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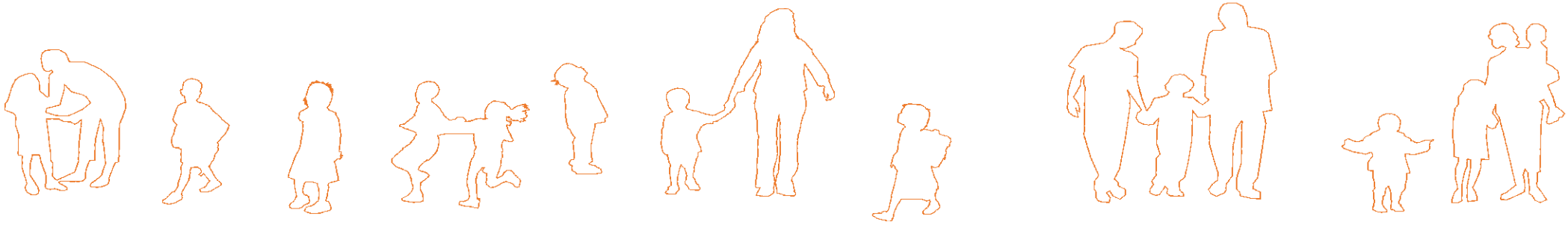
edu [play] care

THE IMPLEMENTATION OF A CHILDCARE FACILITY IN A CITY EGDE CONDITION TO CREATE AN ARCHITECTURAL TYPOLOGY THAT FACILITATES LEARNING THROUGH PLAY

trishal ramjee



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investigating the implementation of a childcare facility in a city edge condition to create an architectural typology that facilitates learning through play

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Submitted in partial fulfillment of the requirements for the degree of Masters in Architecture [Professional] in the Faculty of Engineering, Built Environment and Information Technology

University of Pretoria

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Theodore Roosevelt stated in 1907…

*"City streets are unsatisfactory playgrounds for children because of the danger, because most good games are against the law, because they are too hot in summer, and because in crowded sections of the city they are apt to be schools of crime. Neither do small back yards nor ornamental grass plots meet the needs of any but the very small children. Older children who would play vigorous games must have places especially set aside for them; and, since **play is a fundamental need**, playgrounds should be provided for every child as much as schools. This means that they must be distributed over the cities in such a way as to be within walking distance of every boy and girl, as most children cannot afford to pay carfare."*

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abstrak

Die Noorde en Noord-Westelike kwadrante van Pretoria word ge-identifiseer as wat aandag vir die verjonging vereis. Die raamwerk kyk na “konnektiwiteit deur aktiwiteit” en die terreine bind die skeppende nywerhede, erfenis roete en voetganger paadjie [voorgestel vir die gebied] vas. Daar word besef dat deesdae die ideale dikwels onmoontlik word om te bereik. Ook is dit dikwels in die meer digbevolkte gebiede, waar die grond waarde die hoogste is, dat daar 'n nogdigheid vir genoeg ruimte vir kinders word. Hierdie kinders se waarskynlike huise is 'n beknopte woonstel met geen tuine om rond te loop of te speel nie. Met die voorstelling om die behuising in die raamwerk vir Pretoria se stad te vermeerder en om die stedelike sentrum digtheid te verhoog, kom ekstra verantwoordelikheid om die jongste generasies van die stede te akkommodeer.

Met hierdie gedagte moet die ontwerp voorstelling na die skepping van 'n pre-primere skool kyk. Ook moet daar 'n openbare speelgrond gekoppel aan 'n voetgangers interblok loopvlak wees. 'n Nuwe revolusionere benadering tot opvoedkundige geboue moet ondersoek word in terme van “leer deur te speel” deur “ uitbreiding die veld van speel” en die integrasie van ontwerp tegnieke van beide argitektuur en landskap argitektuur om 'n holistiese ontwerp presedent te skep sodat die jong gees gestimuleer sal word.

abstract

The north and north-western quadrants of Pretoria have been identified as requiring attention for rejuvenation. The framework looks at “connectivity through activity” and the site ties into the creative industries, heritage route and pedestrian walkway proposed for the area. It is realised that in this day and age the ideal is often impossible to achieve. Paradoxically too it is often in the more densely populated areas, where land values are highest that there is the greatest need for ample space for children, whose probable home is a cramped flat, with no garden in which to run about and play freely. With the proposal to increase housing in the framework for Pretoria's city and, in a bid to densify the urban centre, comes the added responsibility to accommodate the youngest generations of city dwellers.

It is with this in mind that the design proposal looks at the creation of a pre-primary school and public playground connected to a pedestrianised inter-block walkway. A new revolutionary approach to educational buildings has to be investigated in terms of “learning through play” by “extending the field of play” and incorporating design techniques of both architecture and landscape architecture to create a holistic design precedent that will stimulate young minds.

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figure 1.1

01

Introduction

child·hood [chīld'hud']
noun

- The time or state of being a child.
- The early stage in the existence or development
- a human between the stages of birth and puberty

[http://www.answers.com/topic/childhood]

With the proposal to increase housing in the framework for Pretoria's city and, in a bid to densify the urban centre, comes the added responsibility to accommodate the youngest generations of city dwellers. We live in an era where, in numerous households, both parents are required to work and where there is the growing phenomenon of single parent households either due to the AIDS pandemic or separation. In many cases the children are left alone without adult supervision to fend for and entertain themselves.

It is with this in mind that I propose to design a pre-primary school [private] after-school care [private], playground [public], and associated utilities. This facility will accommodate the needs of the working caretaker by supporting and formalising the existing informal childcare structure composing of: taking the child with to the place of work or leaving the child in the care of family members or friends.

The north and north-western quadrants of Pretoria have been identified as requiring attention for rejuvenation. The framework looks at "connectivity through activity" and the site ties into the creative industries, heritage route and pedestrian walkway proposed for the area. It is realised that in these days of rapidly escalating land and building costs, the ideal is often impossible to achieve. Paradoxically too it is often in the more densely populated areas, where land values are highest that there is the greatest need for ample space for children, whose probable home is a cramped flat, with no garden in which to run about and play freely.

Although extensive studies have been carried out and documented on the effects of learning through play and optimum conditions for education, schools in Pretoria still lack successful implementations of these strategies. A new revolutionary approach to educational buildings has to be investigated in terms of **"learning through play"** to accommodate development in research. The pre-primary school should complement the home experience of young children and form a link between home and the wider environment of the pre-primary school. The ages of the children will vary between three and six years [day-care] and six upwards [after-school care]. This is the period when their enquiring minds will constantly be searching for new experiences. The school should provide a challenging environment for investigation and effort. They will rapidly be developing their social, cognitive and language skills and here they will have the opportunity for the companionship of other children as well as healthy relationships with adults other than their parents. The importance of play in the development of young children cannot be over-emphasised and at pre-primary school they should have the opportunity of experiencing a much wider range of play activities, both indoors and out, than is possible at any home [Natal Education Department 1979].

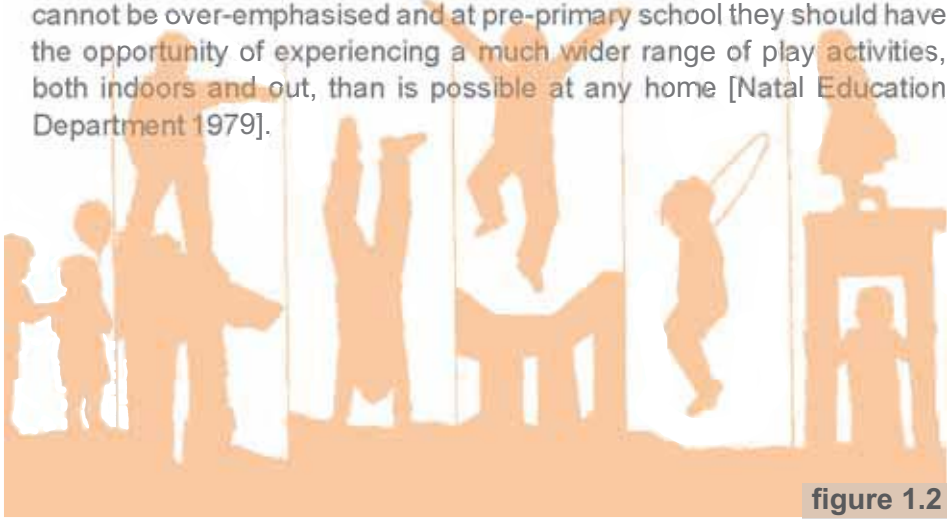

figure 1.2

figure 1.3

figure 1.4

figure 1.5

figure 1.6

The “Commissioner of Parks in New York City who reportedly stated, when asked his opinion of the standard playground that the Parks Department had been constructing for over thirty years, that what had been good enough for him was good enough for today's children” [Dattner 1974: 20]. This naive attitude is still apparent to this day and can be related to education and the pre-primary building typology. As a result children are not fully prepared for primary schooling.

