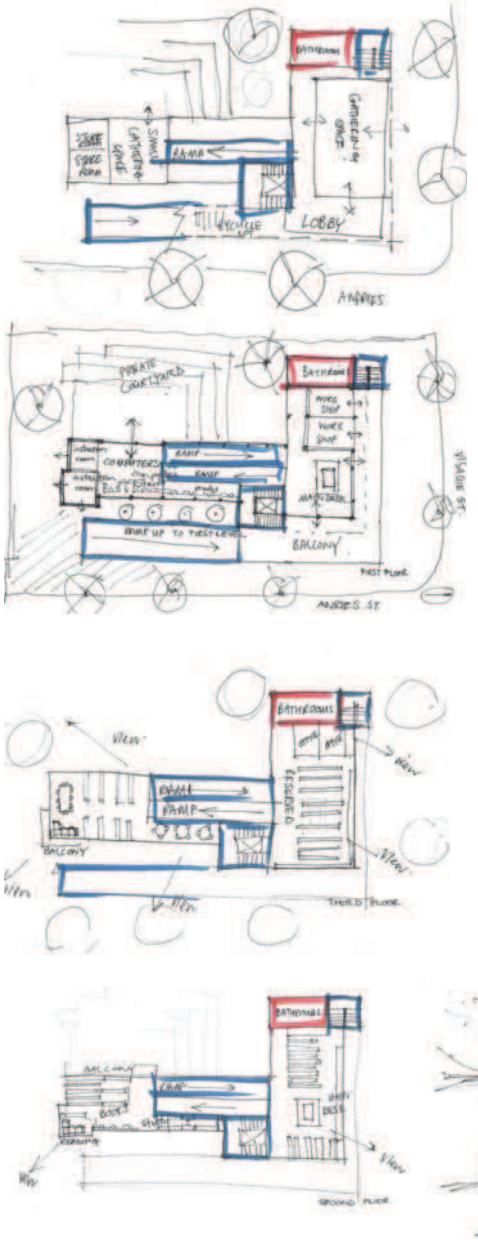
Result:

Model 4 presents a responsive and iconic corner volume that also improves the sidewalk and completes the edge conditions. This model explores the ramp as design component. The ramp allows for interaction on different levels by awareness of movement and actions taking place on other levels and means of circulation. The ramp as circulation method is a slower means of movement, which enables the user of the ramp to focus some of his or her attention on the surroundings and views that are possible from the ramp. The ramps are used in the design for this specific purpose, in order to encourage users to be aware of the surroundings by strategic placement of the ramp(s).

Ramps as primary vertical circulation method are a result of inclusive design principle. This model also explores the ramp with function possibilities, by introducing level floor surfaces of the circulation ramp and programming these spaces. This enables the ramp to be more than just a form of circulation.

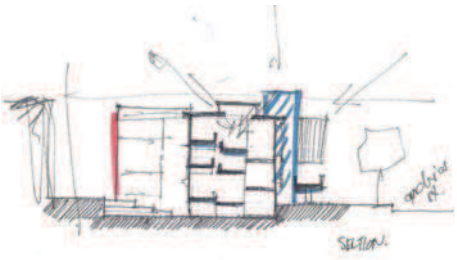
Problems:

- External ramp not fully explored
- Private courtyard needs to be designed
- Corner and colour approach is manifesting but can be further improved.
- Internal ramps still problematic
- Lack of ordering system

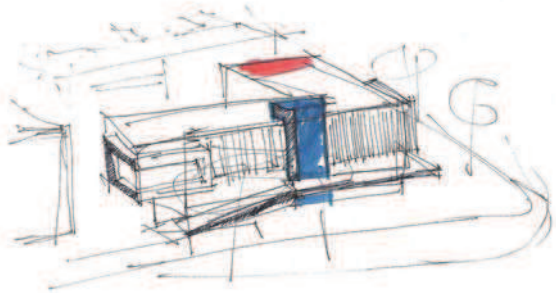


illus. 6.15a Model 4. Floor plans

illus. 6.15b Model 4. Volumetric model



illus. 6.15c Model 4. Section



illus. 6.15d Model 4. Perspective

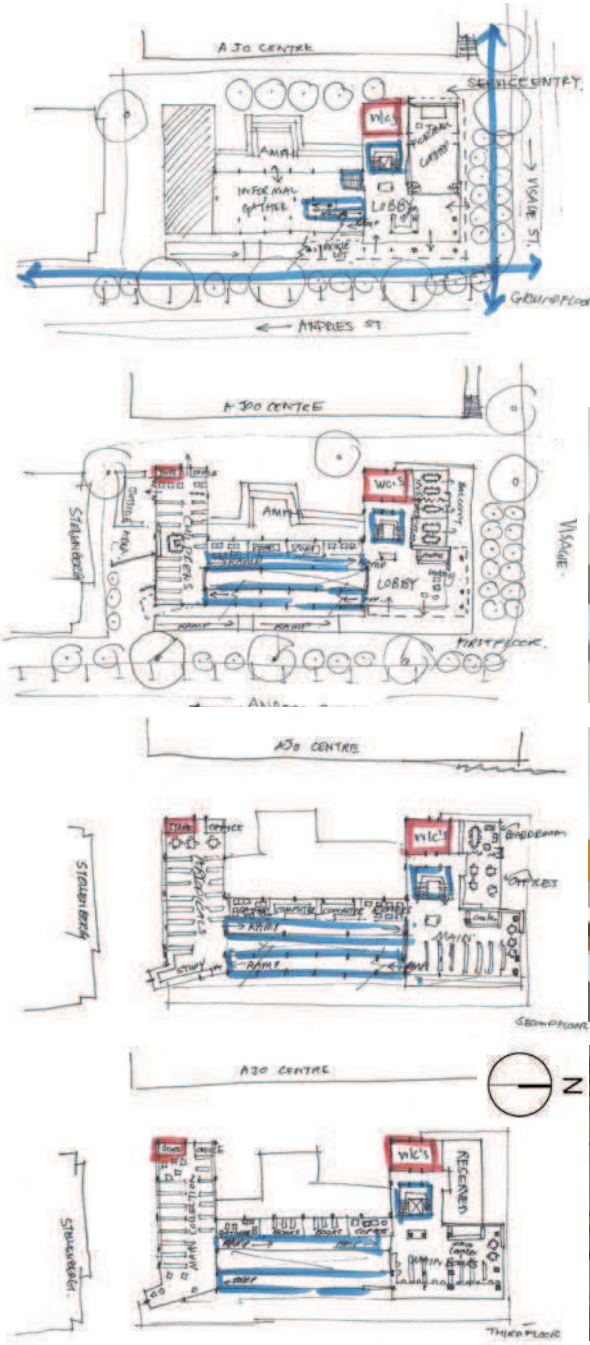
6.5.4 Response 5

Model 5a & 5b

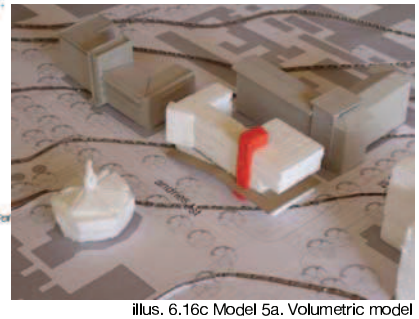
Intent:

- Courtyard typology matching typical response in precinct
- Traditional corner approach
- Narrow building volume allows for natural lighting and ventilation
- 'Wings' create additional northern facade
- Courtyard can be used as semi-public/semi-private space which links to community gathering space on ground floor
- Longer building envelope on eastern facade allows external ramp slope to be gradual and have adequate (oversized) landings.
- Facade line stepped back from adjacent facade lines to increase the sidewalk width to address space limitation on sidewalk
- Ramp is extension of sidewalk when walking northbound and extends to wrap around the corner and transform into a balcony that acts as receiving space and vantage point to activities below and beyond.
- Building identification and signage
- Specific sizing with inclusive design as generator
- Material evaluation with inclusive design as generator
- Exclusively inclusive approach to all decisions in more critical detail
- All ramp design considerations are continued from model 4, but refined.
- Assessment of design for inclusivity
- Model 5a circulation tower visible from street and competes with the ramps.
- Model 5b circulation that is emphasized is the ramp circulation and stair

illus. 6.16a Model 5. Corner approach



illus. 6.16b Model 5b. Floor plans



illus. 6.16c Model 5a. Volumetric model

illus. 6.16d Model 5a. Sectional perspective

illus. 6.16e Model 5a. corner approach

illus. 6.16f Model 5b. Volumetric model

Result:
Ramp circulation is more refined and slope adjusted accordingly, to create a gradient that is as flat as possible for easy movement. Programmed spaces along ramp design are more refined optimising space and views towards private courtyard (illus. 6.16g).

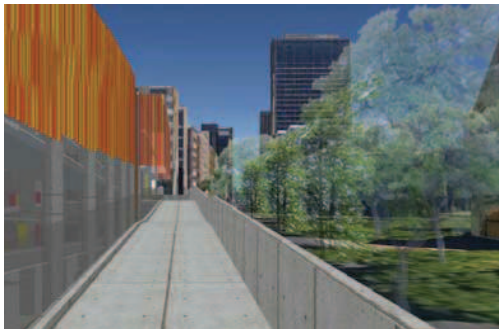
The exploration of the screen as facade treatment allows for the contextualisation and playfulness that the site requires. The screen has a dual function; the main function is the sun control it provides to the curtain wall on the eastern facade. The secondary function is the contribution to the identity of the facade.

Signage placement and typeface on face brick walls were tested and resulted in legible building identification (illus. 16.6k).

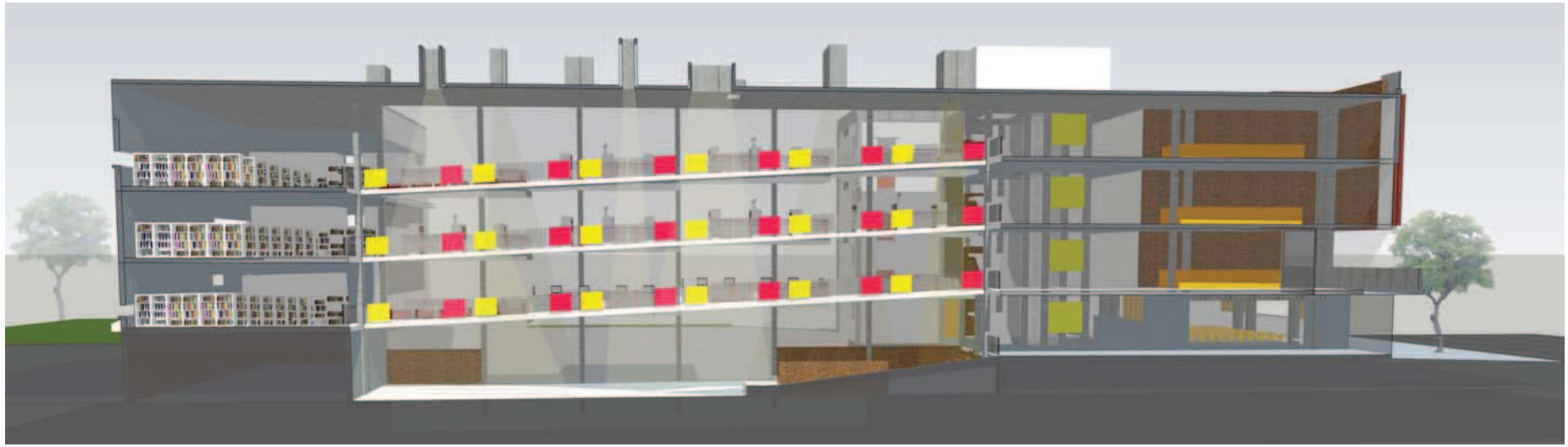
Further testing of renders with a 'visual impairment simulator' must be done to check final design and see if product is inclusive.

Skylights allow ample natural light into the atrium space and along with eastern facade creates patterned light throughout the entire space (illus. 6.16k).


illus. 6.16d Model 5b. Interior view of lobby


illus. 6.16e Model 5b. Northwards up the ramp

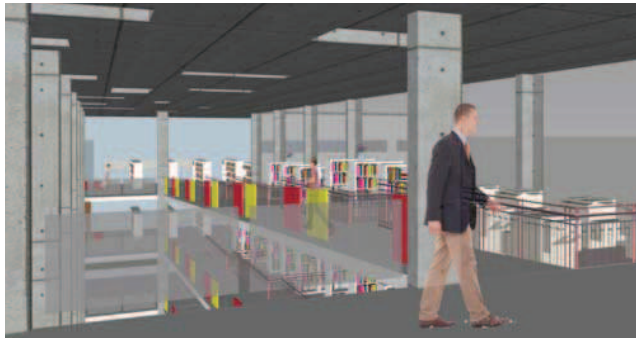

illus. 6.16f Model 5b. View from the reading space, B.J. Vorster Tower in the distance


illus. 6.16g Model 5b. Longitudinal section

Problems:

- Ordering system still lacking
- Courtyard design to be reconsidered, possible seating in terrace formation
- Concrete structure and slab edges not designed/explored
- Roof design not optimal/forgotten
- Internal layouts have problem areas, possible resizing of structure and spaces necessary.
- Structure to be investigated
- Store room and kitchen facilities are not sufficient
- Instruction spaces and office layout to be reconsidered
- Seating on corner and below ramp to be investigated
- Bicycle lot not functioning
- Balustrade on ramps, interior and exterior, to be revisited with PARTI diagram in mind
- Lobby signage intrusive and lobby needs security mechanism
- Balustrade too solid and prevents visual connections

illus. 6.16h Model 5b. Southwards down the ramp



illus. 6.16i Model 5b. Interior view over atrium

illus. 6.16j Model 5b. Sidewalk interface

illus. 6.16k Model 5b. East Elevation

design

final design proposal

7

design

Design is an opportunity to continue telling the story, not just to sum everything up

Tate Linden (COD, 2011)

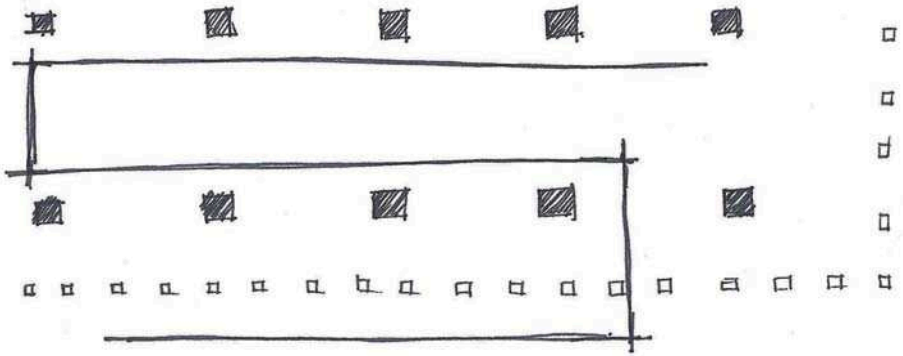
7.1 Introduction

This chapter is a detailed description of the final design proposal. It is structured around plan, sections, elevations and other sketches that best explain all considerations.

7.2 PARTI diagram

The revised PARTI diagram (illus. 7.1) encapsulates the essence of the building, which consists of three main elements:

- The rhythm by means of the columns
- Movement, by the ramp that extends through the building, forming the continuous link and floor plate combination
- The enfolding of the screen element that contextualises the building



illus. 7.1 Revised PARTI diagram

7.3 Inclusive Design checker

The design approach is an exclusively inclusive approach. This approach has resulted in the scrutinising of all design decisions. These decisions were constantly evaluated and changed to conform to this approach. The design decisions were evaluated against the understanding and knowledge that is illustrated in table 7.1. These pictograms will be used to indicate the areas, elements and decisions that have inclusive merit on the design drawings.

The pictograms indicated in table 7.1 will be used to indicated elements and design decisions that have been made, evaluated and informed with inclusive design in mind.

The inclusive design responses, as listed in table 7.1, are a result of literature reviews as discussed in Chapter 2 and 3. The aim of this table is to illustrate to the reader the five categories of disabilities and impairments that have been identified, it also lists the difficulties that each category experiences and the design decisions that can assist in alleviating these challenges.

elderly
ageing

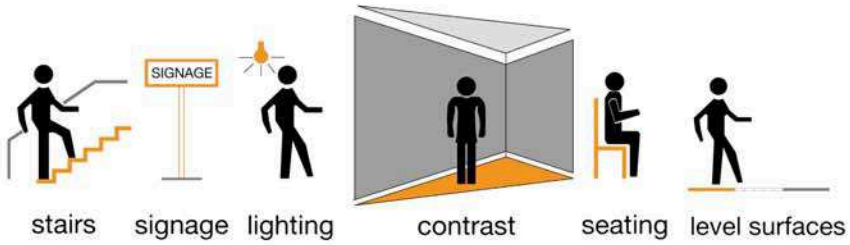
wheelchair
mobility impaired

pregnant
mother and child

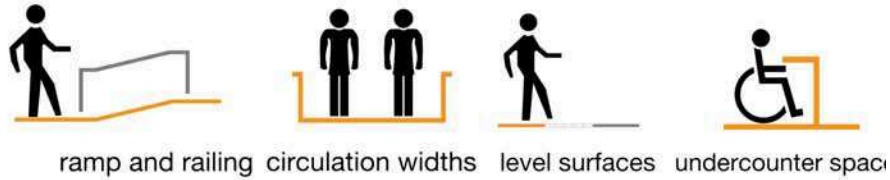
blind
visually impaired

deaf
hard of hearing

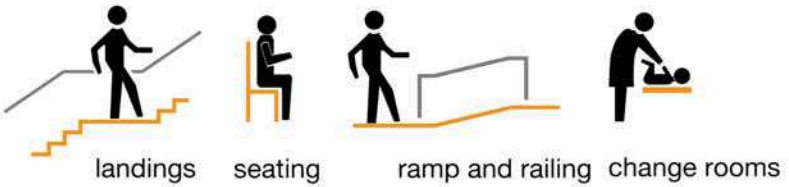
monotone environments
inconsistent stairs/ ramps
overlit areas
lack of legible signage
intrusive elements, slippery surfaces



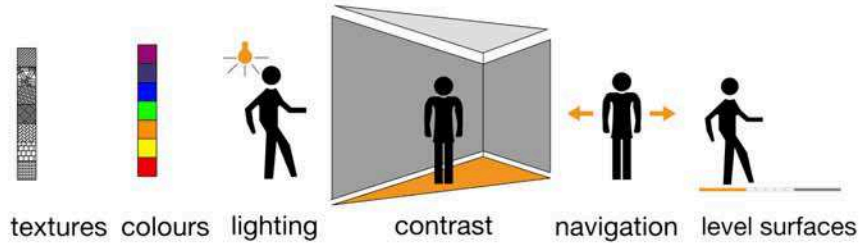
steap and long ramp lengths
stairs and step environments
cannot reach high up
uneven surfaces and bumps
intrusive elements



steap and long ramp lengths
stairs and step environments
complicated layout
lack of adequate landings
intrusive elements



overlit areas
stairs and step environments
complicated layout
lack of adequate landings
intrusive elements, slippery surfaces



noisy areas
complicated layout
difficulty in emergency situations
uneven surfaces and bumps
intrusive elements

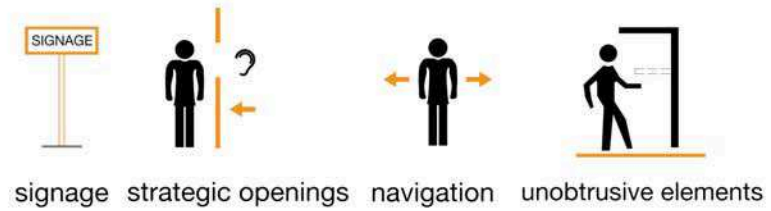


table 7.1 Inclusive Design responses with the 5 categories of disability

7.4 Plans

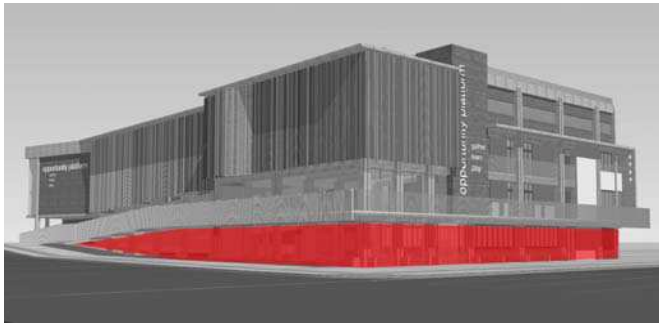
7.4.1 Ground floor

LIGHT YELLOW

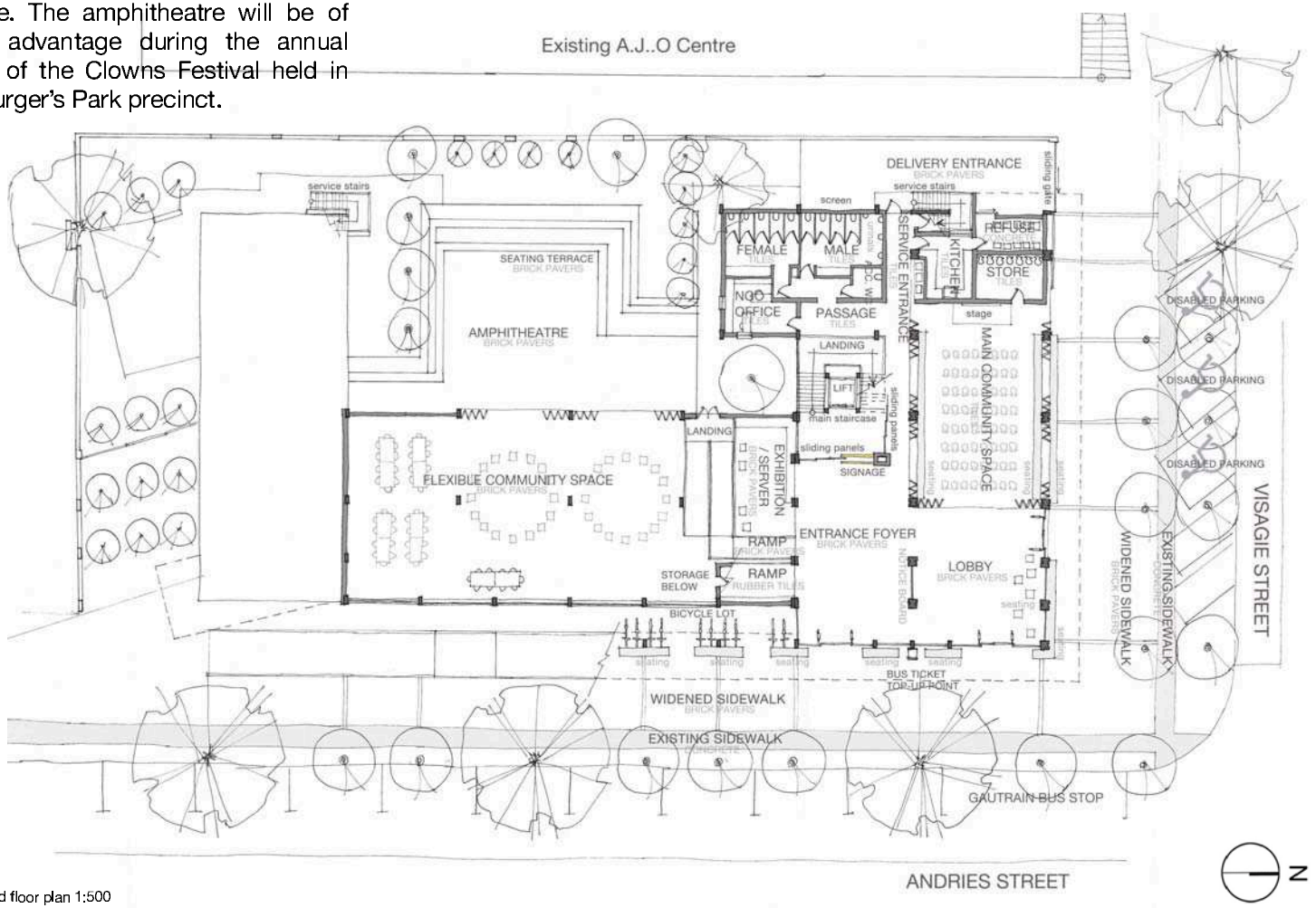
Ramp widths and gradients were determined by criteria set for easy movement by the elderly and people in wheelchairs. Balustrade positions and handrail heights are according to suggested norms. All circulation widths and door widths were determined according to these norms. Signage placement are in an obvious and visible position for easy navigation, with clear typeface and high contrast. Informal seating is provided in lobby and also along the building envelope in the shelter of the ramp and balcony above. All thresholds of inside to outside and material changes are sloped and flush to avoid steps. A general notice board is also located in the foyer for public use.

Main community space for formal seated gatherings or performance gatherings, for 80-100 people, is located on this floor, with storage and a kitchen to serve it. The community space is able to open up for people to gather around, and look into and be aware of activities taking place within. The lobby space is extended with an exhibition space (that doubles as a serving counter during functions) that will advertise events and programmes of the Opportunity Platform.

The lower level informal gathering space is unprogrammed and intended for multiple smaller groups to gather for educational interaction. These activities can extended to the amphitheatre. The amphitheatre space is intended as a formal seating arrangement that can accommodate a larger group of people. The amphitheatre will be of great advantage during the annual Feast of the Clowns Festival held in the Burger's Park precinct.



illus. 7.3 Floor legend: Ground floor



illus. 7.2 Ground floor plan 1:500

7.4.2 First floor

YELLOW

The first floor is the result of vertical movement choice that enables users to reach the upper floors by means other than the lift. The ramp extends the sidewalk and leads up to the first floor. This provides an additional inclusive access to the building and serves as a vantage point from which to observe activities below and beyond.

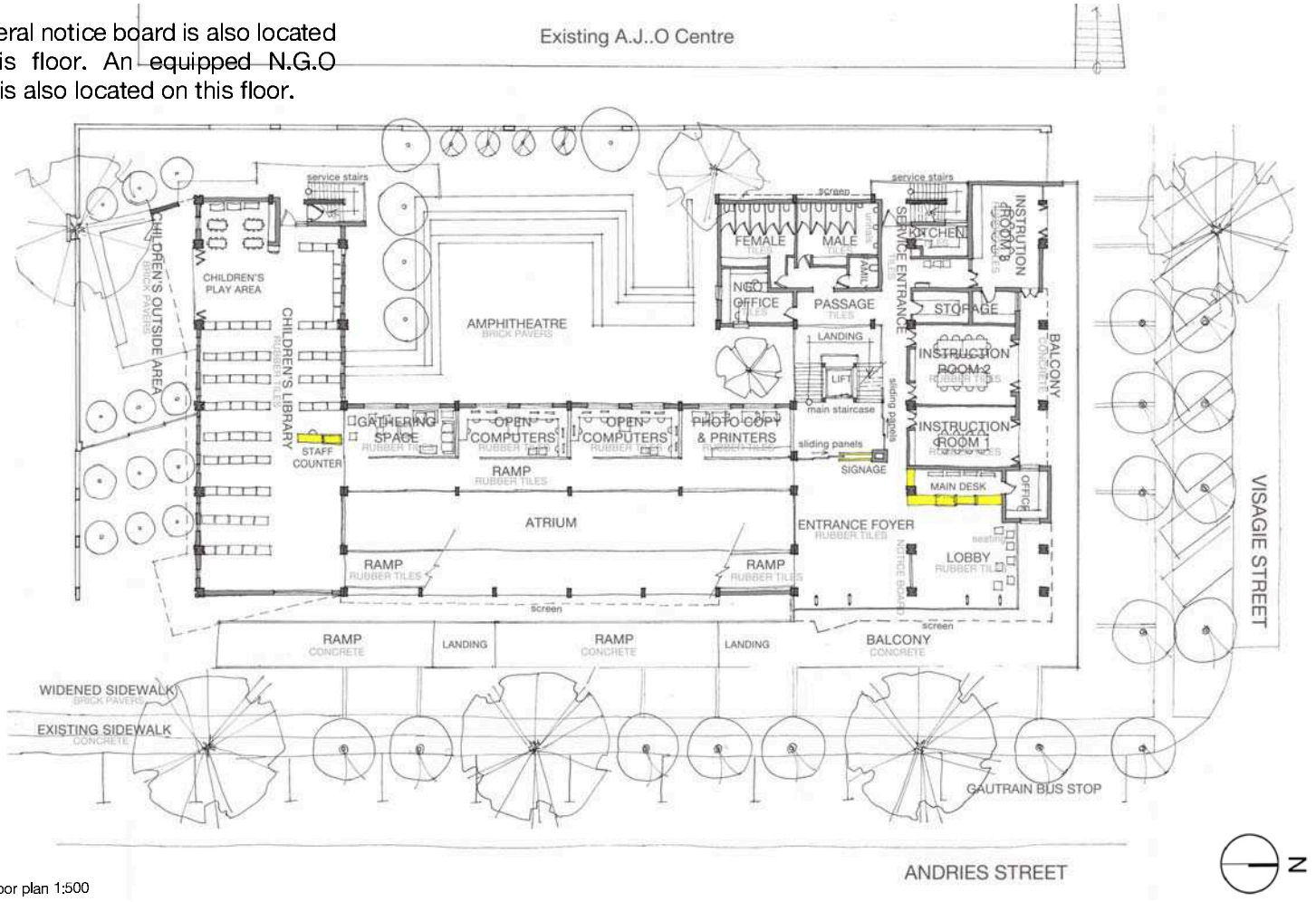
On this level the user is greeted by the main desk in yellow that sits in front of a red face brick wall. The face brick wall is used throughout the design as an indicator, as a place relevance, either signage or presence of staff or an entrance is located at these walls. The instruction rooms for skills development and small group gatherings are positioned in close proximity to the main desk as a means of security and control. These instruction rooms also open up to the balcony space. The lobby has Informal seating.

In the south wing of this level the children's library can be found, which extends to the outside to a play area on the southern periphery of the site. The children's library, as each section, has a counter and staff members dedicated to it. The play area is screened off from the street interface and amphitheatre space by movable screens that can be opened when the building becomes public in community events.

The ramp that connects the north and south wing, houses open computers, a small comfortable gathering space and photocopiers that serve the building. The ramp is placed around a central atrium that connects the floors visually for surveillance and awareness of users and activities.

A general notice board is also located on this floor. An equipped N.G.O office is also located on this floor.

illus. 7.5 Floor legend: First floor



illus. 7.4 First floor plan 1:500

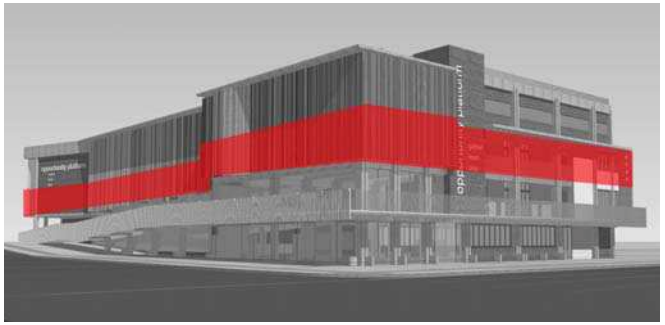
7.4.3 Second floor

ORANGE

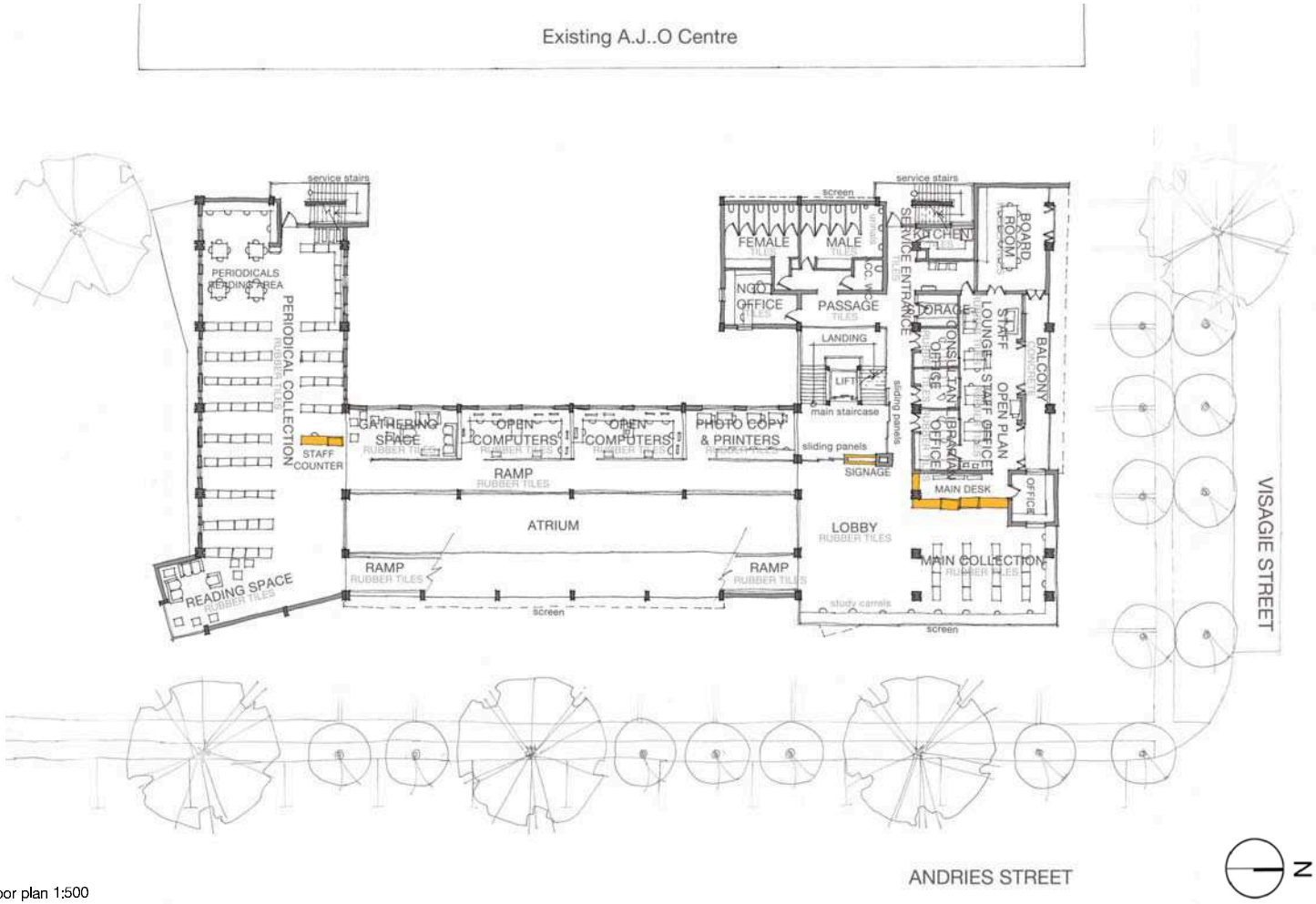
The ramp circulation continues around the central atrium and overlooks the community space below. This floor houses the periodic collection in the south wing, completed with reading space and dedicated counter with staff representative. The ramp connecting the south and north wing houses the additional functions required.

This floors' counter and signage is denoted orange and forms the start of the main library collection in the north wing. The main management offices are also located on the northern side and open up to a sunlit balcony. The staff kitchen, lounge and board room are also located here. An equipped N.G.O office is located on this floor. The main librarian office is also on this level.