Previous proposals fail to acknowledge and establish links between inside and outside to their detriment. One should not design a building on a site but rather aim to design the site in totality as an inter-operational entity. **The transition from the public-to-private realms, playground-to-building, outside-to-inside and formal-to-informal** needs to be determined through a careful integration of landscape and architecture where the in-between zones and interfaces are scrutinised. Educational facilities, offering an alternative more creative edification, ought to be innovative in their design in order to best encourage growing and inquisitive minds.

“Several years ago two 350 pound gorillas were turned loose on a new set of swings in Central Park. When it was found that the animals did not destroy the equipment, the playground was pronounced fit for New York City's children…The simplest maintenance measure, to be sure, would have been to exclude children, but that was clearly an Utopian solution…This kind of playground conforms to the requirements of administrators – it is simple to build, indestructible, and noncontroversial” [Dattner 1974: 35-36].

If a design is successful “it is to the extent that the designers have listened to that which is playful in children, and in themselves.”

-Richard Dattner

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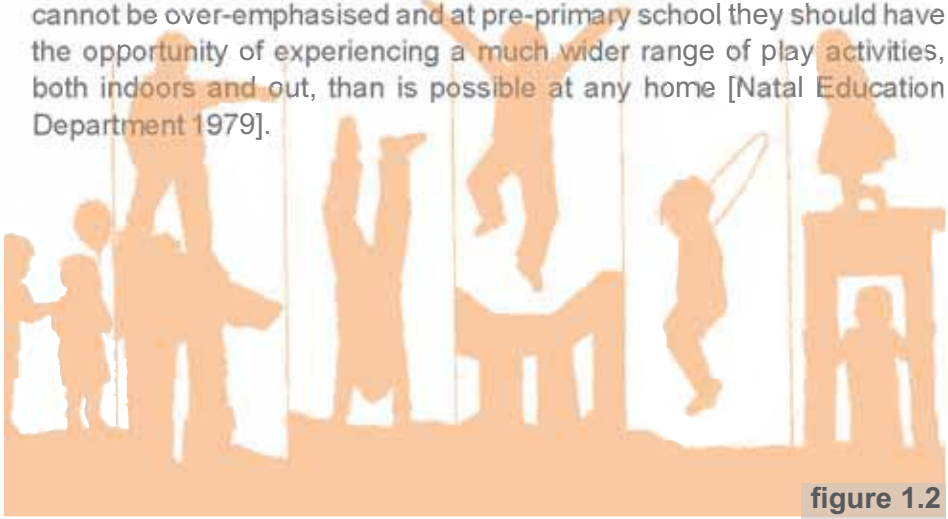

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02

review and reasoning

rationale...

The next best thing to a playground designed entirely by children is a playground designed by an adult but incorporating the possibility for children to create their own places within it.

-Richard Dattner

Of foremost importance is the need to design a facility that fosters learning that encompasses the various theories presented to create a holistic design approach.

Many proposals for Pretoria look at the densification of the city in an effort to decrease the rate at which urban sprawl is occurring. However, one has to face the fact that the majority of people do not aspire to live in the city but rather strive to acquire their dream of living in a suburb with a “white picket fence” notion. So one has to ask oneself: how, as designers, can we make the city alluring? I presented myself with this challenge when choosing to work in the city. One possible solution I arrived at was to make the prospect of interacting with the city more attractive through convenience by providing an amenity on a site that is close to places of work and easily accessible to public transport. It also appeals to a parent's desire to want the best for their children.

The proposed pre-school should act as a catalyst for creating a sense of community in a city, where none exists, and for broader community improvement by becoming a communal centre and expanding to accommodate as the need for various additions [such as a clinic, night classes, communication services etc.] arises. This will ensure that the centre becomes an inherent part of the community utilised throughout the day.

importance of study...

Youth is wholly experimental

-Robert Louis Stevenson

We are in an age of progression where education is seen as key in one's personal development and success. The question arises as to what role an architect can play in community upliftment and education. As designers it is our responsibility to encourage progressive thinking by proposing a culmination of all related fields [architecture, interior architecture and landscape architecture].

The worrying factor is that even though much development has been made in education, many of the schools being designed in South Africa, and particularly Pretoria in this case, are not advancing towards more dynamic, interactive or contextual designs.

This proposal, like youth, is experimental and can be seen as a stepping stone to better understanding and defining the ideal.

defining the problem...

When children become interested in the natural and man-made world, their curiosity is best satisfied by first-hand experience - actually doing, rather than abstract discussion

-Richard Dattner

My inquiry probes the premise of how to create a pre-primary school in a city edge condition by looking at the design informants of:

- The specific requirements of children in a learning environment
- How architecture can assist in education in terms of “learning through play”
- Integration of landscape and architecture; inside and outside to widen the boundaries of learning from the classroom to play spaces outside
- Transitioning from informal to formal in an attempt to contextualise the school

My investigation looks at how one can create a pre-school that facilitates education to nurture children to their maximum capabilities and potential.

aims and objectives...

With this dissertation I strive to push the boundaries of what is considered normal and conventional to create a new architectural educational play typology for childcare facilities that explores the potential previously uncultivated. This thesis aims to present the shortcomings of past attempts at childcare facility designs and to investigate and contextualise the best possible solutions and implementations to create a revolutionary educational and play hub.

A site becomes a place when the link between architecture and context is established. This could be achieved by capturing the spirit of the place. The site is positioned on the fringes of a frayed urban fabric and is, in itself, a lost space that needs to be reclaimed. The site has been left to the devices of taxis and is surrounded by constant activity yet it fails to capture a celebration of its significance in relation to the urban fabric.

research methodologies..

- **Literature review**

  Research and analysis of existing literature and theories on subjects pertaining to the topic and review on how the finding can be utilised in the design of the proposal.

- **Case studies**

  A review of similar projects in an attempt to pinpoint admirable features, to possibly apply to the design, as well as possible downfalls

- **Context study**

  A detailed inquiry into the site and its surrounding context including frameworks, zoning, topography, climate, access, history of the site and buildings of cultural and historical value around the site.

- **Material exploration**

  A study into building and cladding materials to determine what would be most suitable for children so that it will, most importantly, not be detrimental to their health

- **Quantitative study**

  - Population densities.
  - Number of people on average travelling to /from the city.
  - Estimated increase in residents after implementation of proposed residential components.
  - Population of children residing in the city
  - Number of children travelling to the city for education
  - Modes of transport to/ from the city and most popular mode

- **Studies on educational strategies**

03 overview of literature and theoretical arguments

learning through play...

We are conditioned by the experiences we are exposed to during the course of our lives so is it not in the best interest of future generations that this process of transference of knowledge and skills be imparted when one is still young and impressionable? In order to accomplish this one has to understand the way in which children learn where the most pragmatic and effective method is through play. When one understands how children play and what they require only then can an effective design be proposed.

"An educational Utopia is a place where work is play and play is life"
- Whitehead

Play is the way that children learn about themselves and the world they live in. Their intelligence and personality grow when they encounter and conquer new situations.

"We can best understand what play is if we think of it as opposite to work – the two terms to a large extent define each other. The difference between work and play is not always obvious from examination of the activity but has to do, rather, with the mode of acting, or the reason for which the activity is performed. This is not to say that work and play never overlap or coexist; the motivation behind an activity is complex, and often contains elements of work and play. For our purposes, however, it is useful to emphasise the unique qualities of each, so that we can form a clear picture of what conditions are essential or desirable for play" [Dattner 1974: 7].

"The literature written about play and by creative persons is full of references to the play element in all forms of creativity, and many parallels may be drawn between play and the act of creation" [Dattner 1974: 9].

According to Sigmund Freud, and succeeding writers, it is apparent that child rearing practices, in a variety of cultures, establishes the importance of childhood experience in the development of the adult personality and demonstrated that play is a major component of that experience. "Train up a child in the way he should go: and when he is old he will not depart from it" [proverbs 22:6]. Adult influence on play is one way in which a society transmits its values and prepares children to participate in the adult world. One needs to create an environment of play that will nurture the traits which reflect the highest aspirations of our society because it is through play and socialising that the values and norms of a culture are transmitted through generations. "... a tradition, a form of regulation and ritualized behaviour that reproduces the regulations of society in miniature...children learn the rules of the adult world they will inhabit from the rules of their play as children" [Dattner 1974: 20].

The function of play in childhood has been essentially misunderstood in the past. “Surprising numbers of people still maintain that the primary function of play is to 'let off steam' so that the child can return to the more important business of study and learning” [Dattner 1974: 23]. Yet countless studies of how intelligence develops in children show that precisely the reverse is true – that play is the way in which children develop intelligence. To put it simply, play is a child's way of learning.

It is essential to understand the way play and intelligence are related if one wishes to design a play facility that will encourage learning. Behaviourists, like psychologist Ivan Pavlov, are of the opinion that environment is the primary factor in the development of intelligence. The interrelationship of the environment and intelligence is best expressed in the works of Jean Piaget who maintains that intelligence is a form of adaptation which consists of continuous creative interactions between an organism and the environment. Life thus becomes the process of creating increasingly complex structures of behaviour where the organism acts, perceives its effect on the environment, and modifies its behaviour to a more complex form to better cope with the environment. [Dattner 1974: 24]

“...small children need a place where they can develop self-reliance, where they can test their limbs, their senses and their brain, so that brain, limbs and senses gradually become obedient to their will”

[Allen 1968: 14]

figure 3.1

phases and types of play of the different age groups

birth to 18-24 months	18-24 months to 4 years	4 years to 7-8 years
Sensorimotor phase ▪ Instinctive reflexes [e.g. sucking thumb / closing hand around objects] ▪ Searching for objects ▪ Following motion of hand with eyes ▪ Awareness of depth and space ▪ Imitation	**Preconceptual phase** ▪ Ability to create symbols ▪ Imitation of activities ▪ Learning of language ▪ Use of imagination	**Intuitive phase** ▪ Conceptualisation ▪ Intuition is relied upon ▪ Organisation of experiences ▪ Relentless questioning
Practice play ▪ Repetition ▪ Pleasure in being the cause of an external event [e.g. continuously dropping an object]	**Symbolic play** ▪ A way to assimilate the emerging skills of representing [symbolising] objects and events ▪ Make-belief ▪ Identification of one thing with another [e.g. a stick becomes a plane] ▪ Acting out of wish fulfilment **Parallel play** ▪ They may play together, but without paying attention to the children around them, engrossed in their own fantasy world	**Social play** ▪ Becomes aware of other children and attempts to imitate their activities ▪ Tries to understand the rules of the world of older children ▪ Play games with rules ▪ Transition between fantasy and reality

figure 3.2

PHYSICAL GROWTH AND ACTIVITY DEVELOPMENT

- During the pre-school period of a child's life **make-believe play** becomes very important. There is rapid development within the realm of imaginary activities as play evolves from "...disjointed bits of pretence to integrated and internally consistent sequences of make-believe" [Bengtsson].
- From age three, walking becomes automated and children are more confident and daring. They have good **climbing** ability and can descend long stairs alone. It is imperative for cognitive development that they have opportunities to do so.
- Wanting to exercise these new abilities, children engage in a period of persistent **investigation** and **furious activity**.
- Great interest in simple self-propelling vehicles, making combined playthings and **sand and water play**.
- By age four, there is a marked rise in activity and in the desire **to explore the larger environment**. They want to go on short errands outside the classroom.
- Increase in the constructive use of materials, as imaginary **two-dimensional structures are built** in dramatic play and dressing.
- By age five, they can build complicated, three-dimensional structures in which several materials are combined and form the base for extensive dramatic play
- Children want and need to further explore the physical environment they occupy. They need excursions and can recognise landmarks and even have the ability to cross streets.

[Moolman 2001: 7]

DESIGN CLUES

Role-play, Creative Zone and Fantasy Zone are very important

Allow for constant opportunities where climbing, sliding and exploring can take place – thus play area does not necessarily need to be separated from the building structure

Sand and Water Play Areas

The school has to be a safe but adventurous environment

PERSONAL AND SOCIAL DEVELOPMENT

- At pre-school level children become more complex and richer individuals with a growing awareness of the social environment.
- In the formation of self-concept, there is a strong need for the differentiation and affirmation of self. Peer-reaction is of lasting influence on the child's sense of individual competence.
- Children who have a physically secure and emotionally stable setting are likely to explore further in the physical environment.
- In the third and fourth years, children engage in associative play in small groups of two or three.
- By age five, children will spend more than half of their time with peers. The importance of social play during this period cannot be overstated. "A child who, for personal or other reasons, lacks opportunities to play with age mates misses out on vital learning experience" [Pollowy: 18].

[Moolman 2001: 8]

DESIGN CLUES

Again two major themes exist: Exploration and Social Play. It is clear that exploration is built on a sense of security and on physical opportunity. The location of the site and planning must therefore create a strong sense of security while still allowing for freedom of exploring.

Socially, the peer group becomes more and more important, and spontaneous socialisation opportunities should exist...

INTELLECTUAL AND PERCEPTUAL DEVELOPMENT

Intellectual Development

- The child is beginning to form mental representations of the environment [being able to familiarise routes]. During this period, the child functions on a spatial system of reference based upon fixed environmental elements.
- At this time the differentiation of spatial relations is begun with an awareness of inside-outside, top-bottom, and front-back. “The young child's penchant for getting 'into', 'out of', 'under' and 'on-top' of things, from cupboards to closets, to tables to cardboard boxes is vital to expand and solidify his growing sense of spatial relations” [Pollowy :21].

Perceptual Development

- Distance perception is still under-developed during this phase and until the age of six, children match objects on the basis of colour.

[Moolman 2001: 9]

DESIGN CLUES

This system of reference is centred on the immediate classroom experience first and then subsequently around landmarks and familiar places.

Create opportunities for varied types of play

criteria for design...

"Architects pick up bits and pieces from here and there, and fit the children into the playground, rather than the reverse"

[Allen 1968: 15]

The challenges presented are that the facility is used by a number of distinct groups, each of which has requirements, which are sometimes conflicting, based on their own needs. The main users of the facility, or those most affected by it, include the children, parents, other adults [elderly and neighbouring residents] and city administration.

Faults of existing play facilities:

- Preoccupation with maintenance and durability to the point where materials, that are not child friendly, are used
- Lack of anything to inspire interest or curiosity

Aspects that need to be taken into account during design:

- Safety
- Accessibility
- The environment must provide the individual with an adequate range of experiences
- A measure of control by the individual must be allowed for
- Experiences for every sense are needed [should be like a small scale replica of the world]
- Objects and play items should be interactive and moveable
- Graduated challenges [new skills and abilities to master]
- Various choices of activities should be provided for
- Elements to encourage fantasy play
- Water and sand are always sources of amusement and entertainment
- Ground shaping and difference of levels

[Dattner 1974, Allen 1968, and Allen 1964]