This floor also has a reading space on the eastern facade with views towards Burger's Park and the B.J. Vorster Tower.



illus. 7.7 Floor legend: Second floor



illus. 7.6 First floor plan 1:500

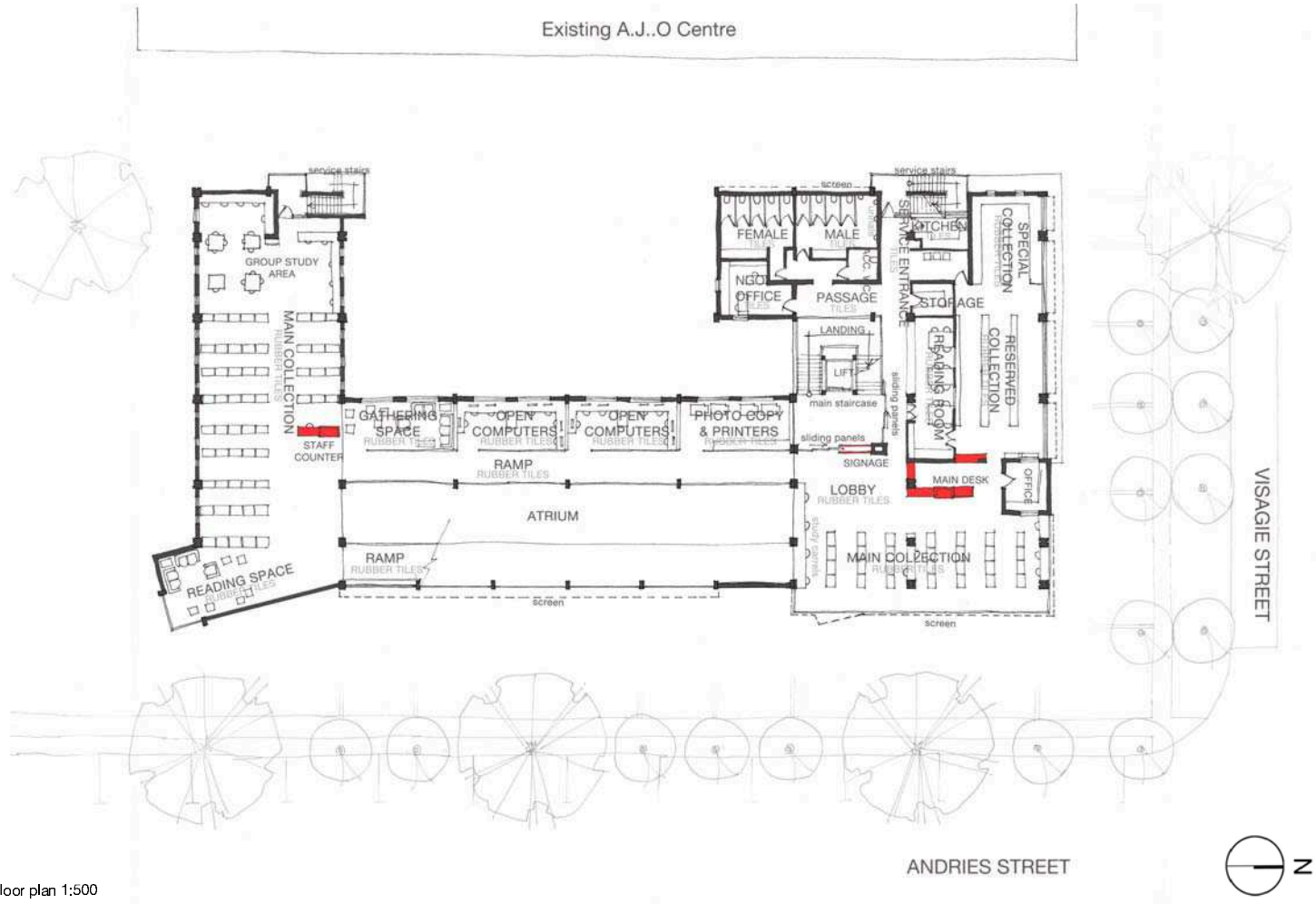
7.4.4 Third floor

RED

The ramp circulation continues around the central atrium and terminates in the north wing of this floor. This floor houses the reserved collection in the north wing, with reading spaces. The remainder of the main collection is on this floor. The ramp connecting the south and north wing houses the additional functions required and quieter study spaces are located throughout this floor.

This floor is denoted by a red counter and signage. The counter on this floor serves the reserved collection as well as the main collection.

illus. 7.9 Floor legend: Third floor



illus. 7.8 Third floor plan 1:500

7.5 Sections

7.5.1 Longitudinal section

This section shows the atrium space and connecting levels. The floor level of the south wing and the north wing acts as the landing for the ramp circulation around the central atrium space. The signage/ balustrade intent is also indicated on this drawing.

7.5.2 Cross section

The section is taken through the atrium space and it is a reflection of the possible visual and physical links between the different floor levels. This section also illustrates the possible links between the Community Gathering space and the amphitheatre in the courtyard.

The Heteropyxis Natalensis (Lavender Tree) trees are also visible in the courtyard along with the Bolusanthus Speciousus Trees (Tree Wisteria; Vanwykshout).

illus. 7.10 Longitudinal section (not to scale)

7.6 Elevations

7.6.1 East elevation

The eastern elevation is the main street facing facade of the building. Composed of mainly the vertical ceramic screen covering the curtain wall, the external ramp and balustrade, combines different scales of rhythm and identity that make up the composition. Large scale signage can be found on a bulky red face brick panel, made up of brick patterns with flush joints. The light boxes on the roof are also visible from this elevation.
The proposed Bolusanthus Speciousus Trees (Tree Wisteria; Vanwykshout) can be observed from this point as part of the design, as they align with columns on this facade, forming part of the rhythm of this facade. The entrance is denoted by the brick panel located at the termination of the ramp.

7.6.2 North elevation

This facade faces the street and has views of the Reserve Bank and ABSA Towers. The facade is wrapped in the extension of the ramp from the eastern side, filled in with plastered wall finish and a large scale community mosaic artwork. The vertical brick panel, constructed the same as the brick work on the eastern elevation, is a reflection of the interior, as this indicates where the main counters are located in the building. This brick work is reflected on the interior as the back drop of the main counter.

illus. 7.11 North elevation (not to scale)

illus. 7.12 East elevation (not to scale)

7.7 Perspectives

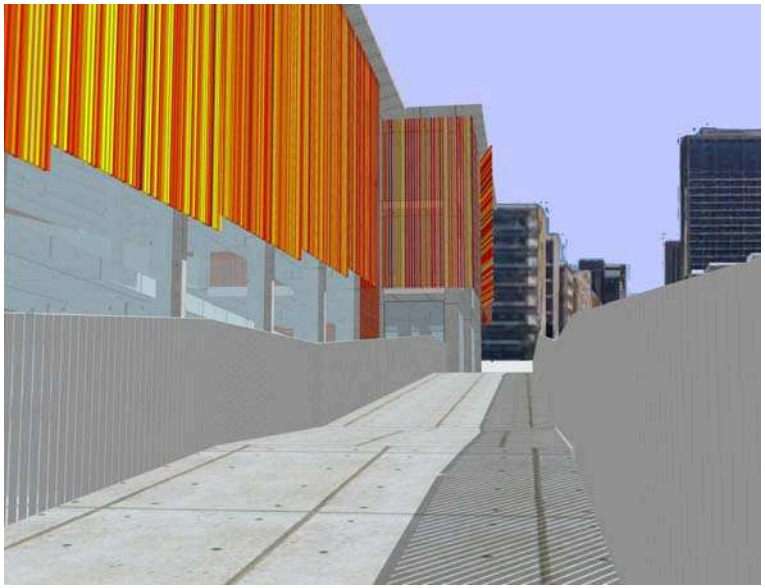
7.7.1 Corner approach

This approach is a view that will be seen by pedestrians coming from the CBD and also by vehicle users using the southbound one way of Andries Street. This approach reveals the screen, the external ramp, the community artwork, the open ground level (which allows you to see into the main community gathering space), and large signage located on the two brick panels visible from this point. Also the new Bolusanthus Speciousus Trees (Tree Wisteria; Vanwykshout) can be seen as part of the design and rhythm of the facade.

illus. 7.13 Southern approach

7.7.2 Southern approach

The approach sees the extension of the sidewalk upwards to the first level, with the Wesley Methodist church framing the other side of the street. This approach also reveals views into buildings on the eastern side, into the atrium-and-ramp volume.



illus. 7.14 Northern approach

7.7.3 Up the ramp

The ramp as an extension of sidewalk space (public realm) becomes a vantage point as you move upwards. The ramp extends to become a flat balcony space which is designed to act as gathering and meeting point. The ramp is also generously sized and can accommodate a random gathering of people.

illus. 7.15 Under the ramp

illus. 7.16 Sketch showing Corner with screen

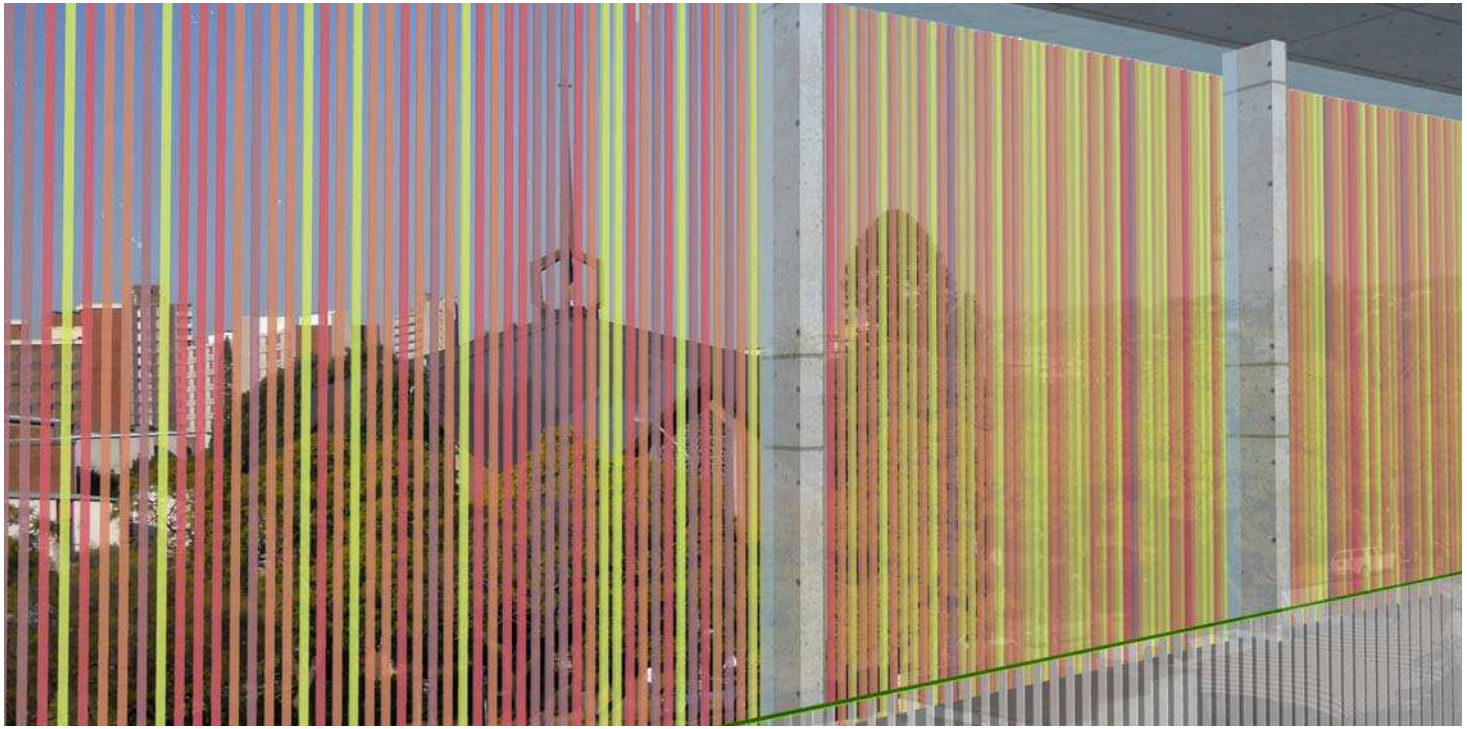
7.8 Interior

7.8.1 View from reading space towards Burger's Park and B.J. Vorster Tower

The view towards the B.J Vorster Tower is utilised by placing and orientating reading spaces towards it. The presence of objects within view, during reading, makes for good eye distraction and helps for eye fatigue and concentration span.

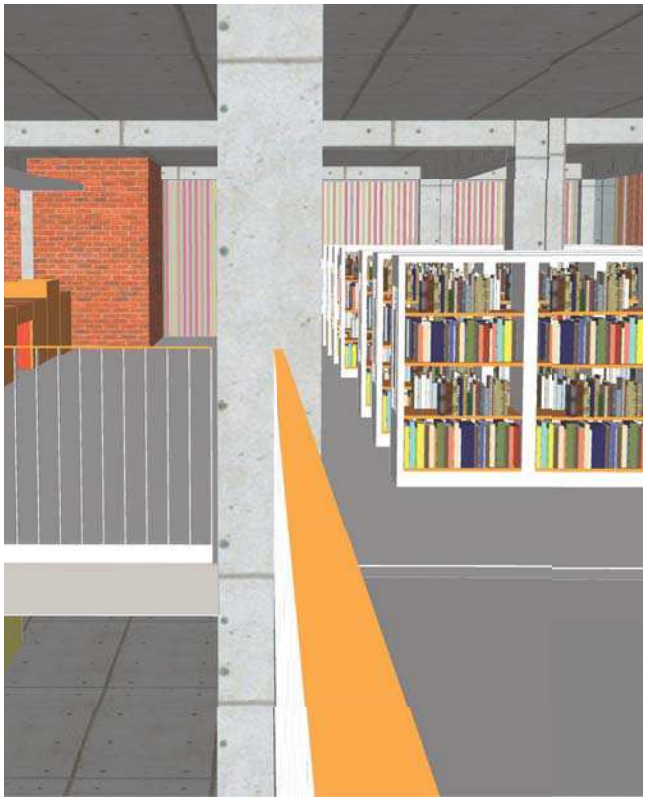
7.8.2 View towards Wesley church

This is an intentional directional view when using the ramp on the eastern edge of the building. The rhythm of the structure and screen filters the omni-presence of the church building across the street.

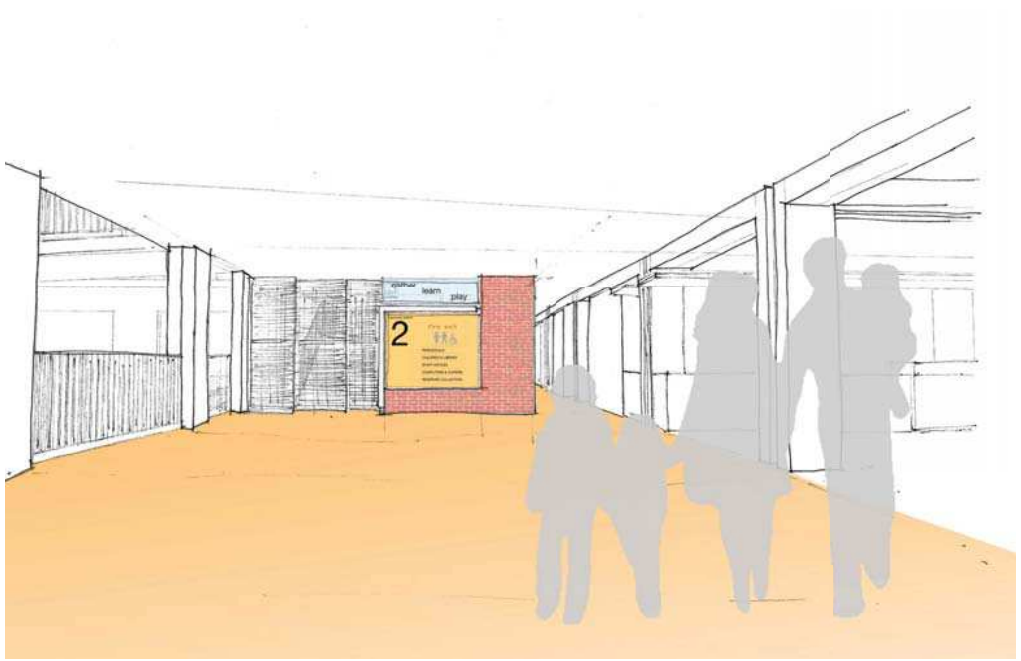


illus. 7.17 View towards Wesley Methodist Church

illus. 7.18 View towards B.J. Vorster Tower from the reading room

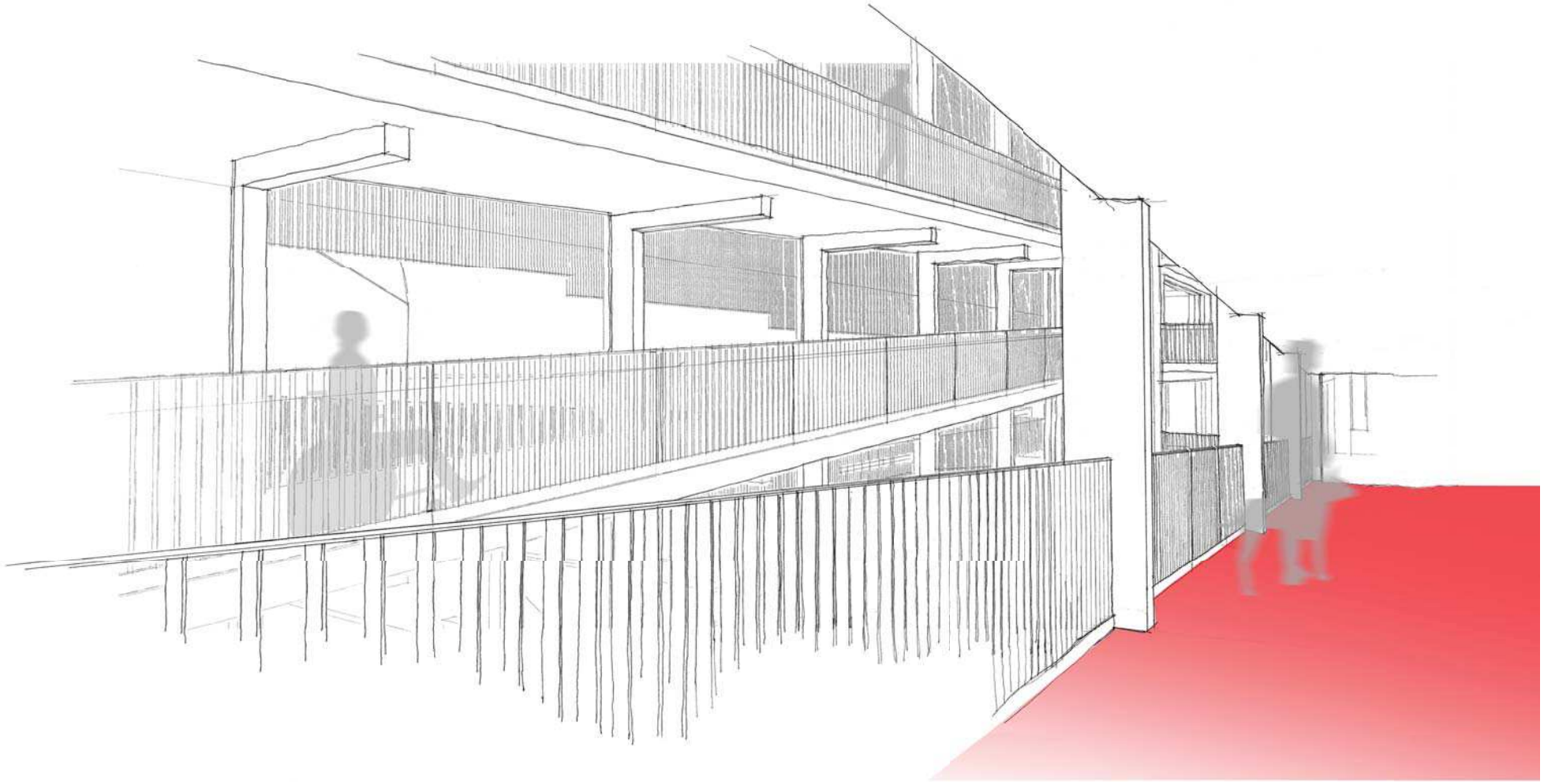


illus. 7.19 Interior view of stacks



illus. 7.20 Lobby signage

illus. 7.21 North wing service staircase and delivery entrance



illus. 7.22 View over atrium from west

illus. 7.23 Sketch showing approach from the south; Burger's Park side

illus. 7.24 Sketch showing atrium with colour ceramic screen through eastern fenestration

illus. 7.25 Sketch of ramp and atrium with filtered light from skylights

technical investigation

design resolution and technical detailing of the proposal

8

technical investigation

8.1 Introduction

This chapter documents the technical resolution of the design.