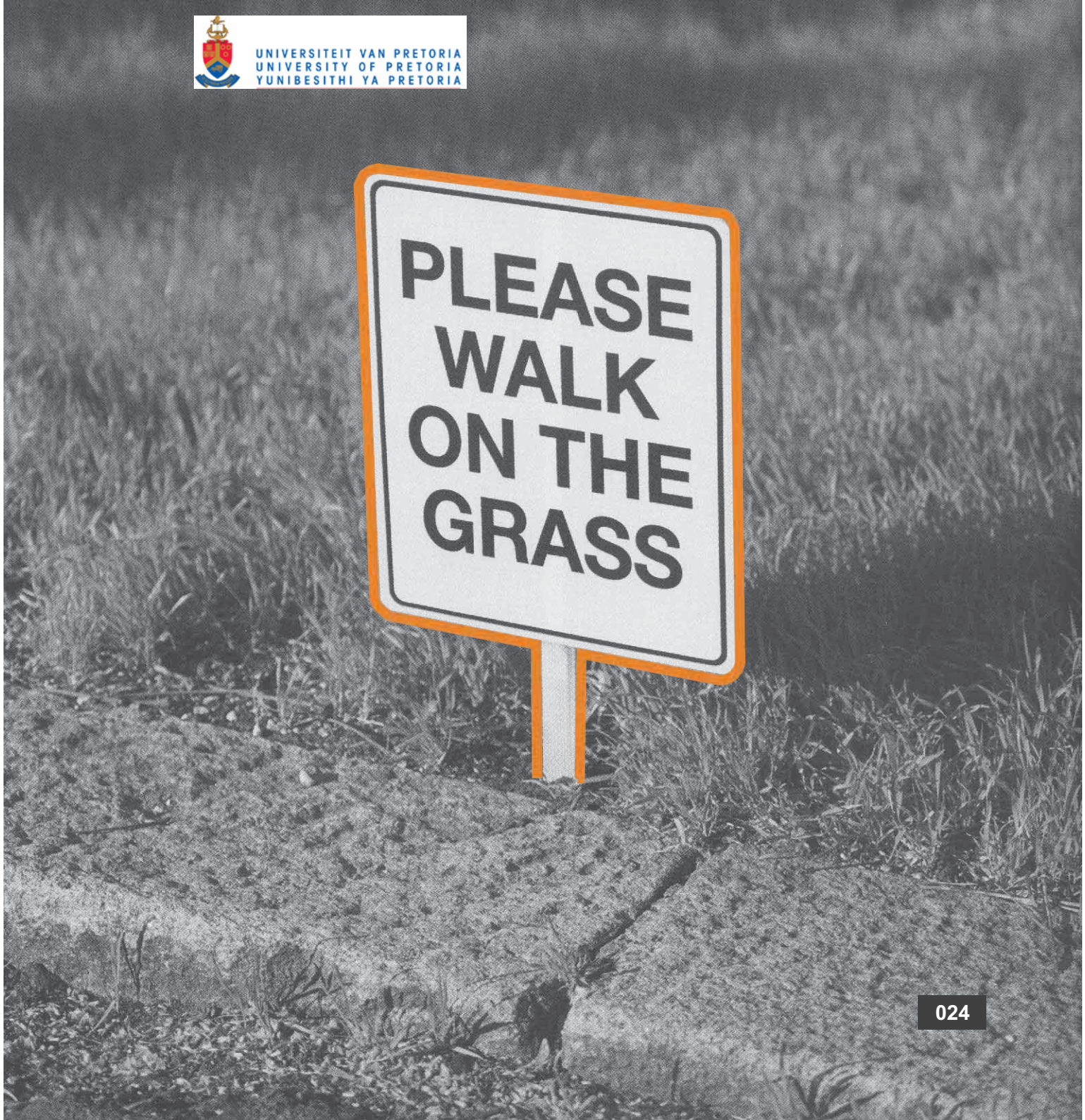


figure 3.3

landscape and architecture: inside and outside...

In order to activate the premise of “learning through play” to cultivate children's: physical growth and activity, personal and social, intellectual and perceptual developments, the educational field has to be extended to outside of the classroom. It is this extension and transition to the world outside of the building that will prove to be vital to a successful design.

Territories between architecture and landscape architecture need to be explored in order to create an amalgamated design where the interconnections between the two are reconceptualised. The concepts of man-versus-nature, formal to informal, hardscape and soft-scape need to be reinvestigated in the following discourse as not many design projects succeed in fully incorporating the opportunities offered by the integration of the two fields. An effective transition from playground to school building is vital and methods in achieving this will be explored. According to Berrizbeitia and Pollak, our experience of living in the world between inside and outside is disconcertingly limited.

The following excerpts help in the understanding of why a rift exists between the two disciplines...

Sven-Ingvar Andersson has stated that “...architecture and landscape architecture are identical because of their mutual and identical concern with space” while other critics have suggested that “...this concern for space is completely different because of the different material and spatial qualities” [Birksted 1999: 3].

“Over the past decade, dozens of anthologies about the contemporary designed landscape have been published. Few offer a critical lens for comparing, or even understanding, design vocabulary and operations. Most are loosely edited collections of various designers' images and descriptions of their work Publications on architecture have, admittedly, a better record of critical assessment. But their discussions about the landscape are too frequently restricted by a rhetoric of architectural hierarchy and dominance over landscape” Elizabeth Meyer: Associate Professor, Department of Landscape Architecture, University of Virginia School of Architecture [Berrizbeitia & Pollak 1999: 9].

“Until the mid- 1990's, architects typically considered landscape architecture a discipline auxiliary to their own...even worse, landscape was thought by some architects to be a dying discipline, sentimental in its preoccupation with nature and out of touch with the urban focus of contemporary life” [Hays 2004: 6].

In 2000 Paul Bennett described landscape architecture as “a new frontier, a discipline perhaps more fertile for developing new concepts than architecture” Bennett explains the preoccupation with landscape with the term 'context trumps objects' [Hays 2004: 6]

“For buildings to become more than objects, architects must recalibrate their field of perception spatially, temporally, and conceptually, moving beyond the limits of the building to the contexts in which their work will be situated and to which it will ultimately contribute” [Hays 2004: 8].

Yet there are many, including the author, who are of the opinion that landscape architecture is equal in merit to architecture and recognise the potential of their merge. In essence, landscape and architecture should have an interdisciplinary relationship that brings together different modes of thought that are transferred across the disciplines and transcends into a new context focusing on how elements share an urban space, an ecosystem or a temporary framework.

This investigation attempts to uncover relationships between architecture and landscape that are often overlooked. Architecture and landscape occupy each other's conceptual and physical space yet the various factors resulting in the conflict between the two, impacting negatively on the built environment. Consequently, projects are isolated and disjointed efforts that do not reach their full potential.

"Landscape is [now] within architecture because architecture is [always] within landscape"

[Hays 2004: 7]

"The exploration of the territory between architecture and landscape reveals how relationships that transgress disciplinary boundaries can contribute to the definition and enrichment of a discipline. This in-between territory also engages each discipline's expanded field of relationships, including other disciplines such as urban design and ecology. Thus, a building project might engage topographical concerns that would once have been assumed to be a part of landscape architecture; or landscape might affect orders of an interior, typically thought of as within the domain of architecture. Yet projects cannot endlessly enlarge their scope of concerns and still maintain their power or integrity. A successful project constructs relationships in precise ways to produce a new set of concerns, with its own set of parameters" [Berrizbeitia & Pollak 1999: 10].

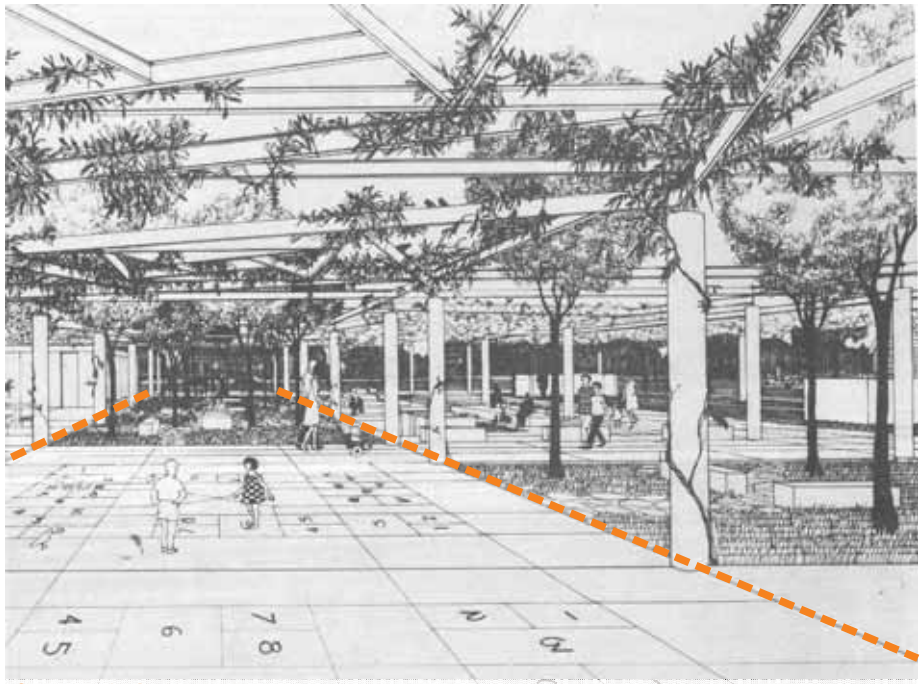


figure 3.4 playground attached to school: New York

Birksted draws the conclusion that it is necessary to achieve a successful integration of the two disciplines "...architectural design as different from landscape architecture...must be replaced either by a graduated and gradual axis where one end represents architecture as landscape and the other end represents landscape as architecture with a range of continuous variations between the two...where the differences and similarities – criss-crossing and overlapping – are superimposed in complex ways so that any one binary opposition is denied" [Birksted 1999: 3].

David Leatherbarrow's contribution puts forth the notion that they are merely similar and share two factors. Firstly their common origin lies in creative making and design and secondly the common topic of topography [theme, framework and place]. [Leatherbarrow 2004: 1]

Previous studies have explained children's experience of place and their special preferences for the unbuilt and unstructured environment. However, the impact of a natural environment on children's learning and development has been a topic of low priority within child research and the importance of natural play-scapes for children has also been neglected in physical planning. The play-scapes comprise the ground for training of motor fitness in children. Through all-round playing and exploring the natural play-scape, the children's motor fitness can be improved. [Fiotorft & Sageie: 2000: 83-97]

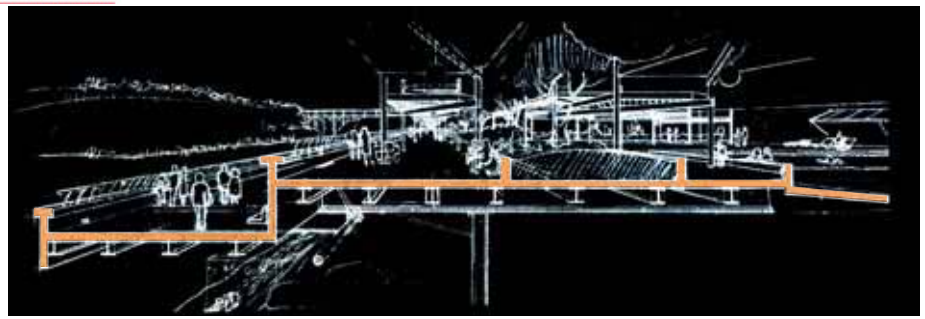


figure 3.5 promenade: New York

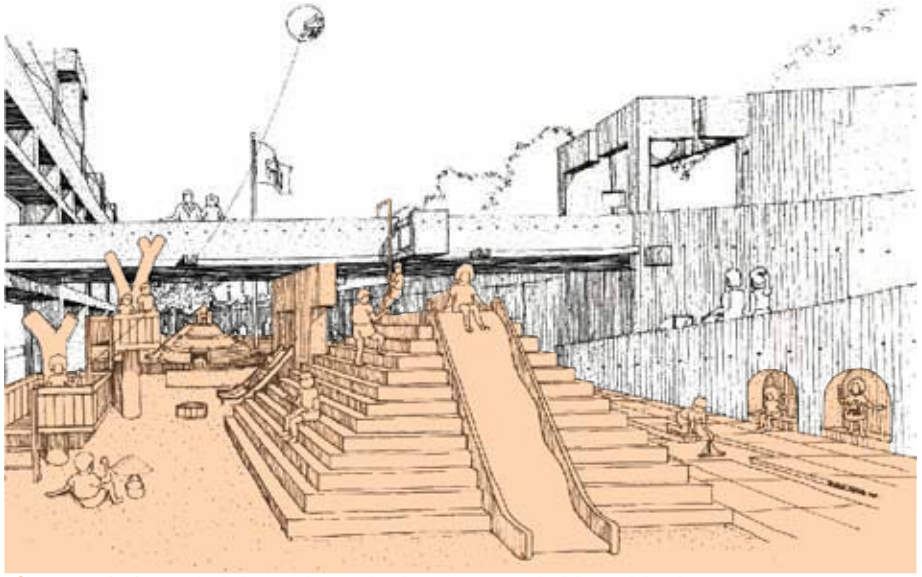


figure 3.6 neighbourhood playground: New York

In *Inside Outside*, five integrator operations are outlined that articulate a conceptual approach to relations between the two fields where the term operation is defined as "procedure or process of a technical nature that constructs a specific mode of relation between elements" [Berrizbeitia & Pollak 1999: 10].

Reciprocity stands against hierarchy, an ordering principle through which architecture has historically subjugated landscape. It opposes the idea that landscape is merely the ground on which architecture sits.

Materiality critiques the conception of landscape and architecture in aesthetic terms by focusing on how both practices share the operation of reconfiguring matter.

Threshold disqualifies a fixed and static conception of boundary but rather promotes the continuity between two entities.

Insertion questions the figure-ground formulation of the city where 'open space' is that negative entity left over around buildings. It looks at rather setting up activities of relating between a space and its surroundings.

Infrastructure criticises an assumption of landscape as ordinary ground. It is said to be the visible graft that joins landscape to architecture that challenges the conception of landscape whose art is dedicated to concealment.

[Berrizbeitia & Pollak 1999: 11-13]

design intentions...

- Utilise the five operations, as outlined in *Inside Outside*, to assist in creating a **design that integrates landscape and architecture**
- **Design the site as a whole** rather than a building on a site
- Incorporate the playscape with the building with emphasis on **interactivity**
- Experiment with the thresholds and interfaces to create a **dynamic transition** from outside to inside
- Design the building to **become a part of the outdoors's play features**
- **Reinforce the idea of "learning through play"** through the connection of the outdoors and indoors
- Reconcile disjointedness in architecture, landscape architecture and interior architecture to formulate a **holistic approach to design**
- Have not just a building but rather **a site that fosters learning**

reclaiming lost space and involving community to create defensible space

Roger Trancik identifies lost space as "the vacant unused land in city centres, the land that is not integrated into the urban fabric, where design decisions were made in two dimensions. Lost space is land nobody cares about and no one takes ownership of. It results in disjointed pedestrian links and an unpleasant experience. However, lost space in city centres provides the ideal opportunity to create an urban centre, so that it attracts people to these areas. [Trancik 1986: 1]" [Hansen 2007: 2.02].

Interventions can be implemented to give rise to a new identity to an area and express the inherent genus loci which is essentially the 'spirit of place'. The reprogramming of a lost space can assist in transformation by adding a new layer to regenerate a part of the city.

Aldo van Eyck thought of the ideal city as a labyrinth of small, intimate territories. A playground on every street corner was just a first step on the journey to the "ludic city": the city of play. He laboured on his belief that: "Whatever time and space mean...place and occasion mean more." The Dutch have always regarded children's games as a preparatory stage in the growth of public life and citizenship. In one of his essays van Eyck wrote of cities: "If they are not meant for children, they are not meant for citizens either. If they are not meant for citizens – ourselves – they are not cities." [Worpole 2002]

In a project where the main users are children, not capable of protecting themselves, it is paramount that the issue of safety is addressed. The early development of the defensible space approach is attributed to one person, architect Oscar Newman. From his case studies the conclusion he arrived at was that the problem seemed more to do with the characteristics of public spaces than of the people who lived there [Cisneros 1995: 5].

"Defensible space relies on self-help...It depends on resident involvement to reduce crime and remove the presence of criminals. It has the ability to bring people of different incomes and race together in a mutually beneficial union. For low-income people Defensible Space can provide an introduction to the benefits of mainstream life and an opportunity to see how their actions can better the world around them and lead to upward mobility" [Newman 1996: 9].

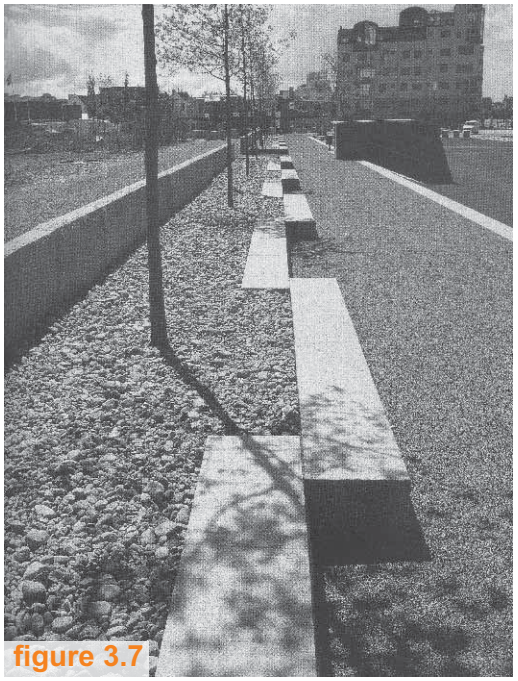


figure 3.7

Newman's observations to be incorporated into the design process and the design of the site including surrounding context...

- Community participation is key
- Residents need to be able to identify with the public spaces and not feel disassociated in order for users to maintain the space
- An accord needs to develop about acceptable behaviour in these areas
- Propriety feelings are crucial in order to distinguish resident from intruder

- **Intensify surveillance by revamping pathways around the site to include benches, planting and sufficient lighting at night to increase pedestrian traffic**
- **Incorporate vandal resistant products that are not institutional in appearance**
- **Spaces should be zoned to accommodate children, teenagers, adults and elderly to achieve usage resulting in the prevention of unfavourable loitering**

[Newman 1996]

can be controlled by the designer

04_1

International precedent studies

dragen children's house

Architects: C.F.Moller
Location: Odense, Denmark

description...

"The fundamental architectural concept is a simple and clear geometric form on two levels, with the children's areas located in the best-lit southern end. The two levels are linked by staircases and ramps which are designed to stimulate and challenge the children's sensory and motor skills.