8.2 Structure and masonry infill

The structure system used is in situ cast reinforced concrete.

Concrete floor and beam sizing:

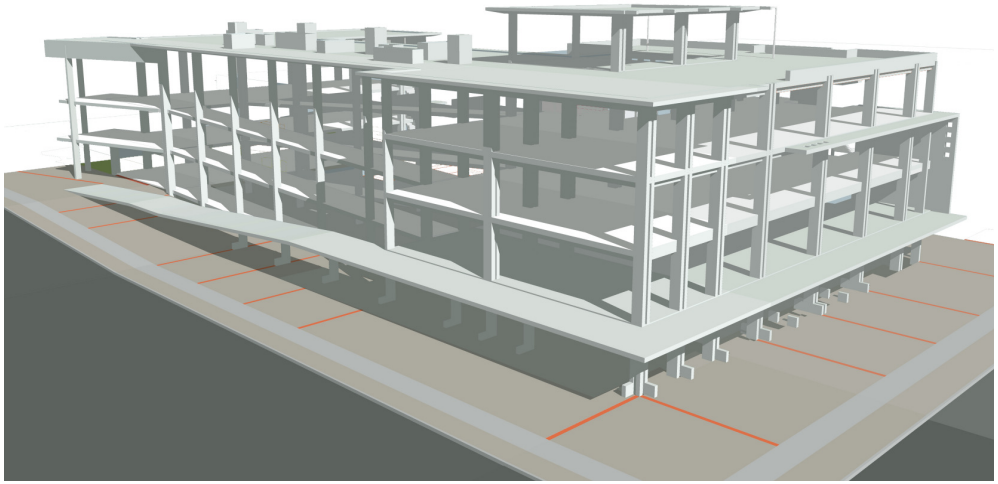
Concrete column width sizing (type1)
Column width = H/SR
=3000/15
= 200mm minimum dimension
Type 1 column size used 520mm by 200mm
Concrete column width sizing (type2)

Column width = H/SR
=3000/15
= 200mm minimum dimension
Type column size used 520mm by 400mm with 80mm recesses.

Concrete slab thickness sizing (type1)
Column width = L/SR
=8000/30
= 270mm minimum thickness
Slab to be over design with additional loads due to additional book loads ([personal communication with structural engineer], von Geiso, 2011).
Floor thickness used 255mm with 255mm downstand beam, total thickness is 510mm.

The infill is face brick masonry units, Firelight Satin from Corobrik. All brick work to be built with wall hangers according to the drawings, as per engineer specification .

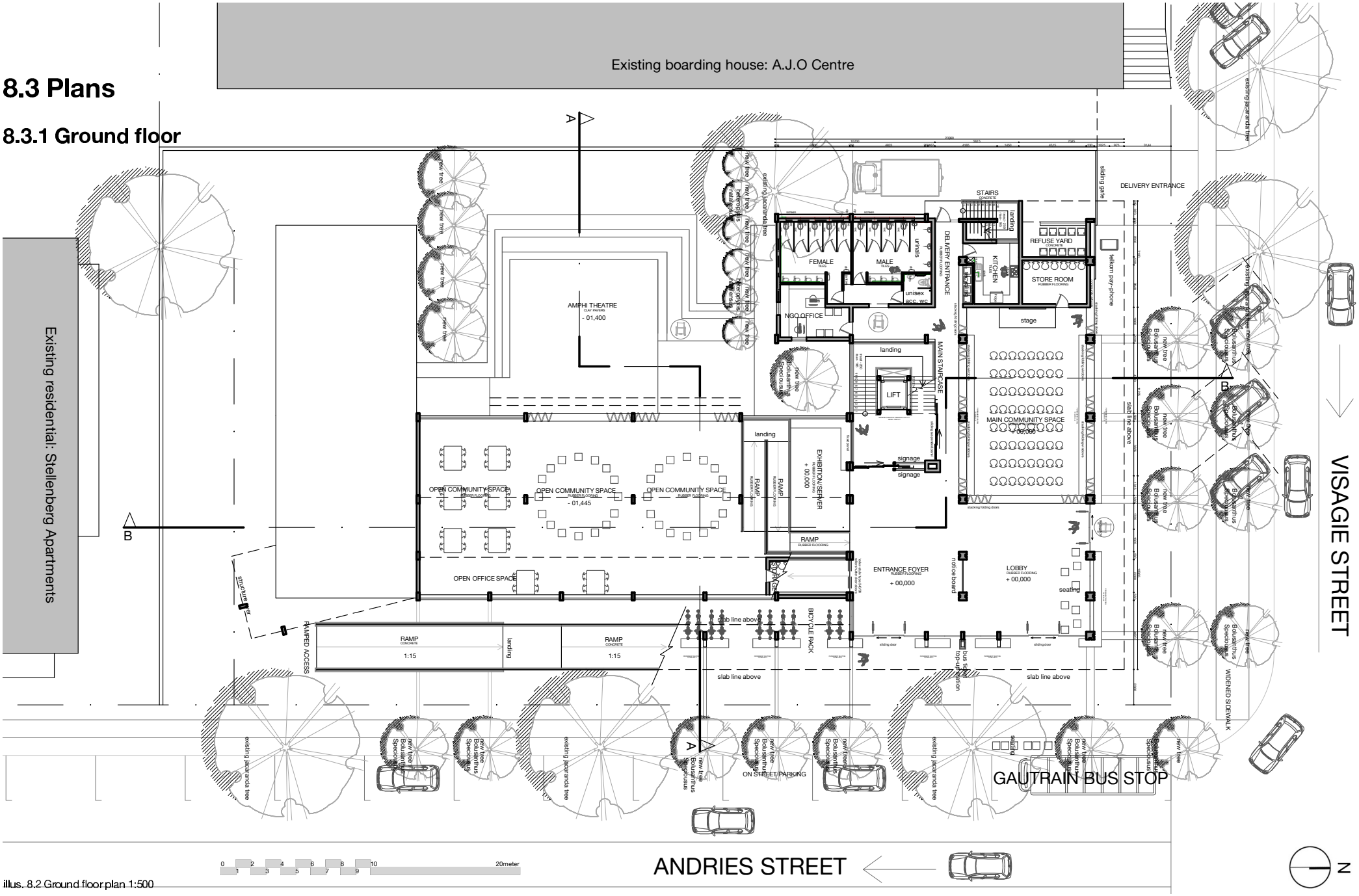
Brick wall slenderness ratio = H/t
= 3000/230
= 13
Brick wall is adequate, and will have additional support due to wall hangers.



illus. 8.1 Reinforced concrete structure

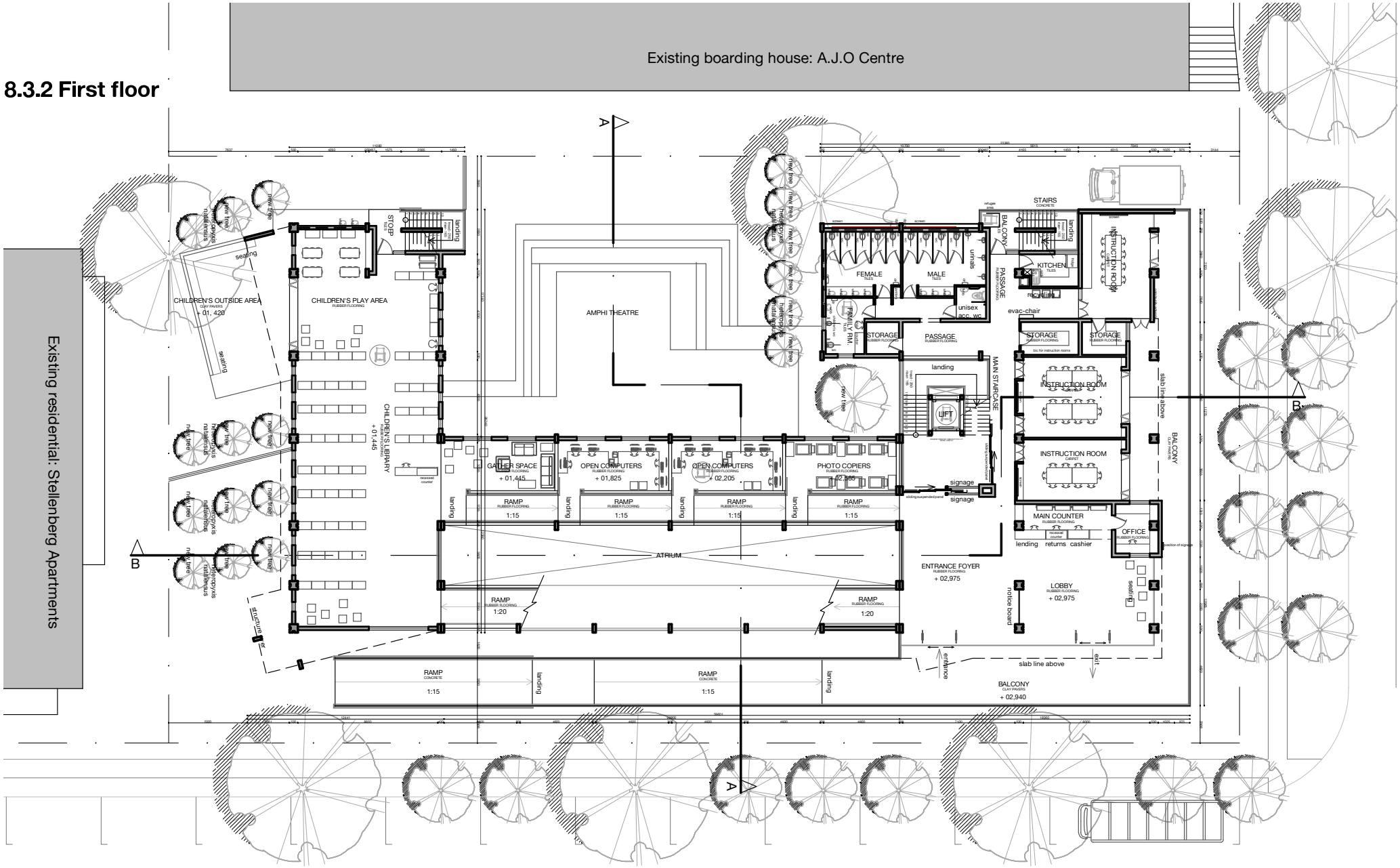
8.3 Plans

8.3.1 Ground floor



illus. 8.2 Ground floor plan 1:500

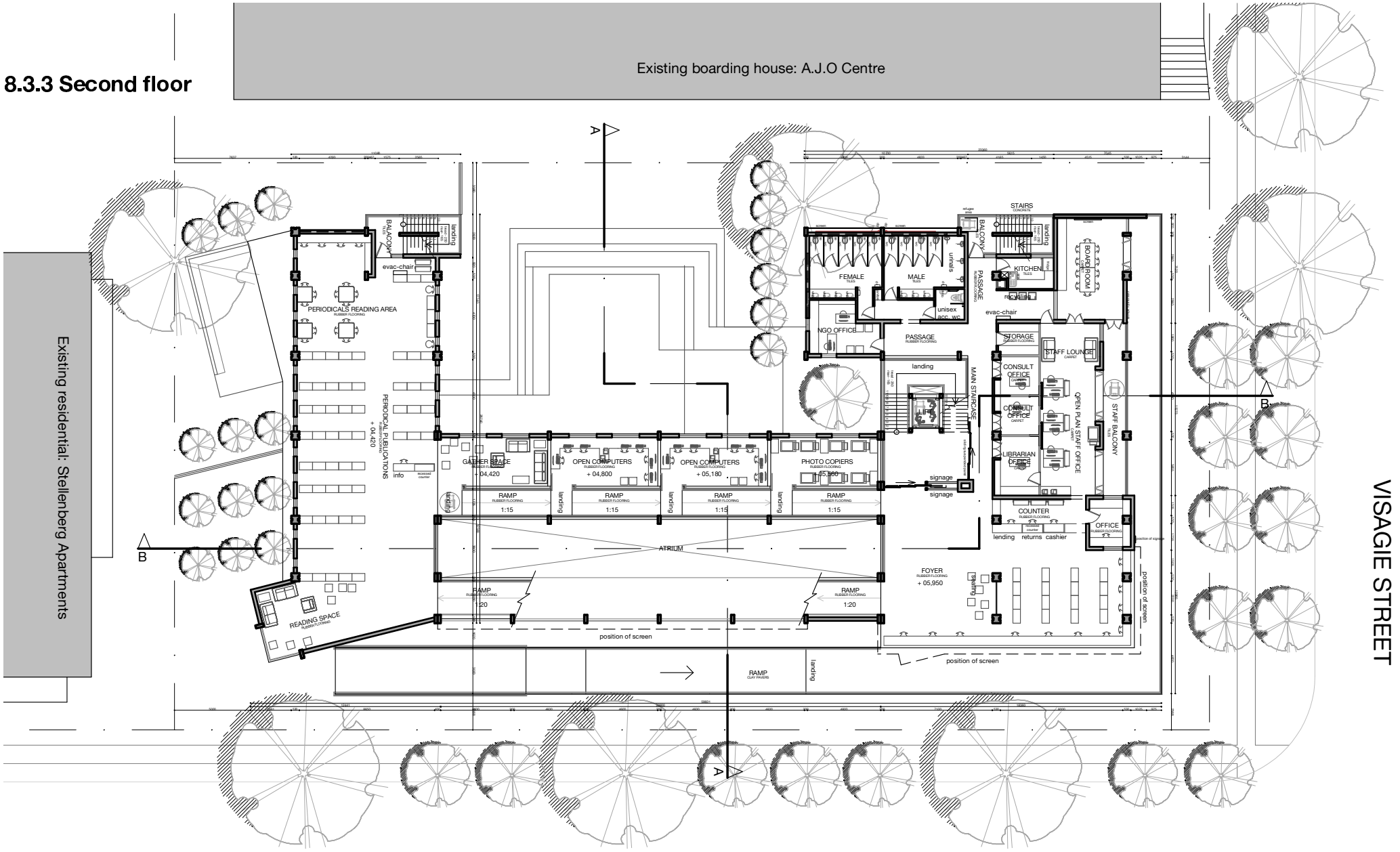
8.3.2 First floor



illus. 8.3 First floor plan 1:500

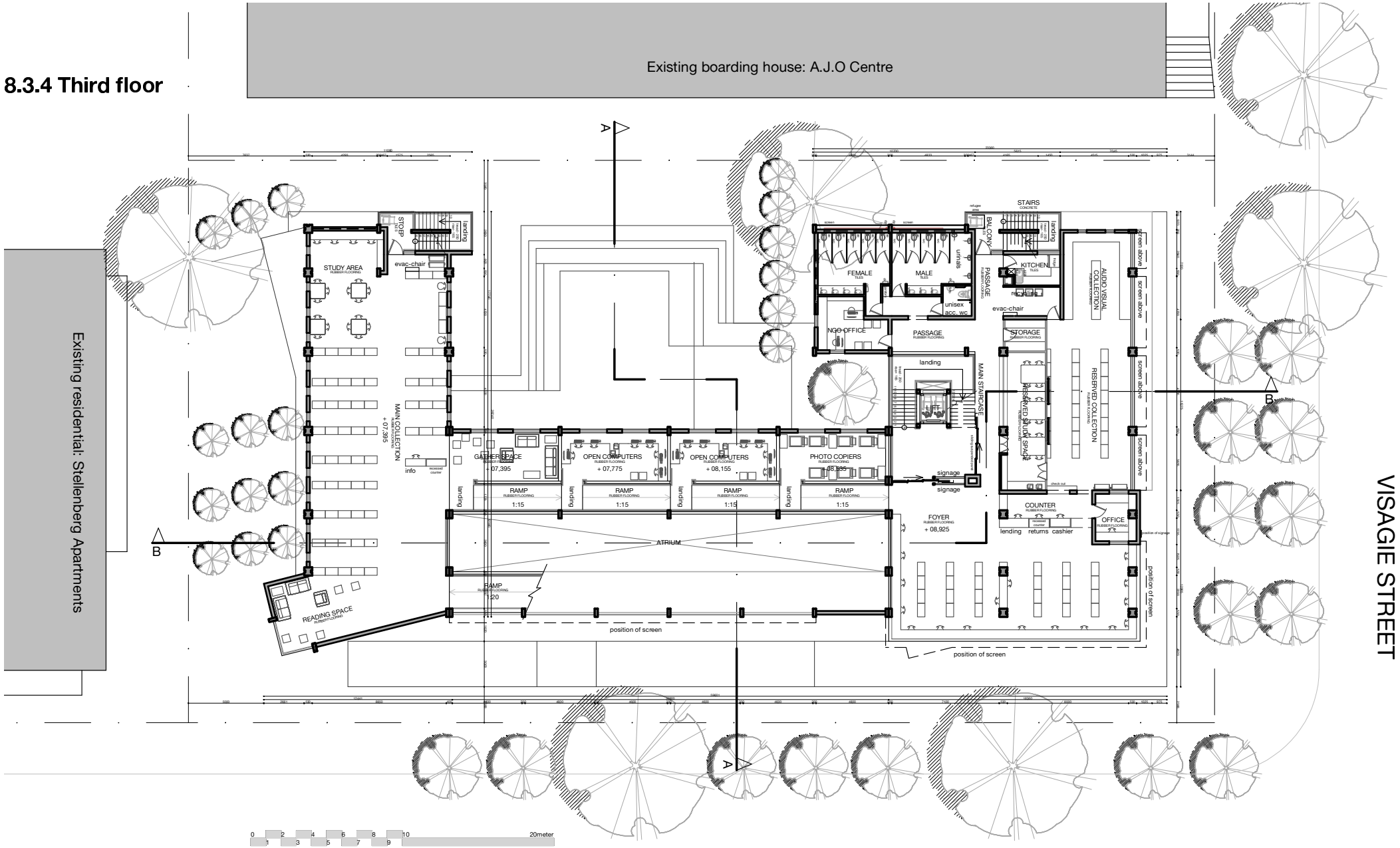
0 1 2 3 4 5 6 7 8 9 10 20meter

8.3.3 Second floor

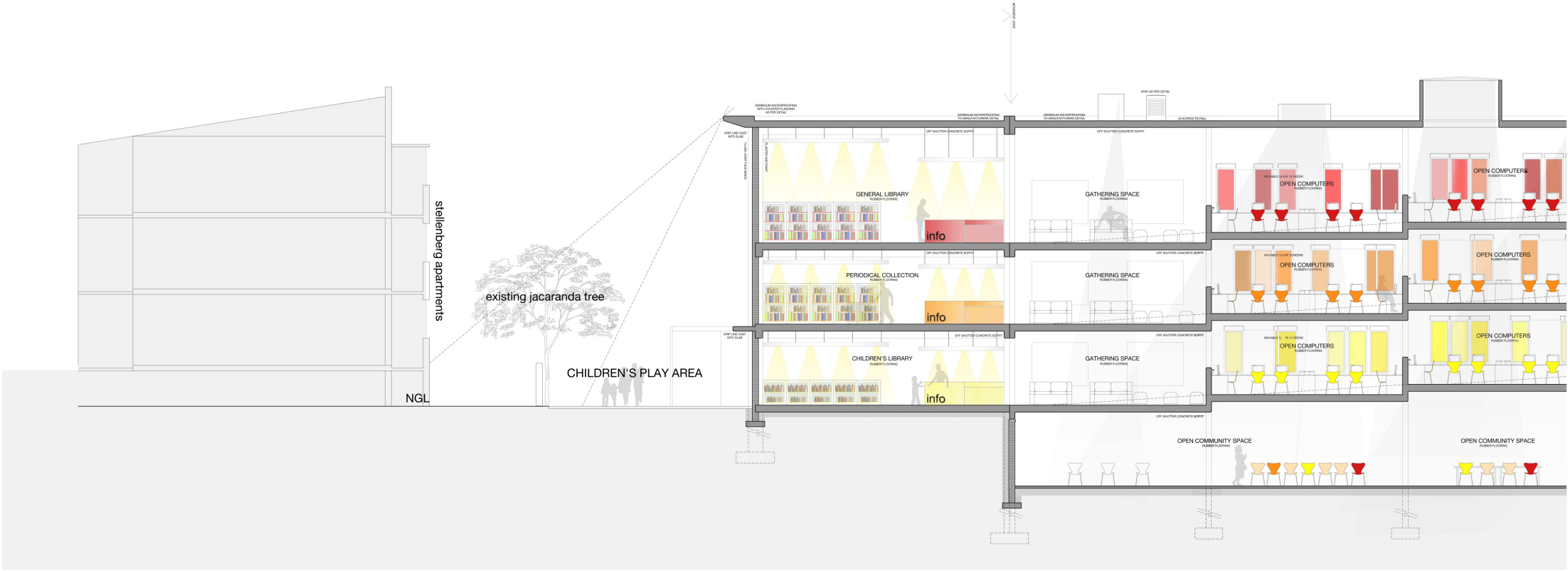


illus. 8.4 Second floor plan 1:500

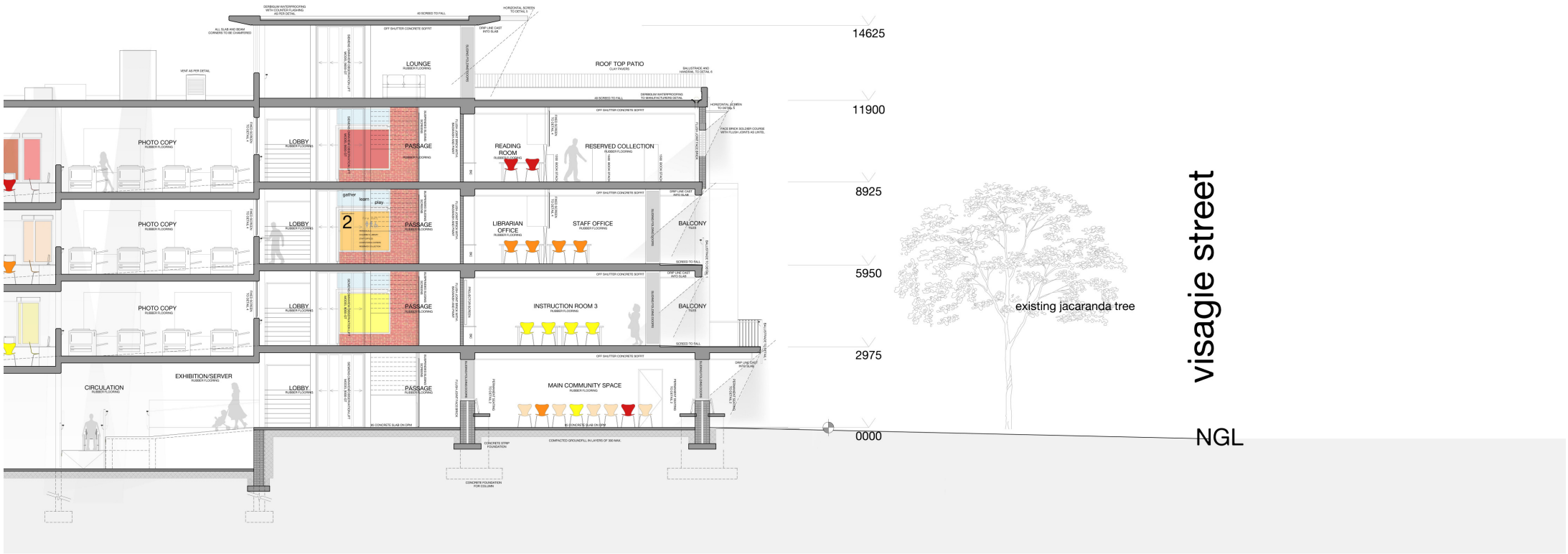
8.3.4 Third floor



illus. 8.5 Third floor plan 1:500

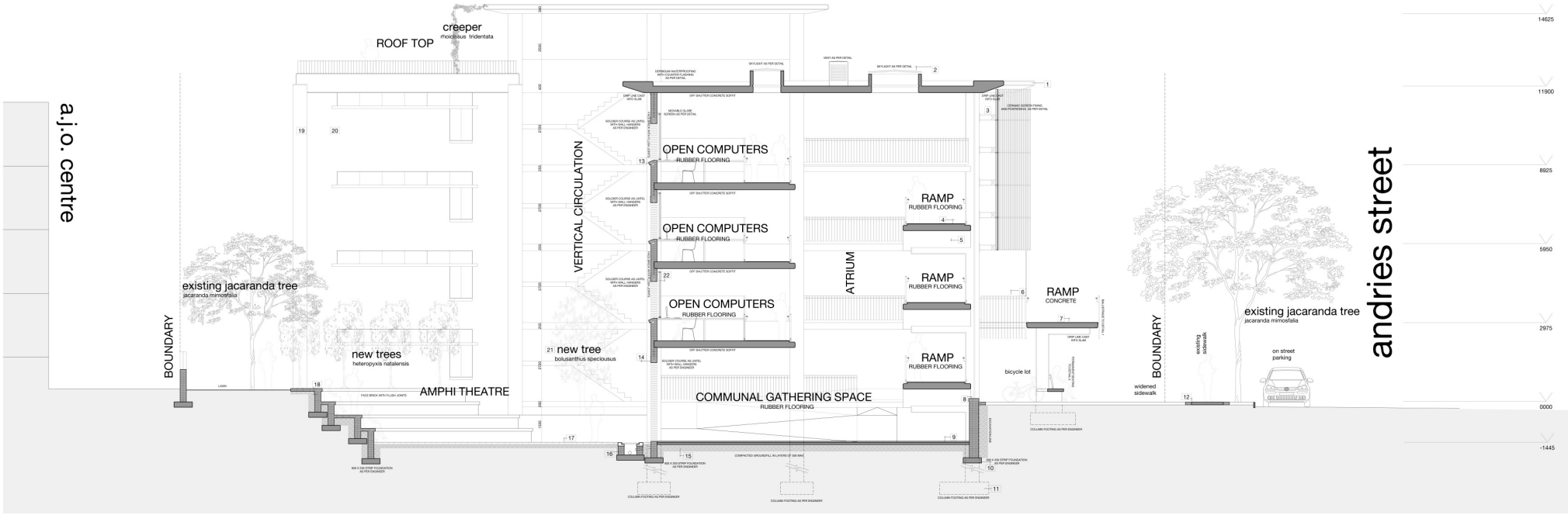


illus. 8.6 Longitudinal section (not to scale)



pantone 187C
pantone 438C
pantone 4725C
pantone 702C
pantone 4665C
pantone 4685C
pantone 7499C
pantone 458C

8.4.2 Cross section



illus. 8.7. Cross section 1:200

8.5 North Elevation

1 SLAB OVERHANG
OFF SHUTTER CONCRETE FINISH BRUSHED WITH STEEL BRUSH WHEN FORM WORK IS REMOVED SLAB OVERHANG EXTENSION TO DIMENSION SHOWN IN DETAIL 3 WITH WATER PROOFING AS SHOWN

2 SKY LIGHT
SKY LIGHT INSTALLED BY SPECIALIST AND INTERNAL PAINTED WITH WHITE PAINT, UP TO DAY JOINT

3 CERAMIC SCREEN AND FIXING
CERAMIC TUBES: PURPOSE MADE BY MARLEY WITH FULL GLAZING, COLOUR AS PER COLOUR CHART (SEE DRAWING)
FIXING: FIXING OF TUBES TO PANELS AS INDICATED PANELS FIXED TO 203 x 133 x 25 I-SECTIONS, CUT AS INDICATED

4 RUBBER FLOORING
465mm x 465mm x 8mm THICK RUBALOY RUBBER FLOOR TILES, TO BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS COLOURS AS INDICATED, VARYING PER FLOOR

5 SOFFIT UNDER RAMPS
OFF SHUTTER CONCRETE FINISH BRUSHED WITH STEEL BRUSH WHEN FORM WORK IS REMOVED

6 EXTERNAL BALUSTRADE
50mm x 5mm STEEL FLAT BAR AS VERTICAL MEMBERS AND 50mm x 10mm AS TOP MEMBER AND BALUSTRADE AS SHOWN IN DETAIL 1

7 EXTERIOR RAMP FLOOR FINISH
40 MAGNESIUM TROWELED SCREED BY EXPERT FOR GRIP IN WET WEATHER

8 WINDOW SILL
BRICK-ON-EDGE WITH FLUSH JOINTS ON DPC AS INDICATED. ALL BRICKWORK MUST BE CONTINUOUSLY CLEANED WITH SUGAR SOAP DURING CONSTRUCTION AND AFTER WORK IS COMPLETED

9 LOWER LEVEL FLOOR SLAB
COMPACTED FILL IN LAYERS OF 150mm TO 95% MODAASHTO STABILISE FINAL LAYER WITH 5% CEMENT 85mm THICK REINFORCED 30MPa CONCRETE SURFACE BED (SLUMP 75) TO ENGINEER'S DETAIL AND SPECIFICATION WITH A SMOOTH AND EVEN STEEL TROWEL FINISH

10 STRIP FOOTING
600 x 255 STRIP FOOTING AS PER ENGINEERS SPECIFICATION

11 COLUMN FOOTING
IN SITU CAST REINFORCED CONCRETE COLUMN FOOTING AS PER ENGINEER SPECIFICATION AND DRAWINGS

12 EDGING TO PAVING
BRICK-ON-EDGE FACE BRICK WITH FLUSH JOINTS AS EDGING TO CLAY PAVERS BRICKWORK MUST BE CONTINUOUSLY CLEANED WITH SUGAR SOAP DURING CONSTRUCTION AND AFTER WORK IS COMPLETED

13 WINDOW SILL
BRICK-ON-EDGE FACE BRICKS WITH FLUSH JOINTS AS WINDOW SILL IN POSITION SHOWN

14 SOLDIER COURSE LINTEL
20 mm PROTRUDING SOLDIER COURSE AS LINTEL WITH WALL HANGERS AS PER ENGINEER WITH REINFORCING AS INDICATED

15 DAMP PROOF COURSE
GUNDLE GUNFLAS USB GREEN 250 MICRON SABS 952-1985 TYPE C LAMINATED POLYETHYLENE DAMP PROOFING MEMBRANE UNDER SURFACE BED

16 THRESHOLD GRID AND DRAIN
530 MEDIUM DUTY CAST IRON SINGLE SEAL GRID TYPE C BESAANS-DU PLESSIS PRODUCT No. 4321 ON BRICK WORK DRAIN WITH APPROPRIATE WATER PROOFING AS ENGINEERS SPEC WITH SLOPE AS REQUIRED

17 PAVING
CLAY PAVING BRICKS (FIRE LIGHT SATIN) IN HERRINGBONE PATTERN AS PER SITE PLAN WITH BRICK-ON-EDGE STRIP AS KERB ALL ON SUB-BASE AS PER ENGINEER'S SPECIFICATION AND DETAIL

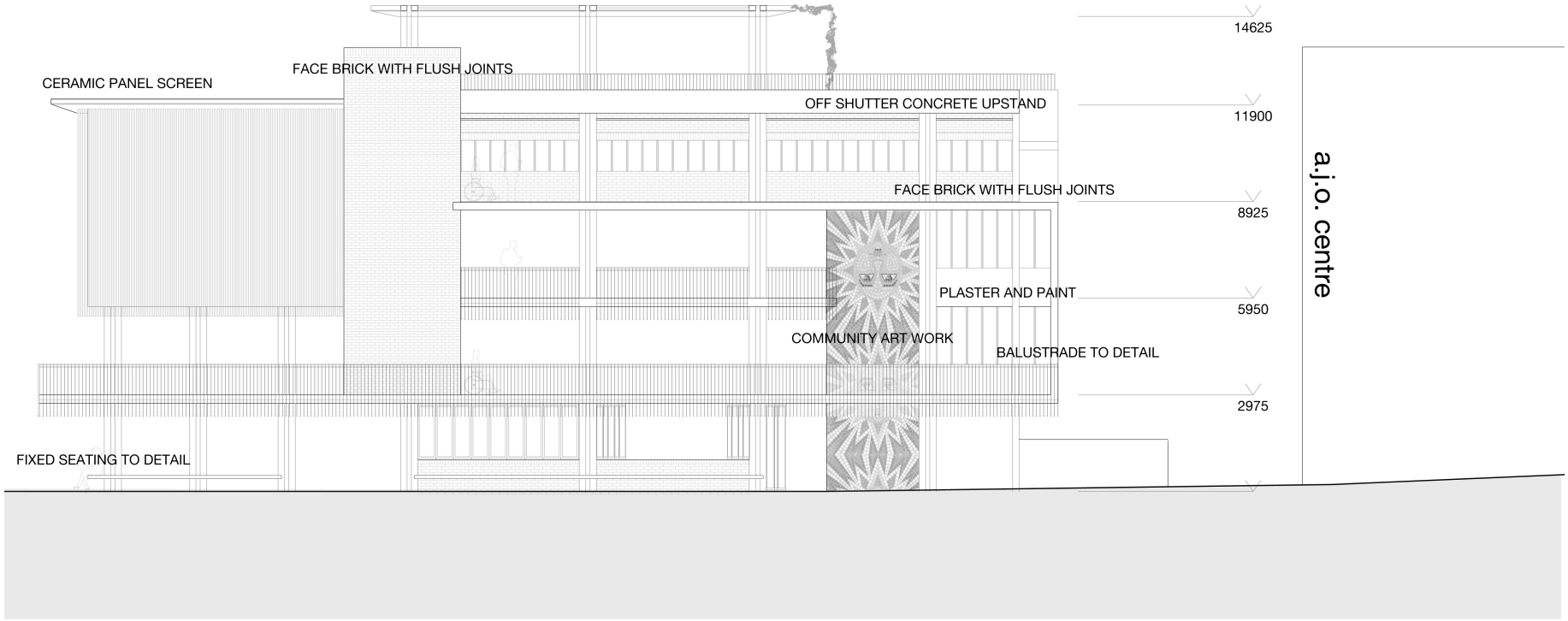
18 AMPHI THEATRE SEATING
FACE BRICK WITH FLUSH JOINTS WALLS ON STRIP FOOTINGS AS PER ENGINEER, FILLED WITH GROUND FILL WITH BRICK-ON-EDGE WITH FLUSH JOINTS AS SITTING SURFACE SLOPED TOWARDS FRONT FOR WATER RUN OFF