"There is far more space available than in traditional kindergartens," says Odense's councilwoman for Children & Young People's Services, Jane Jegind, "and there is a pedagogical idea to the interior design. The entire architecture is supporting the ambitions Odense Municipality has for the children's development - namely that they enjoy attractive and challenging surroundings for learning and growing."

As an example, the Dragen Children's House has small niches distributed throughout, where children can play, read or just withdraw. In addition, there are purpose-built spaces, giving the children special opportunities: there is a small theatre, atelier, motor skills room and pedagogical kitchens indoors and out.

The building respects the environment, energy-savings and not least the health of the children and employees. The highly insulated construction will consume less than 20 percent of the energy used for a standard building. Passive-houses built of healthy materials have also been proven to reduce the spreading of influenza, meaning fewer sick-days for children and adults.

The building is constructed from pre-fabricated wooden insulated wall segments, and generous glazed facades provide day lighting and passive solar heating. In addition the building integrates solar hot water and electricity generation and a mechanical ventilation system with heat recovery. A touch-screen at the entrance informs parents about the current energy-performance, and provides info and updates from the pedagogues" [Child's play 2009].

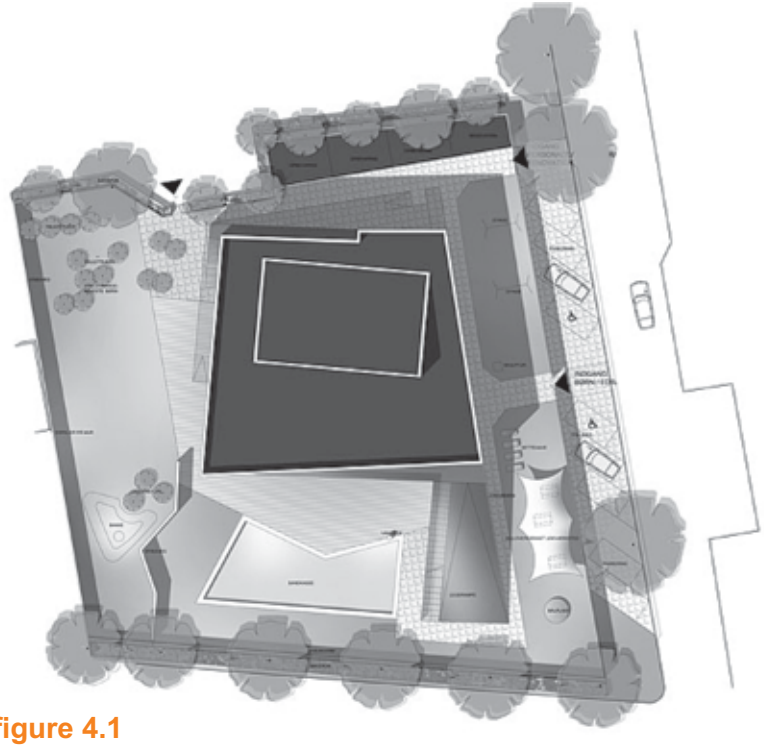


figure 4.1

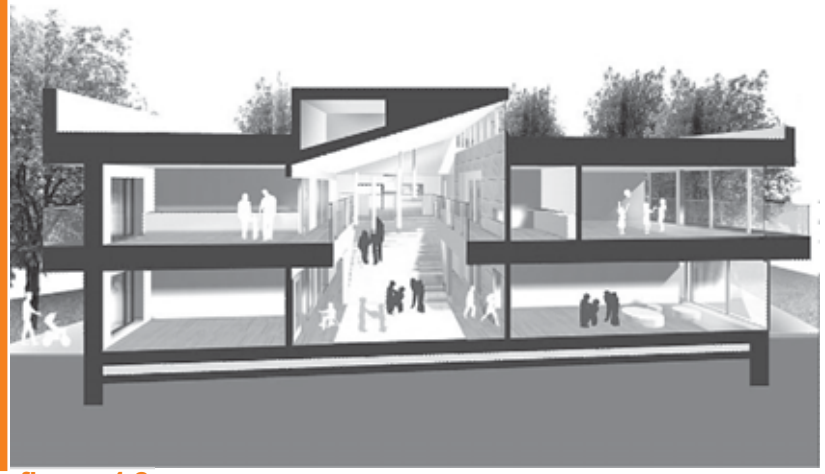


figure 4.2

figure 4.6

figure 4.3

figure 4.4

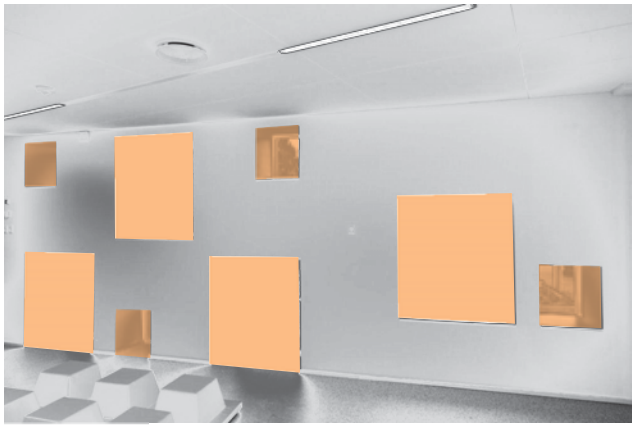


figure 4.5

day-care centre [in skanderborggade]

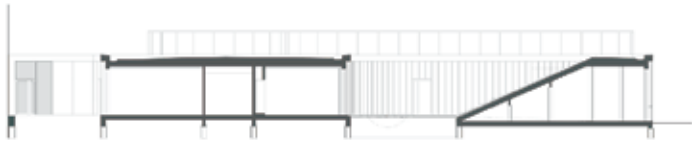
Architects: Dorte Mandrup Arkitekter
Location: Copenhagen, Denmark

description...

"The building design is the result of the authorities' planning regulations and the call for the greatest possible connection between the outdoor areas of the ground and roof plans, taking optimal advantage of site's sun orientation. The building consists of two planes which extend to the boundaries of the site. One plane forms the ground terrain covering the contaminated ground, a second forms the roof. The ground terrain surface is folded upwards in such a way that it forms a hill or slope between the ground and roof.

The path of the summer sun from northeast to northwest traces the cut of the slope. The slope angle offers the best sun exposure to both the slope and the courtyard from the south and west. Underneath the slope forms an unheated space where a forest of columns is used for swings and other forms of play, when the weather is cold or wet. Two other light wells cut into the roof plane ensure daylight and a variety of outdoor space in conjunction with the other rooms of the building" [Brighten up the Neighbourhood 2009].

figure 4.7



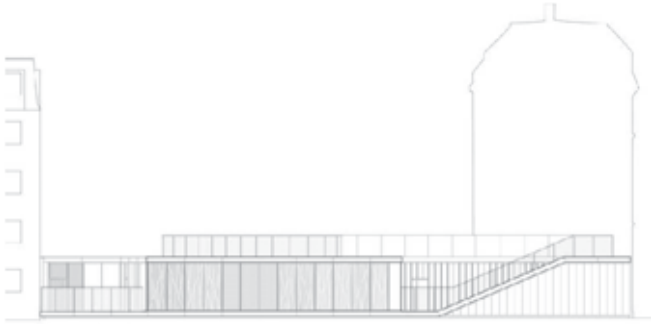


figure 4.8

figure 4.12

figure 4.9

figure 4.10

figure 4.11

infant educational centre [cullar vega]

Architects: Solinas + Verd Arquitectos
Location: Granada, Spain

description...

"The project articulates itself around the idea of creating a permeable building, in which the relationship between exterior and interior spaces is always protagonist. The general disposition is based on two differentiated and complementary axes. The transversal axis concentrates most of the public services and administrative areas. The longitudinal axis corresponds to the teaching activity, where classrooms are located.

Access to the building is totally differentiated for persons and vehicles. The school looks in its perimeter for an alignment with the existing urban structure, through a wall dense enough to fulfil this task, but at the same time permeable to allow a view of the interior of the enclosure, thus we come to such a usual image in the popular architecture of wall that conceals a garden. The rows of poplars also help to qualify this picture of the interior and integrate with the surroundings.

The main entrance to the building is through a gardened atrium that groups around it the way of access, the administrative area and the dining room of the centre. The way of entry is covered by a projection of concrete that marks us the way and gives the scale of singularity that the building claims. The architectural solution of this centre avoids being pretentious and complicated, but it tries to give an individualized picture of architecture, reflecting its institutional character. It provides a comfortable, cheerful and clean setting, which contributes not only to facilitate the teaching, but also to develop in students habits of conviviality and good relationship with the school environment.