19 CONCRETE COLUMN AND UPSTAND OFF SHUTTER CONCRETE FINISH BRUSHED WITH STEEL BRUSH WHEN FORM WORK IS ALL CORNERS TO BE CHAMFERED AS INDICATED

20 FACE BRICKS WITH FLUSH JOINTS
ALL EXTERIOR WALL FINISH TO BE FACE BRICK (FIRELIGHT SATIN) WITH FLUSH JOINTS, ALL BRICKWORK MUST BE CONTINUOUSLY CLEANED WITH SUGAR SOAP DURING CONSTRUCTION AND AFTER WORK IS COMPLETED

21 NEW TREE
NEW bolusanthus speciosus (tree wisteria, sarneyikshout) OR NEW heteropsyxis natalensus (lavender tree) TREE PLANTED ACCORDING TO LANDSCAPE ARCHITECTS GUIDELINES

22 GLARE SCREENS
GLARE SCREENS FOR OPEN COMPUTER AREAS FRAME WITH "3-FORM" SHEET FIXED IN "PARAMETRE" FRAME TO MANUFACTURERS SPECIFICATION. SUSPENDED ON 3 TRACK HANGER SUPPLIED COLOURS AS INDICATED ON SECTION B-B

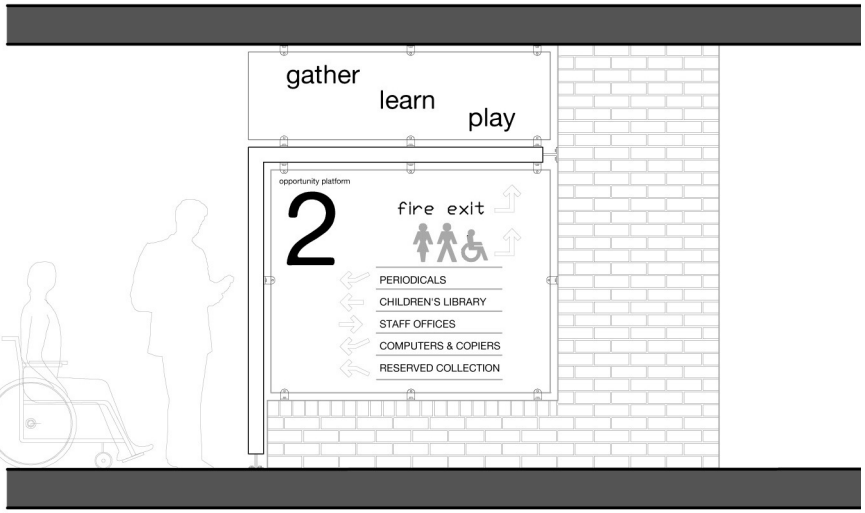


illus. 8.8. North Elevation 1:200

8.6 Signage

The main signage in the lobby and entrance foyer was designed in order to ensure accessible and legible wayfinding in the building. Signage panel has large font with arrows and is colour coded to match each floor, for additional clarity. The signage is duplicated to bath sides in order to ensure a unified design approach, by making it visible to the lift and stair as well as the ramp (illus 8.9 and 8.10).

illus. 8.9. Lobby signage render



illus. 8.10. Lobby signage elevation (not to scale)

8.7 Fire Design

The Burger's Park Opportunity Platform is a open public building and therefore fire strategies need to be implemented to ensure safety of the occupants during an emergency situation. The National Building Regulations (NBR, Part-T) were followed and implemented in the design. These decisions made will have to be confirmed by a fire design specialist.

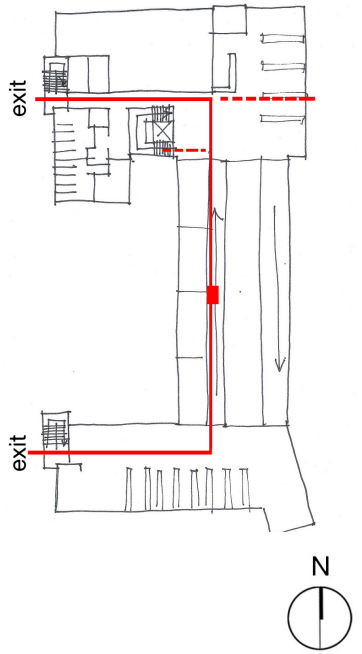
8.7.1 General design

Basic implementations such as distances to fire exists are 45m and the doors open outward. The building is three storeys and therefore requires only one fire escapes per allowable floor area. Refer to floor plans (illus. 8.11).

The fire extinguishing system used will be a sprinkler system combined with the placement of fire hose reels and fire extinguishers. Fire extinguisher placement according part Part T of the NBR, states one fire extinguisher per 500 sqm or part there of. This results in a placement of one fire extinguisher in the north wing, one in the south wing, per floor and an additional one in the lower community level. The requirement for fire hose reels results in one reel per wing, per floor. Additionally the ventilation stacks over the atrium will act as natural smoke extractors.

8.7.2 Evac-chair

According to the Occupational Health and Safety Act, employers are obligated to provide and maintain a working environment that is safe for all employees, including those with disabilities.



illus. 8.11 Fire design: 45m to exits, fire exits indicated

illus. 8.12 Evac-Chair model 300H

This is also true then for escape methods during emergency situations (Evac-Chair, 2011)
Within buildings that are higher than two storeys the Evac-chair offers a means of (assisted) escape during an emergency situation. The Evac-chair has to be specified and place be provided for it in order to allow its use. Secondly staff needs to be trained in the use of it, and the user manual should accompany the Evac-chair. The Evac-chair must also be labelled with appropriate and legible signage (Evac-Chair, 2011).

An Evac-chair (model 300H) is provided, as indicated on the plans, on each floor at the staircases that serve as fire/service stairs. The chair is fitted into the powder coated stand (illus. 8.13), and covered in the labelled yellow Evac-chair cover (illus 8.13). Refer to illus 8.12 for size and model. With the accompanying notification, see illus 8.15.

8.7.3 Refugee area

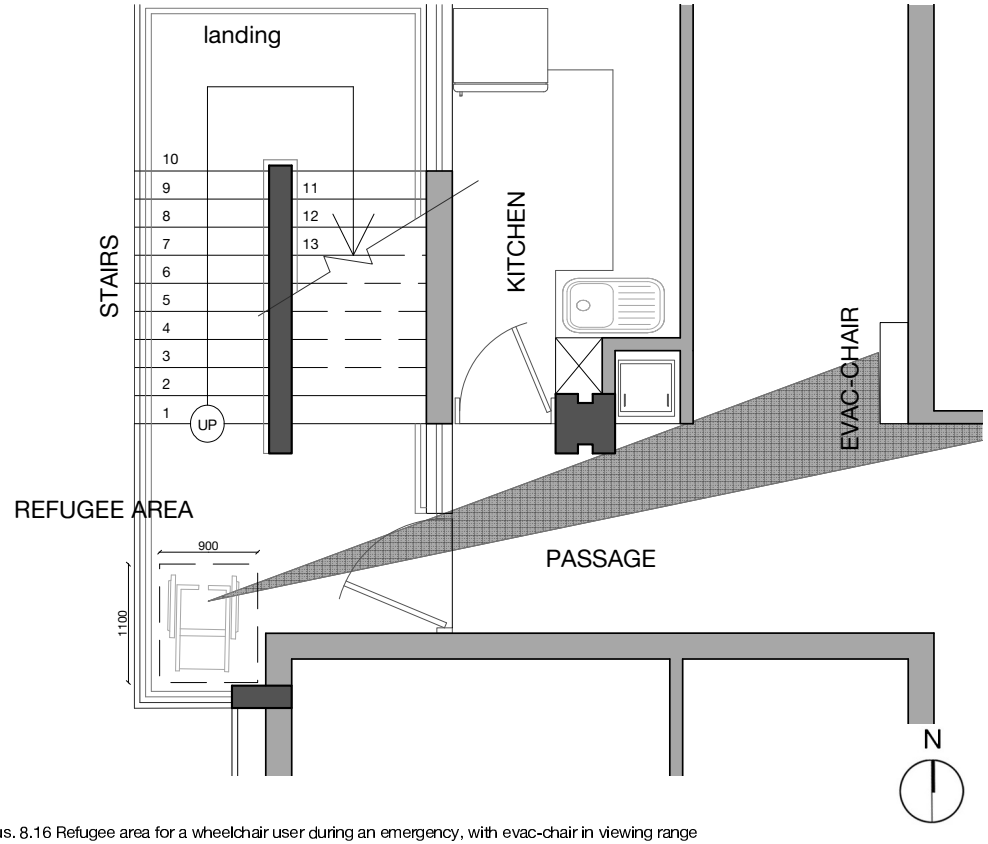
Fire safety for persons with mobility disabilities is imperative and therefore refugee areas have been provided as part of the fire escape staircase. Refugee areas act as a safe area where the person with the disability can remain until assistance can be obtained. Illustration 8.16 indicates the position and sizing of this area. (Holmes-Siedle: 1996: 65).

From the refugee area the Evac-chair must be visible in order for the wheelchair user to point it out to the assisting person. Sizing of the refugee area are shown in illustration 8.16.

illus. 8.13 Evac-Chair Stand

illus. 8.14 Evac-Chair in place with cover

illus. 8.15 Evac-Chair signage and notification



illus. 8.16 Refugee area for a wheelchair user during an emergency, with evac-chair in viewing range

8.8 Materiality

8.8.1 Brick

Brick work in the whole complex is Corobrik Firelight Satin. The brick work is executed with flush joints. Lintels and amphitheatre steps are either in brick-on-edge formation or soldier course as indicated on sections. Brick is one of the most used building materials in South Africa as it requires less high skilled labour. Brick is low maintenance and has a long life-span (Corobrik, 2011). Brick work also assist in providing thermal mass, which is needed in Pretoria. Certain interior walls will be plastered and painted

illus. 8.17 Fire light Satin with flush joints

8.8.2 Interior floors

The importance of the material choice for the floors is crucial given the hazards that inappropriate finishes can present. The choice of flooring material for interior spaces is Rubber floor tiles.

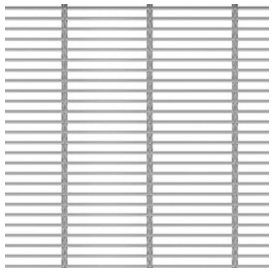
The proposed layout of flooring colour and pattern is carefully considered. The main circulation spaces are done in black and each floor is edged in it's colour coding colour; either light yellow, yellow, orange or deep red. This floor material is hard wearing and offers grip when walking on it. This is especially important on the ramped floor surfaces. Skirting components of the Rubaloy range must accompany the flooring installation where applicable, unless other wise stated. The rubber tiles are also durable and classified as industrial quality. The tiles can be replaced relatively easy.

Rubaloy Mk1 recycled rubber floor tiles comes in standard sizes, 465mm by 465mm by 8mm thick tiles. Application is as per the manufacturer details. Expansion joints are to be at least 5mm and must be filled with black silicon, and movement joints must be finished with an aluminium strip (Rubaloy, 2011). The rubber tiles also offers absorption of sound, and will reduce excessive noise attenuation.

illus. 8.18 Rubber floor colours

8.8.3 Mesh components

Mesh panels are used as separating device in the foyer and lobby spaces. Also the use of this mesh is applied to horizontal shade screens on the northern facade. The choice of material is GKD Mesh, 'Lamelle' and fixed as indicated on sections and in details.



illus. 8.19 'Lamelle' mesh

8.8.4 Outdoor floor finish

The external paved surfaces are to be concrete brick pavers as indicated on the plans. Firelight Satin brick on edge patterns are also indicated on the plan, and aligns with the columns of the main structure.

illus. 8.20 Concrete pavers

8.8.5 Ceramic facade

The ceramic tubes used as the screen element on the east and north facades are 50mm by 50mm, and in lengths as indicated on sections and details. The ceramic tubes require little to no maintenance and is durable. The tubes can be individually replaced. Colours and fixing is indicated on the sections and details.

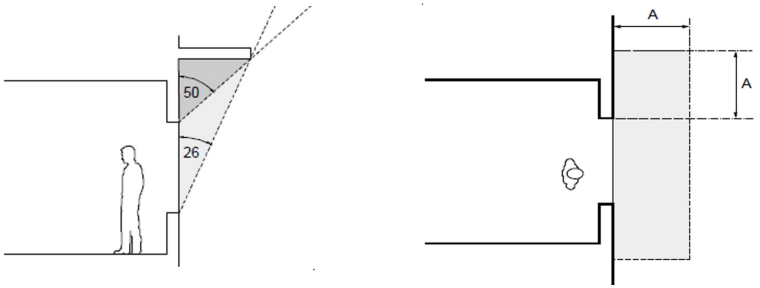
illus. 8.21 Ceramic finish and typical colours

8.9 Security

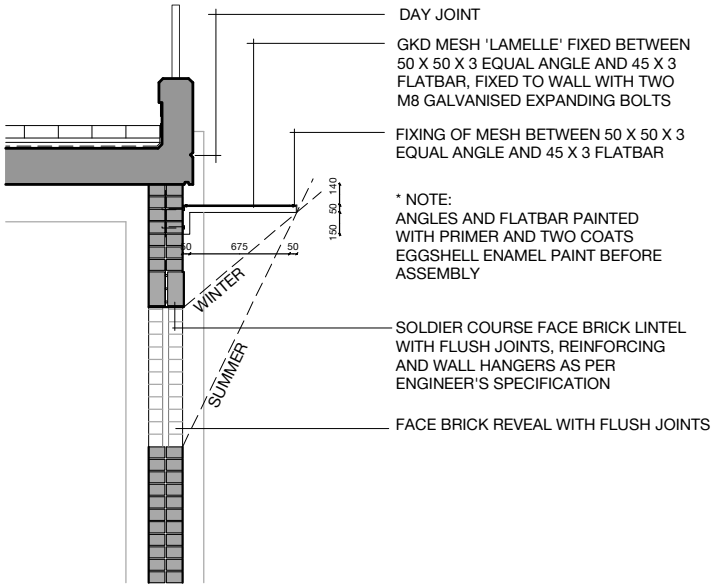
Security is a big concern in any public building. The design of the floors allows for surveillance between floors and from staffing stations. Mesh sliding and fixed panels are used to separate the lobby space from the library component after hours. These panels allow for access to the roof top during these times. It also makes the lift usable during this period, without access to the intermediate floors. Sliding gate for deliveries and sliding panels on the south periphery of the site also provide controlled access to restricted areas. Placement of children's play area was carefully considered, and was placed at south west corner, as it is the most protected area on the site.

8.10 Solar shading panels

Solar shading panels on the northern facade keep harsh sun out during the summer, but allows winter sun to penetrate. The sizing (depth) of the panel was determined according to principles as prescribed in Sustainable buildings in Gauteng (CSIR, 2008: 36). The principle is shown in illustration 8.22a and the application in 8.22b & 8.22c.

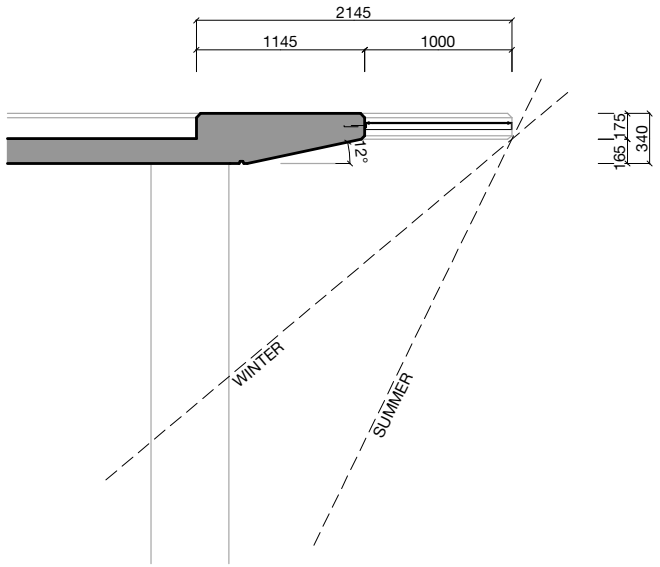


illus. 8.22a Principle of sizing horizontal shade panels

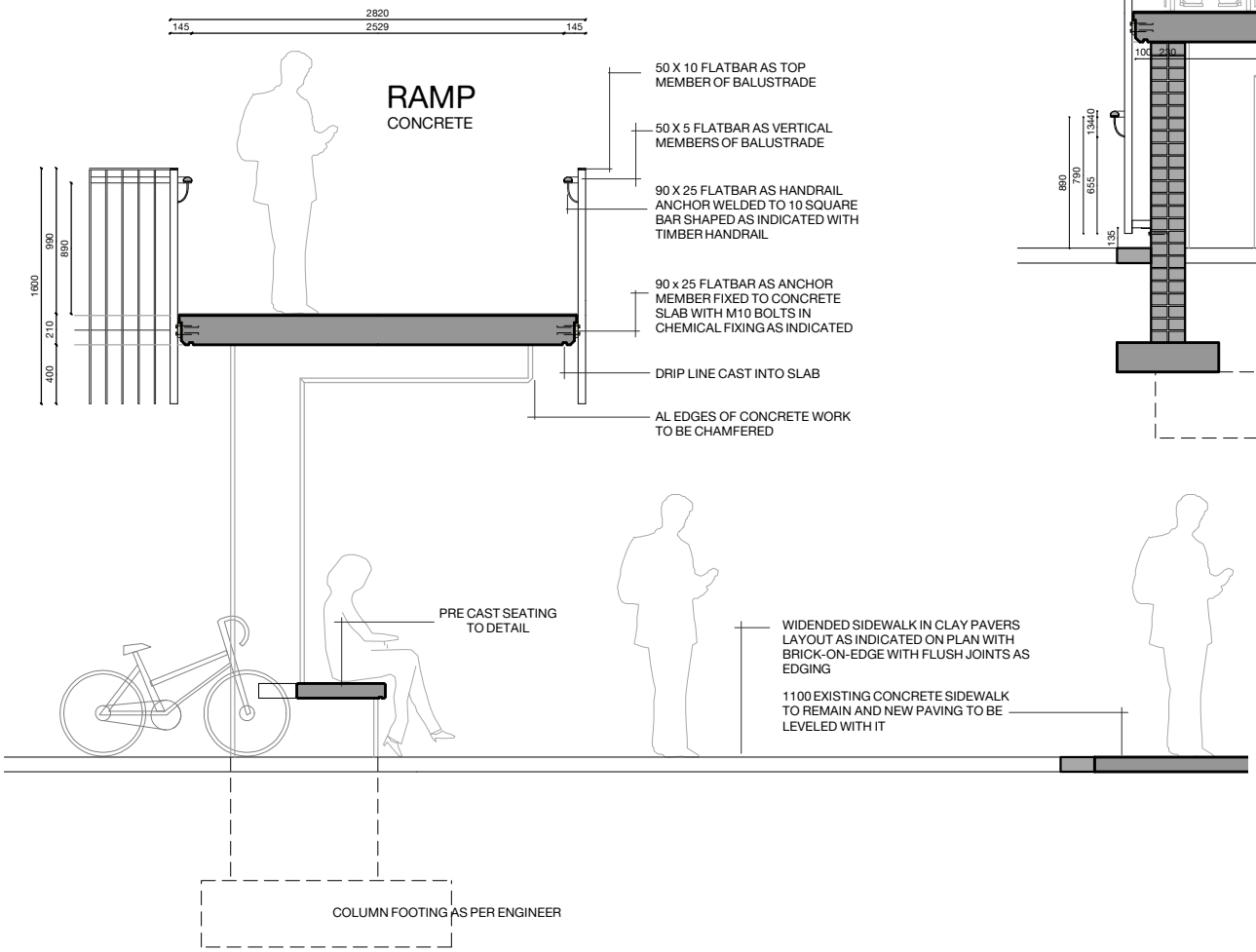


illus. 8.22b Upstand beam and balustrade with horizontal solar shade screen on 3rd floor