The multipurpose room has a central role in the configuration of the building being on both public and teaching space. Its position in the middle of the building is very appropriate to access from any classroom in a comfortable and efficient way. Next to the multipurpose room is linked the covered porch necessary for the children's recreation when the climatic conditions are adverse. This space placed in the middle of the common play area carries out its function of protecting from the rains during the winter days and providing shadows in the hot spring days. It has been orientated

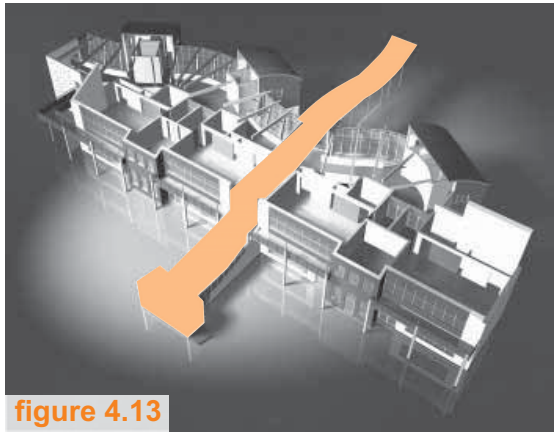


figure 4.13

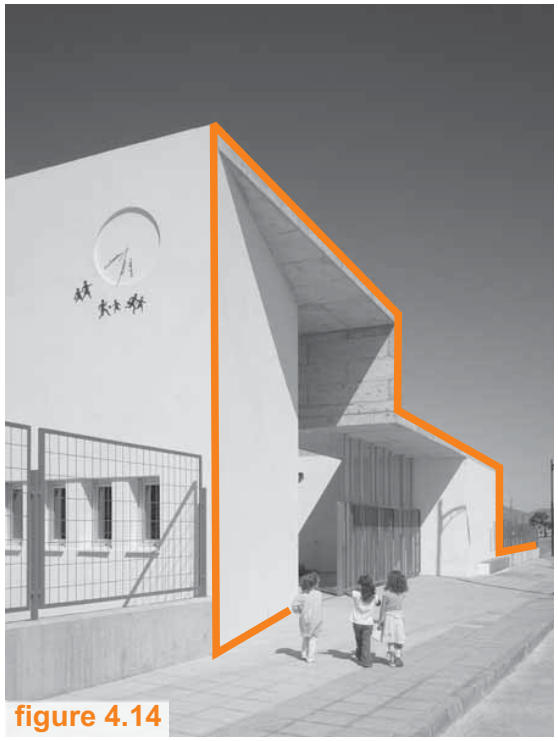


figure 4.14

towards the south to give to this area the best comfort possible...

...In fact the principal play-court has been placed in the south side of the plot to guarantee the maximum sunlight for this space during the winter. The shade of the black poplars will cool the court in spring time.

The exterior spaces treat each other in its entirety with materials adapted according to the uses, offering special attention to the representative zone. The exterior areas of games and outdoors... are placed next to the classrooms and incorporate sand pits, paved areas, etc. These outdoors classrooms have been projected, as complementary spaces, tied to the classroom, where it is possible to realize the school activity outside.

We seek a simple plant articulated around axes of minimal surface movement and allowing flexibility in the arrangement of spaces. Rectangular shapes were used. Likewise we considered the possible expansion of the centre with minimal difficulty and constructive distribution to the southern end of the plot. In the same way the concentration of the building promotes security, cleaning and maintenance of the building and at the same time reduces the cost of maintenance. The teaching activity is focused on the transversal axis, and distributes the students according to the cycles, grouping the three and four years-old ones in the northern zone and those of five years in the south of the building close to the principal court.

In the project the good integration has been kept in mind in its urban environment and its fitness to the bioclimatic conditions of the site taking the maximum advantage by the available orientations, the materials of the region, the aesthetic composition of the architecture, as well as the in force regulation for building and installations.

The choice of the sloping roof for classrooms' zone is connected with the dominant typology of the zone. The chapter of gardening has been kept in mind very much as integration element between the built space and the free space”

[Etherington 2010].

figure 4.15

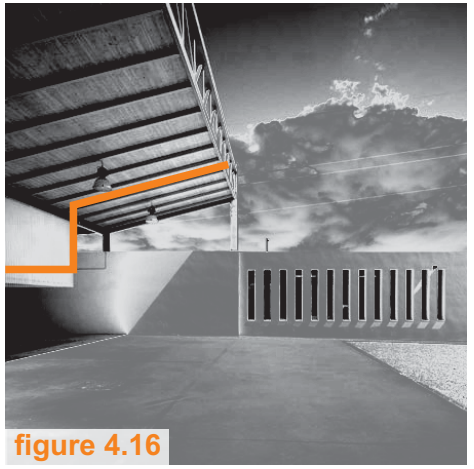


figure 4.16

figure 4.17

comments...

Dragen Children's House

Attributes

- Transition between levels made into an interior play feature
- Threshold of climbable ramp between inside and outside encourages the building to become a part of the playground outside
- Child-friendly interactive facades that accommodate for the anthropometrics of children

Shortcomings

- Although the building begins to interact with the landscape, far more could have been done to integrate the landscape and architecture

Day-care Centre in Skanderborggade

Attributes

- Integration with city framework is interesting
- Good utilisation of available space with levels
- Admirable usage of roof to create a dynamic and interesting play space
- Exciting use of colours and patterns
- Use of structure to create an indoor play facility

Shortcomings

- A roof garden could have been implemented to soften the harsh setting and provide a soft-scape on which children could play

Infant Educational Centre Cúllar Vega

Attributes

- Exciting use of shapes and forms, not only on the facade, but also inside to create interesting spaces and volumes
- Planning and zoning of the different programmes designed along axes to separate functions

Shortcomings

- Although dynamic in its design the centre tends to appear sterile and harsh
- Materials used could be more child-friendly

04_2

local precedent studies

daycare centre [delft south I and II]

Architects: Noero Wolf Architects
Location: Delft, Cape Town

description...

"SPATIAL LAYERING
A set of spaces mediate between the street and the more private spaces of the centres in that they are part of the street system of Delft and at the same time are private, being located within the site sub-division. Lined with seats and partially roofed, they form part of the public spaces of the community. Anyone from the neighbourhood can utilise these spaces, although they belong to the centre.

LANDSCAPE
Delft is part of the low-lying area adjacent to the sea. Known as the Cape Flats, the area lies in contrast to the varied and imposing mountain ranges beyond. Since landscape is a powerful presence in Cape Town, the design seeks to connect buildings, landscape and city together in new ways. The division of the landscape into flat, low-lying areas and distant mountain ranges is mimicked in the design. Wall surfaces are plastered to a height of 1.5 metres forming a continuous horizontal line that wraps around the buildings at eye level. Above this the wall plane is bagged. The plastered surface is painted green or blue to represent land or sea whilst the bagged surface is coloured white in sharp contrast to the sky - similar to the silhouette of mountains against sky...

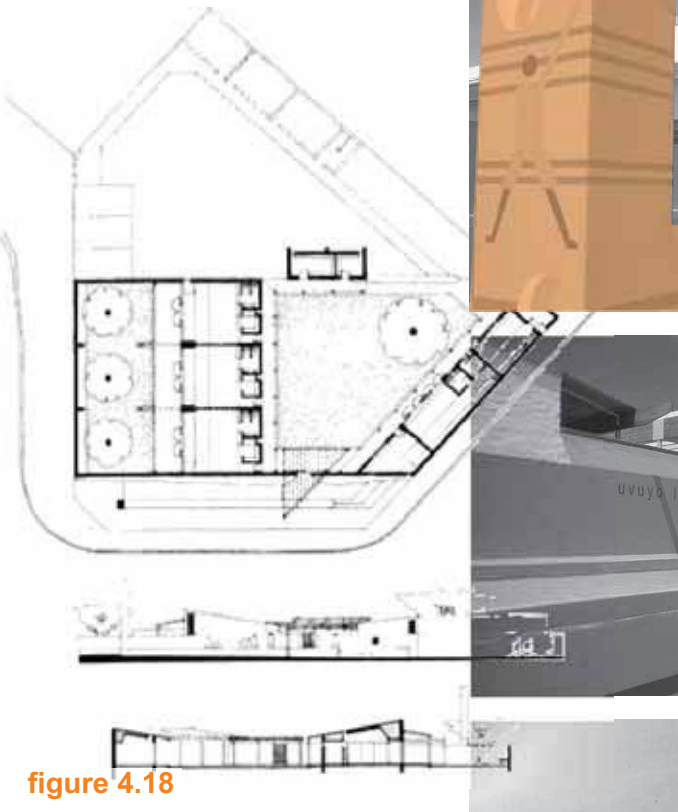
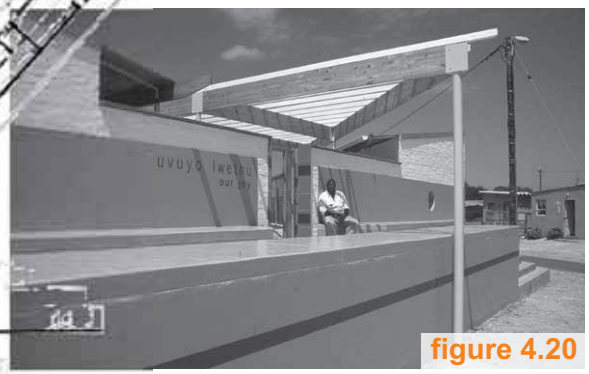