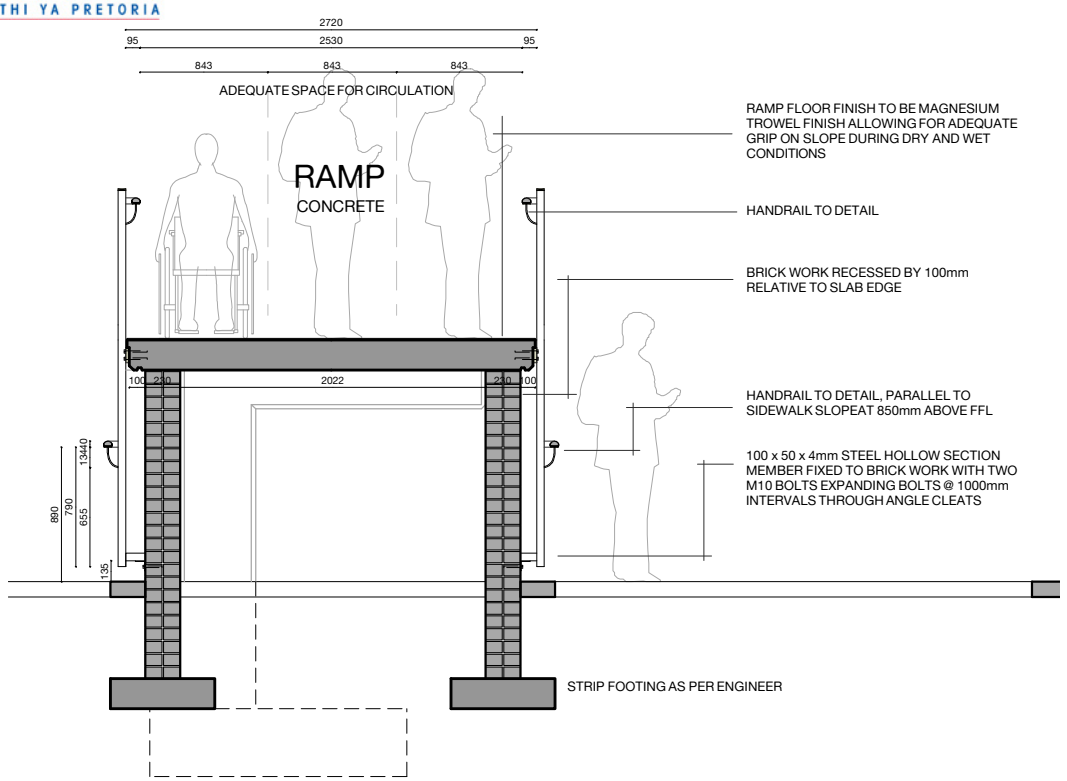
illus. 8.22d Render of panels in winter: allowing sun to enter space



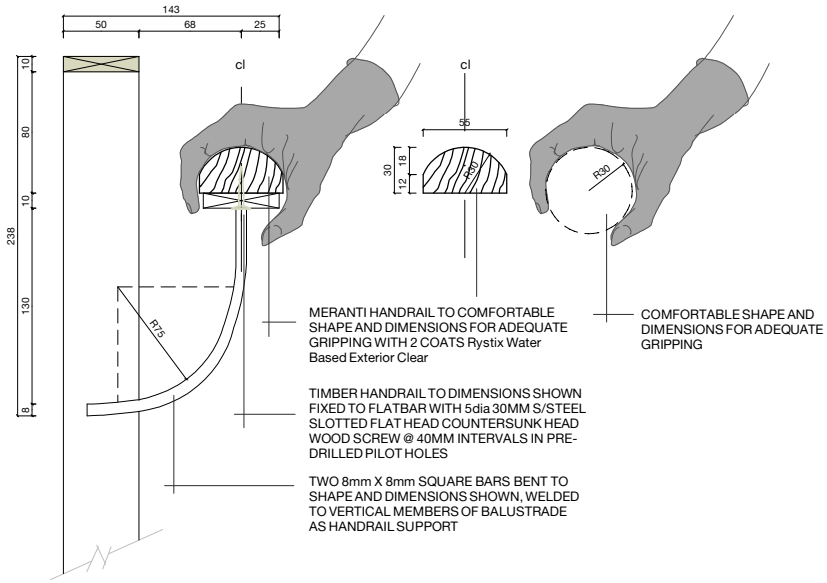
illus. 8.22c Slab edge detail, with horizontal solar shading screen on roof top level



illus. 8.23a Balustrade, ramp and seating detail



illus. 8.23b Balustrade, ramp and seating detail (alternative)



illus. 8.23c handrail detail and decision

conclusion

post-exam and study reflection

9

conclusion

... an exclusively inclusive approach.

(Author, 2011)

This dissertation started out as a study on inclusive design and how it could be applied to a specific public building. The process of understanding the relevance and importance of accessible (public) buildings, lead to an understanding of the difficulties experienced by disabled persons, especially independent navigation.

The study analysed two libraries that were completed post-apartheid, and neither of them passed the minimum criteria of the Building Regulations and are by no means inclusive buildings.

In the design process and product, it was clear that designing inclusively had an effect on all design decisions made. Designing inclusively has enriched the design on so many levels, without the obvious add-on of inclusive elements as one usually finds in public buildings, but rather an unnoticed continuous and well thought through design.

An exclusively inclusive approach to design resulted in a intrinsically inclusive building, from the floor finish to the signage to the vertical circulation and the placement of the front door.

In the end, the process resulted not only in an inclusive design, but also good design.

list of references

sources consulted during the study

10

list of references

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appendices

Space-Time Research
Census 2001 (October 2001 boundaries)
Table 1
Geography by Disability
for Person weighted

	No disability	Sight	Hearing	Communication	Physical	Intellectual	Emotional	Multiple
Pretoria	504929	3090	2997	676	5313	2554	2558	3266
Pretoria SP	124	6	-	-	4	-	-	6
Alphen Park	314	3	1	2	11	6	4	2
Andeon AH	1219	7	15	1	13	4	1	1
Annlin	2483	22	19	-	25	5	9	7
Annlin Ext 37	950	5	1	-	9	6	3	4
Annlin West Ext 3	234	1	1	-	4	-	-	
Arcadia	16014	150	84	19	196	58	76	243
Ashlea Gardens	708	1	4	-	15	39	2	3
Asiatic Bazaar	610	9	-	4	10	1	2	-
Bailey's Muckleneuk	554	29	12	1	25	7	11	79
Bellevue	527	20	16	3	45	2	23	4
Bon Accord	110	1	-	-	2	-	-	
Booysens	3570	15	5	8	32	36	12	14
Brooklyn	2617	15	8	2	33	8	4	6
Brummeria	886	-	2	-	4	4	-	1
Brummeria Exts	523	2	4	1	4	-	-	2
Bryntirion	239	1	-	-	1	-	-	
Capital Park	6346	26	19	14	90	32	9	9
Claremont	6680	17	44	20	91	42	33	10
Colbyn	1051	10	1	-	8	8	6	181
Colbyn Valley	26	1	1	-	1	-	-	
Constantia Park	3525	12	4	5	16	17	2	4
Danville	10547	79	55	22	135	54	89	128
Daspoort	6642	140	68	10	100	37	62	68
De Wilgers	5114	32	36	1	79	23	8	25
Deerness	279	7	3	-	4	-	1	1
Derdepoort	345	3	5	-	3	118	-	2
Derdepoort Park	507	1	88	1	4	69	-	13
Doornpoort	10760	31	42	11	56	41	19	23
Dorandia	3386	22	19	5	25	18	4	9
East Lynne	3745	16	25	2	41	27	29	11
Eastmead	229	-	-	1	-	-	-	-
Eastwood	491	1	-	-	1	1	-	1
Eersterus	25341	88	75	32	230	84	101	123
Ekklesia	760	1	6	-	4	6	6	-

Elandsfontein	216	3	1	-		3	-		1	9
Elandspoort	1969	31	15	5	50	17	13	18
Elarduspark	9034	29	38	6	59	23	6	26
Eloffsdal	1494	16	21	-		38	6	-		10
Erasmuskloof	3715	11	8	-		19	17	3	7
Erasmuspark	16	3	1	-	-	-	-	-	
Erasmusrand	1319	6	3	-		10	11	3	4
Faerie Glen	12834	47	70	10	101	56	23	45
Florapark	157	1	-	-	-	-		1	-	
Florauna	1813	14	17	-		18	5	4	9
Garsfontein	16009	53	92	23	127	56	43	57
General Kemp Heuwel	350	2	-	-		1	1	-	-	
Gezina	4794	35	37	11	60	20	16	22
Groenkloof	3145	40	23	13	41	30	19	45
Hatfield	2678	7	7	-		8	9	5	-	
Hazelwood	398	2	3	-		5	2	-		2
Hermanstad	1099	8	5	-		34	10	20	-	
Hillcrest	349	2	1	-	-		1	1	-	
Hornsoord	1023	12	2	2	24	4	9	1
Jan Niemand Park	1875	5	9	-		15	5	7	4
Kenley AH	212	-	-	-		1	-	-	-	
Kilner Park	4785	25	31	4	63	28	18	15
Kirkney	62	-	-	1	2	-	-		1
Koedoespoort Industrial	19	-		1	-		4	-	-		2
Kwaggasrand	4912	16	20	3	24	20	17	7
Kwaggasrant	36	2	-	-		3	-	-	-	
La Montagne	4265	14	29	1	33	7	14	9
Les Marais	1319	2	19	2	12	4	3	3
Lindo Park	1602	11	3	-		6	5	6	-	
Loeka Villa	847	-		3	1	2	10	1	1
Lotus Gardens	5657	10	14	12	47	17	33	3
Lukasrand	553	1	-		2	2	4	1	1
Lydiana	314	11	5	1	2	1	1	6
Lynnwood	4020	15	22	2	26	19	9	15
Lynnwood Glen	3476	20	24	2	24	7	5	5
Lynnwood Manor	2495	6	16	2	23	10	8	3
Lynnwood Park	439	1	1	-		1	-		1	-	
Lynnwood Ridge	2621	8	17	5	16	5	4	5
Lyttelton	467	1	-		1	1	3	2	-	
Magalieskruin	3369	11	21	-		20	14	5	9
Maroelana	411	7	-		1	4	-	-		4
Mayville	2564	7	12	3	20	7	-		2
Menlo Park	2807	9	11	1	20	5	2	18
Menlyn	363	-	-	-		1	-	-	-	

Meyerspark	4721	18	19	5	37	20	6	7
Montana	492	1	-	1	7	-	-	2
Montana AH	614	-	1	-	4	2	-	1
Montana Ext 2	232	1	1	1	1	1	2	2
Montana Park	2793	8	5	4	12	28	5	8
Montana Park Exts	2768	7	10	10	16	13	13	1
Montana Tuine	1876	7	7	4	18	7	-	5
Monument Park	4931	7	23	2	31	14	20	10
Moregloed	2946	9	13	1	25	17	11	6
Moreletapark	13648	41	42	4	74	49	14	28
Mountain View	5807	18	29	5	63	39	15	20
Muckleneuk	5658	26	22	10	37	30	18	14
Murrayfield	2953	8	9	3	14	8	1	7
New Muckleneuk	675	6	19	2	23	-	6	20
Newlands	2694	21	18	1	25	27	8	8
Onderstepoort	254	1	1	-	-	-	-	1
Parktown Estate	1900	10	8	6	28	10	5	8
Phillip Nel Park	3429	14	10	33	3	24	41	1
Pretoria CBD	23961	170	91	47	188	80	73	143
Pretoria Gardens	6443	35	38	6	62	47	7	25
Pretoria Industrial	920	1	2	-	-	2	-	2
Pretoria North	9591	91	99	20	149	62	37	186
Pretoria University & Schools	637	2	3	2	5	5	5	99
Pretoria University Sports Grounds	336	1	3	-	-	-	2	1
Pretoria West	7645	71	35	10	86	47	40	14
Pretoriuspark Ext 1	572	4	1	-	9	2	5	3
Prinshof	1554	161	23	6	102	38	22	63
Proclamation Hill	3136	19	38	1	34	20	27	6
Pumulani AH	528	2	2	-	1	2	1	3
Queenswood	5823	30	46	7	108	35	34	54
Radio Uitkyk	564	4	-	-	4	1	-	-
Rietfontein	9864	69	73	18	113	37	39	49
Rietondale	1726	62	4	5	16	2	11	4
Rietvalleirand	665	-	2	-	1	1	-	-
Rietvlei Nature Reserve	164	-	-	-	-	-	-	-
Riviera	2121	11	13	3	10	10	1	6
Roseville	753	7	8	1	6	3	2	21
Salvokop	8071	127	171	41	336	75	152	325
Scientia	60	1	1	-	-	-	-	-
Silverton	8590	42	55	13	127	58	36	19
Sinoville	5795	18	26	-	53	25	10	10
Sinoville Ext	2023	4	5	-	15	8	1	5
Skanskop	-	-	-	-	-	-	-	-
Sterrewag	626	-	3	-	4	2	-	-

Suiderberg	2409	17	10	5	58	27	26	13
Sunnyside	26053	137	137	16	233	88	46	64
Technikon Rant	35	2	-	-	-	-	-	-
Thaba-Tshwane	5575	20	39	20	54	13	19	83
Tileba	872	1	5	1	6	4	1	1
Trevenna	1589	23	4	-	4	8	2	1
Val de Grace	1396	7	4	1	12	4	3	3
Valhalla	7707	30	33	6	99	30	22	191
Villieria	10786	123	67	12	123	60	45	126
Waltloo	153	3	1	-	2	1	-	1
Wapadrand	2522	3	5	1	21	9	2	-
Waterkloof	3677	21	12	1	36	9	2	47
Waterkloof AH	926	7	7	2	34	2	-	2
Waterkloof Glen	3043	6	13	-	35	15	2	6
Waterkloof Heights	875	8	7	1	8	3	-	2
Waterkloof Park	429	4	1	-	-	1	-	-
Waterkloof Ridge	6465	34	34	2	34	30	14	20
Waverley	6756	56	60	4	78	23	14	19
Weavind Park	1702	10	8	6	14	8	1	3
Weskoppies	1387	7	4	4	10	6	784	28
Wespark	4564	18	132	4	41	21	15	48
Willow Glen AH	1842	5	32	3	20	6	-	5
Willow Park	147	1	-	-	4	1	-	-
Willow Park AH	572	11	-	-	-	2	-	-
Willowbrae AH	307	-	-	-	-	-	2	-
Wingate Park	4488	11	30	2	19	24	1	9
Wolmer	4202	24	25	8	106	42	17	19
Wonderboom	5069	17	17	1	30	26	8	11
Wonderboom Aerodrome	165	2	3	1	-	-	6	-
Wonderboom AH	251	1	-	-	6	-	-	-
Wonderboom Nature Reserve	6	-	-	-	-	-	-	-
Wonderboom South	8346	60	56	16	86	44	26	24
Woodhill	683	1	2	-	4	5	-	1
Zwartkop Nature Reserve	5	-	-	-	-	-	-	-

Space-Time Research
Census 2001 (October 2001 boundaries)
Table 1
Geography by Age in five year categories
for Person weighted

	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total
Pretoria	28197	31034	34650	45690	59839	54695	50854	43343	40078	32135	27502	22621	17722	11984	10032	6953	4773	3282	525384
Pretoria SP	1	6	8	-	16	29	22	11	18	5	6	3	11	-	4	-	-		141
Alphen Park	9	10	35	85	25	14	18	17	15	21	21	17	23	12	13	7	1	-	344
Andeon AH	72	53	75	70	111	178	134	133	123	72	80	54	41	30	18	7	8	2	1262
Annlin	99	140	153	203	184	172	223	199	195	164	222	160	163	113	90	51	29	10	2570
Annlin Ext 37	101	73	61	58	107	153	157	88	53	38	37	26	14	5	6	1	-		978
Annlin West Ext 3	6	6	14	12	16	11	11	13	14	13	19	11	15	12	18	17	18	14	240
Arcadia	758	648	648	1656	3556	2635	1651	1065	893	647	473	470	360	328	262	277	274	237	16839
Ashlea Gardens	30	41	53	80	103	94	59	42	53	55	46	33	35	15	12	8	7	7	772
Asiatic Bazaar	37	19	15	31	105	134	71	62	53	46	33	15	12	2	-	1	-		636
Bailey's Muckleneuk	12	25	43	71	42	28	32	30	57	60	43	30	36	20	43	34	51	61	718
Bellevue	28	21	33	68	47	41	40	41	44	32	36	35	14	23	43	21	35	39	640
Bon Accord	7	4	4	14	9	16	17	6	10	12	6	6	1	1	-	-	-		113
Booysens	187	249	308	401	299	285	364	325	327	303	216	163	114	63	44	28	11	2	3692
Brooklyn	84	111	189	229	268	157	148	212	254	248	208	171	129	95	86	52	32	20	2693
Brummeria	38	36	32	65	60	52	75	69	55	61	74	76	83	61	32	22	6	1	898
Brummeria Exts	9	5	10	14	52	42	32	22	29	20	24	19	25	36	66	68	42	20	536
Bryntirion	15	7	5	14	15	25	35	21	15	18	23	24	5	6	6	2	3	3	242
Capital Park	271	359	435	555	637	527	599	539	533	424	379	351	297	220	165	124	81	48	6545
Claremont	405	527	630	704	539	603	634	621	589	421	388	259	244	133	126	65	29	20	6937
Colbyn	49	58	50	87	104	56	89	102	102	122	76	69	47	35	53	53	54	59	1265
Colbyn Valley	1	1	2	11	-	-	1	4	3	-	1	-	1	-	2	1	-		29
Constantia Park	159	212	285	346	268	224	239	313	327	287	366	256	137	58	50	31	18	8	3585
Danville	691	863	960	1006	999	1076	1162	966	873	610	501	372	338	233	203	112	86	60	11109
Daspoort	391	515	560	653	594	577	714	623	619	504	380	350	235	154	126	63	58	11	7127
De Wilgers	186	198	338	460	395	363	346	397	402	431	452	291	211	165	194	227	167	97	5319
Deerness	8	11	12	22	26	15	25	17	22	15	16	15	16	13	17	20	15	10	296
Derdepoort	12	55	183	135	12	7	5	11	14	16	10	5	6	3	1	-	1	-	476
Derdepoort Park	56	76	137	89	44	54	75	60	29	20	16	14	9	2	-	1	1	-	684
Doornpoort	962	1031	835	549	555	1302	1885	1331	808	426	312	321	290	171	112	61	19	13	10982
Dorandia	159	195	295	392	261	283	300	285	324	269	241	199	120	59	54	22	19	9	3487
East Lynne	225	248	294	369	323	307	332	306	338	279	245	216	148	110	63	58	22	11	3895
Eastmead	7	12	16	23	34	21	20	21	26	10	14	14	1	6	3	1	1	1	230
Eastwood	21	24	27	42	30	40	58	37	56	43	35	21	14	18	13	5	9	5	496
Eersterus	2303	2246	2377	2554	2889	2789	2346	1928	1728	1428	1124	727	589	435	275	159	89	88	26074
Ekklesia	59	76	71	72	57	82	69	54	64	51	43	26	27	13	9	7	2	3	784
Elandsfontein	23	14	21	17	26	24	22	29	11	16	9	5	4	7	4	1	-		233
Elandspoort	141	176	201	201	190	214	218	178	169	141	99	78	55	32	14	5	2	4	2118
Elarduspark	580	723	775	784	646	808	1036	920	898	614	500	352	222	139	111	68	34	10	9221
Eloffsdal	52	71	85	111	88	96	96	110	121	92	88	96	122	67	91	86	60	54	1586
Erasmuskloof	297	218	242	257	283	418	514	397	357	263	162	115	130	42	49	22	8	6	3781
Erasmuspark	-	-	-	1	3	2	3	1	2	7	1	-	-	-	-	-	-		20
Erasmusrand	50	72	87	113	100	88	81	111	114	104	113	141	97	49	19	8	6	5	1358
Faerie Glen	732	738	727	864	834	1044	1234	1209	1067	963	872	773	606	512	479	297	169	67	13186
Florapark	16	27	34	13	1	17	9	7	3	6	4	6	6	6	-	1	1	-	159
Florauna	75	100	129	155	157	130	132	130	197	168	144	135	87	61	35	26	13	7	1880
Garsfontein	807	1002	1250	1500	1232	1188	1318	1409	1669	1461	1143	702	435	315	318	290	250	172	16461
General Kemp Heuwel	32	47	38	30	22	31	43	57	28	11	6	6	-	2	-	-	-		355
Gezina	251	291	301	325	659	580	470	385	388	285	281	223	186	148	97	61	37	29	4996
Groenkloof	111	140	149	360	603	204	208	195	213	229	177	166	130	106	117	98	76	74	3355

Hatfield	49	31	34	525	1129	287	149	92	82	87	65	55	31	26	30	26	11	4	2715
Hazelwood	10	15	21	37	64	34	23	30	24	39	31	21	22	17	10	9	3	2	413
Hermanstad	55	73	96	131	96	102	96	121	103	73	63	55	35	41	19	10	2	4	1176
Hillcrest	3	4	31	86	155	28	14	11	5	2	8	1	4	-	1	1	-	-	355
Hornsoord	70	52	47	71	143	173	94	106	99	71	49	31	25	18	17	8	1	1	1077
Jan Niemand Park	125	164	195	161	151	162	177	184	145	113	105	81	60	46	32	8	5	7	1921
Kenley AH	13	6	17	29	28	18	5	9	25	22	21	6	4	3	3	1	-	1	213
Kilner Park	225	243	260	340	469	500	447	395	299	334	372	323	271	154	130	93	68	46	4969
Kirkney	2	3	1	4	6	9	7	6	7	8	4	4	1	3	-	-	1	-	66
Koedoespoort Industrial	-	2	1	1	4	-	3	6	2	-	2	2	1	-	-	-	2	-	26
Kwaggasrand	458	458	442	436	447	620	660	535	362	217	148	88	64	37	18	16	13	-	5019
Kwaggasrant	1	-	-	3	6	2	3	6	7	7	2	3	1	-	-	-	-	-	41
La Montagne	204	199	202	274	444	591	526	291	307	254	301	243	215	125	98	62	32	7	4373
Les Marais	72	54	73	113	97	112	102	112	132	100	93	86	65	47	58	30	10	10	1365
Lindo Park	164	136	149	140	155	202	214	138	135	80	44	29	25	10	6	3	2	1	1633
Loeka Villa	54	44	32	44	79	125	108	135	75	50	39	34	18	11	9	3	5	1	865
Lotus Gardens	496	556	630	689	574	411	498	574	551	372	198	113	58	34	24	8	4	2	5792
Lukasrand	25	48	41	52	37	27	29	39	59	52	49	28	22	19	15	15	7	3	565
Lydiana	13	20	17	23	45	23	27	37	33	28	14	19	17	16	5	3	1	-	341
Lynnwood	157	222	264	343	362	233	275	306	416	328	350	273	186	126	122	86	50	30	4129
Lynnwood Glen	153	167	256	412	254	240	261	272	298	237	232	244	199	134	114	50	28	11	3563
Lynnwood Manor	96	134	120	159	231	242	208	204	193	191	165	165	170	124	86	38	25	12	2564
Lynnwood Park	19	21	20	21	43	30	31	47	27	36	39	52	29	13	8	6	2	1	444
Lynnwood Ridge	98	141	191	242	218	178	188	185	235	237	208	203	138	68	74	47	22	9	2680
Lyttelton	43	49	50	44	40	43	50	55	52	26	10	5	2	3	-	-	2	1	475
Magalieskruin	134	187	242	328	308	190	259	286	270	253	327	275	174	88	55	42	21	11	3450
Maroelana	17	17	32	43	39	27	28	32	40	36	36	27	19	17	7	8	1	2	427
Mayville	150	165	178	202	229	237	256	229	215	158	161	116	115	85	49	34	24	14	2615
Menlo Park	100	151	227	285	239	162	195	209	290	227	229	165	129	94	73	52	30	17	2873
Menlyn	15	15	13	19	57	76	46	24	24	24	11	14	10	6	2	3	2	1	364
Meyerspark	231	249	366	431	386	330	393	373	404	414	340	291	253	141	119	63	28	23	4833
Montana	20	33	38	53	35	25	40	48	51	40	49	34	15	6	6	2	2	6	504
Montana AH	27	29	25	26	55	60	58	63	64	44	39	52	40	13	13	8	5	3	623
Montana Ext 2	7	11	13	22	16	12	18	29	11	27	18	22	13	13	5	5	1	-	242
Montana Park	210	234	177	170	132	198	351	313	306	181	161	138	134	90	39	17	3	8	2862
Montana Park Exts	199	196	166	143	131	205	366	291	201	143	156	198	156	108	79	66	28	7	2839
Montana Tuine	109	140	125	113	90	158	172	166	126	92	59	55	88	162	126	79	50	14	1922
Monument Park	281	315	342	360	360	394	483	461	482	392	370	226	221	150	111	48	29	14	5038
Moregloed	137	187	226	223	239	235	315	264	234	191	169	170	191	114	74	31	18	10	3027
Moreletapark	1028	997	941	848	906	1556	1919	1544	1315	963	650	466	333	179	135	72	37	10	13900
Mountain View	343	426	450	526	458	475	585	482	542	434	316	308	225	156	135	80	35	19	5996
Muckleneuk	279	241	226	414	1046	944	634	407	361	320	236	193	153	96	102	84	49	31	5814
Murrayfield	112	150	197	236	224	240	278	204	240	256	226	236	164	108	59	47	16	10	3002
New Muckleneuk	16	31	53	54	52	46	46	50	65	59	42	31	57	30	29	25	26	39	752
Newlands	144	159	211	262	227	183	225	242	310	263	157	117	89	56	58	39	35	27	2803
Onderstepoort	5	5	3	17	125	36	20	10	14	2	9	2	6	1	1	-	-		258
Parktown Estate	103	116	145	150	152	154	176	144	178	159	145	116	95	55	40	18	19	10	1975
Phillip Nel Park	220	148	120	625	1242	388	309	194	125	61	42	25	20	12	15	1	7	3	3556
Pretoria CBD	1161	991	905	2757	6545	4865	2665	1463	903	631	453	294	260	183	202	180	173	123	24751
Pretoria Gardens	341	400	517	611	524	530	596	595	588	467	392	345	271	198	138	80	51	20	6663
Pretoria Industrial	36	45	52	170	267	105	64	43	44	44	28	17	8	3	-	-	1	-	927
Pretoria North	513	605	721	816	863	905	923	841	756	631	503	557	434	321	294	279	162	113	10236
Pretoria University & Schools	11	9	154	397	25	26	26	22	15	15	17	23	12	1	2	-	1	1	758
Pretoria University Sports Grounds	3	-	31	162	112	1	6	4	6	5	5	4	3	1	-	-	-	-	343
Pretoria West	538	510	489	604	996	1086	844	640	543	402	370	300	226	145	102	72	45	36	7949
Pretoriuspark Ext 1	46	55	40	32	44	41	78	81	66	35	23	14	17	11	3	6	2	1	596
Prinshof	88	89	137	346	499	203	125	93	69	62	63	54	46	28	29	19	11	10	1970
Proclamation Hill	184	235	239	271	307	360	275	260	257	204	198	143	131	72	68	35	25	18	3283

Pumulani AH	47	35	26	19	43	67	64	59	48	35	29	17	21	17	3	4	3	2	540
Queenswood	242	307	405	414	491	440	493	456	459	375	338	318	299	263	244	210	200	184	6138
Radio Uitkyk	48	61	69	75	43	39	52	74	67	28	7	5	5	-	-	-	-	-	573
Rietfontein	501	546	685	785	748	856	931	858	800	673	653	574	514	356	366	248	115	51	10260
Rietondale	102	112	154	132	119	84	180	164	174	152	121	87	71	57	43	32	32	13	1831
Rietvalleirand	24	17	14	19	90	163	86	25	21	25	25	30	37	33	44	8	5	3	670
Rietvlei Nature Reserve	11	14	3	4	11	7	16	18	31	26	12	2	6	2	-	-	-	1	164
Riviera	83	108	116	115	292	201	162	166	137	127	98	79	63	56	52	101	101	118	2176
Roseville	29	38	36	61	72	56	58	57	61	61	82	52	45	36	38	11	7	1	801
Salvokop	202	236	258	702	1601	2101	1615	1073	672	384	238	117	62	13	17	4	1	4	9299
Scientia	1	-	1	1	7	6	6	4	9	9	4	7	4	-	1	1	-	1	62
Silverton	552	633	616	736	765	860	855	756	741	598	497	404	318	208	159	98	87	58	8940
Sinoville	244	368	449	491	431	343	482	515	460	445	413	378	383	161	147	91	84	55	5937
Sinoville Ext	81	103	168	191	181	139	165	153	178	184	188	130	94	32	33	15	16	10	2062
Skanskop	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sterrewag	34	36	36	24	80	89	90	75	61	27	24	25	15	8	10	-	1	-	635
Suiderberg	177	208	213	184	203	274	327	286	231	147	99	55	47	25	20	20	22	28	2566
Sunnyside	1291	1011	1001	2585	7129	4742	2580	1487	1135	794	594	603	436	325	311	287	238	224	26773
Technikon Rant	-	1	1	-	-	4	5	2	5	12	5	1	1	-	-	-	-	-	37
Thaba-Tshwane	337	435	458	373	615	912	843	713	529	310	133	74	41	21	10	6	9	3	5823
Tileba	50	48	69	89	72	82	83	84	82	46	48	43	35	20	16	13	9	3	891
Trevenna	81	56	38	177	488	373	177	69	55	35	17	27	14	6	7	5	6	1	1632
Val de Grace	69	78	79	110	91	96	118	130	118	103	136	111	65	64	37	13	9	3	1430
Valhalla	320	453	518	733	600	625	685	681	697	586	515	516	458	317	201	116	67	28	8117
Villieria	520	666	745	876	809	805	952	956	891	761	664	655	480	383	453	308	260	158	11343
Waltloo	6	-	1	7	24	36	20	17	19	15	5	5	1	5	-	-	-	-	161
Wapadrand	157	143	148	140	151	300	299	221	231	176	169	158	120	83	42	16	7	2	2564
Waterkloof	130	246	246	263	215	200	217	332	354	377	350	257	186	133	121	77	57	42	3805
Waterkloof AH	43	37	57	55	67	122	141	79	102	74	56	57	48	30	7	2	2	-	980
Waterkloof Glen	132	194	231	295	287	187	185	257	269	286	296	227	110	68	45	27	15	8	3121
Waterkloof Heights	59	61	66	74	61	58	73	92	92	65	70	44	31	21	18	15	2	5	906
Waterkloof Park	28	22	26	30	41	35	56	35	40	31	43	15	14	3	9	4	3	-	436
Waterkloof Ridge	301	350	463	505	440	398	531	608	714	570	512	434	321	170	149	97	42	29	6633
Waverley	330	430	533	593	435	428	565	580	598	522	435	399	345	255	268	165	95	34	7010
Weavind Park	110	90	84	106	179	242	206	148	117	106	93	100	77	47	17	20	9	1	1752
Weskoppies	90	65	63	91	341	546	294	230	148	104	93	67	31	32	15	14	6	-	2230
Wespark	326	428	439	469	466	494	515	465	389	256	178	183	103	58	35	28	2	5	4843
Willow Glen AH	79	100	90	110	141	130	118	144	145	165	169	155	103	83	54	47	36	46	1913
Willow Park	7	8	27	30	6	5	13	4	13	14	5	7	6	5	2	-	-		153
Willow Park AH	43	36	27	32	62	99	89	61	40	25	24	23	11	6	2	-		4	585
Willowbrae AH	27	18	12	20	32	39	32	32	30	36	9	6	11	2	2	-	2	-	309
Wingate Park	275	307	374	398	346	252	391	411	444	375	382	319	150	66	38	26	23	9	4585
Wolmer	282	325	414	449	401	365	435	365	364	255	218	182	137	105	62	42	26	13	4443
Wonderboom	184	289	363	438	412	322	371	386	446	397	444	410	313	178	112	55	29	29	5178
Wonderboom Aerodrome	1	1	4	13	32	34	51	22	13	4	1	1	-	-	-	-	-		177
Wonderboom AH	16	9	18	15	19	19	24	28	25	25	6	21	20	5	2	2	-	2	258
Wonderboom Nature Reserve	-	-	-	-	-	-	-	-	1	4	-	1	-	-	-	-	-		6
Wonderboom South	412	468	521	660	852	889	765	738	669	541	593	415	395	261	223	133	64	58	8658
Woodhill	72	71	60	37	22	51	97	112	64	32	31	17	13	9	2	8	-		697
Zwartkop Nature Reserve	-	-	2	-	-	-	-	-	1	1	-	-	-	-	-	-	-		5

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

ACCESS AUDIT CRITERIA

	vis	mob	hear	mom	old	comments
GENERAL						
Entrance						
threshold (step)						
identification						
visibility at night						
logical/appropriate placing						
reception						
counter_lower + recessed						
External signage						
legibility						
visibility at night						
parking/transport						
parking bay location						
disabled parking spots						
public transport - accessible?						
public transport - stop location						
surface change from parking to entrance						
portico						
ramp_gradient						
handrails						
stairs_nosings / colour diff						
handrails						

LAYOUT

foyer

- orientation
- circulation position
- circulation separation
- reception/info
- directional signage
- lift + ramp entrance - same as stair

wayfinding - general

- signage to w/c's + family space
- size and type of fonts
- colour use on signage
- graphics
- tactility of signage
- maps - tactile?
- emergency signage and alarms

outside / courtyard spaces

- seating
- level changes
- ramp_ all req
- stairs_all req
- lighting_all req

SPATIAL ASSESSMENT

main space/function

- entrance
- relative positioning
- level change?
- lighting
- glare
- lighting day time
- lighting night time
- control switches position
- floor finish, slippery factor
- floor colour
- floor level trip factor
- acoustic quality
- wall/ceiling - colour and contrast

toilet and ablution facilities

- wheelchair accessible w/c
- wa_w/c according to reg.
- location of wa_w/c
- separate wa_w/c or integrated?
- wa_ w/c door
- lighting
- family room/ change room

secondary space/function

- entrance
- relative positioning
- level change?
- lighting
- glare
- lighting day time
- lighting night time
- control switches position
- floor finish, slippery factor
- floor colour
- floor level trip factor
- acoustic quality
- wall/ceiling - colour and contrast

communication / equipment

- public telephones_height + position
- computers with visual aids

first aid

- room for assistance

NON PHYSICAL COMPONENTS

attitudes of staff

towards disability
education ito assistance
willingness to assist
training in place?

fire - egress

fire stair
alarms - visible and audible
alternative exit procedure