figure 4.18

figure 4.19



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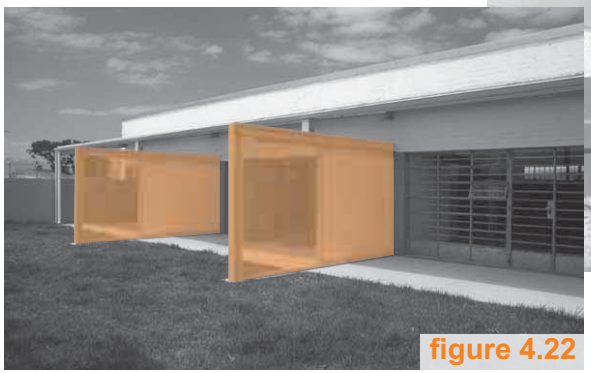

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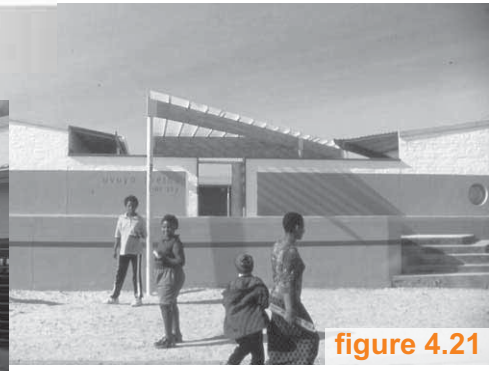

figure 4.21

RESOURCEFULNESS

The need for resourcefulness - to achieve the maximum ends with minimum means - has shaped the work. Linked to resourcefulness is the notion of modesty - the meaning of which lies in its derivation from the Latin word "modesto". Based on the concept that the value of completing a task is in direct proportion to the amount of energy expended, it is comparable to determining, within limited means, where to invest weight in design. In other words to decide where to be forceful and where to be retiring and modest. The entrance for example has been articulated with bull-nose tilling, used unconventionally, to define the entrance threshold, while elsewhere, construction detail is conventional.

A SPECIAL LANGUAGE

Each centre is identified by a brightly painted pylon - bearing a symbolic mark within the community and draws people through its verticality. The pylon extends horizontally into a seat which is adjacent to the entrance path - the tension is deliberate and reflects back upon notions of landscape that have informed the design of the buildings. The entrance is marked by a shade cloth pergola, defining a safe place to protect children, whilst also serving as an after-school waiting area. Consequently, it has become the most architecturally elaborate aspect of the centre. The centres are painted in different colours - in both cases the importance of the toy store is represented not only by its central location but also by bright red colouring .This creates continuity in a condition of difference”.”

[Day-care Centre, Delft South 2002]

figure 4.24

figure 4.23

figure 4.25

figure 4.26

st cyprians' pre-school

Architects: Visser Architects – Design Studio
Location: Cape Town

description...

"The 'School in the Woods' ...A design that incorporated some of the architectural elements from the historic buildings and threaded buildings between the trees. No important trees were damaged in our scheme. The school is known as the "School in the Woods". We conceived the school as a cluster of classrooms – each with its own traditional roof – arranged around a courtyard playground. The classrooms are built of brickwork in the architectural style of the existing buildings. A wide glazed veranda links the classrooms and provides indoor play space. 3 toilet rooms have been built with curved walls protruding into the veranda area. Central washbasins are lit from above by a skylight.

The scale of the building was deliberately altered to make it feel more accommodating to children – all doors are slightly shorter and wider, window cills in the veranda are low to act as seats or play surfaces. The choice of materials was to tie the building into the existing architecture of the school and also to be low maintenance".

[New Pre-school & Sports Centre for St Cyprians' School 1999]

figure 4.27

figure 4.28

figure 4.29

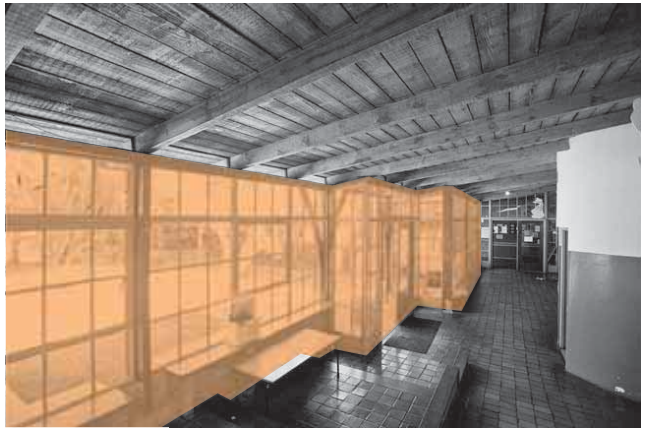

figure 4.30

figure 4.31

05_1

urban framework

an urban framework for the northern ridge of the Pretoria CBD [based on the Re Kgabisa Tshwane proposal]

The northern and north-western parts of the Inner City are highly neglected areas that are in desperate need of urban regeneration. Marabastad, the National Zoological Gardens, and the area in between form the study area of our urban framework.

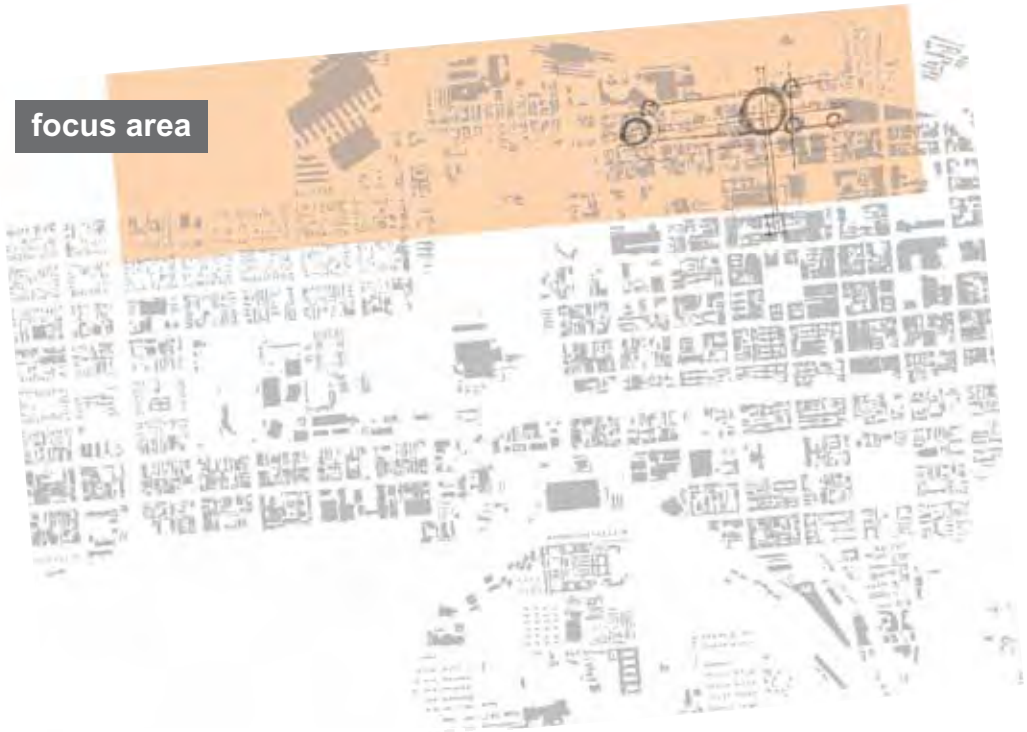

figure 5.1 figure ground study indicating focus area

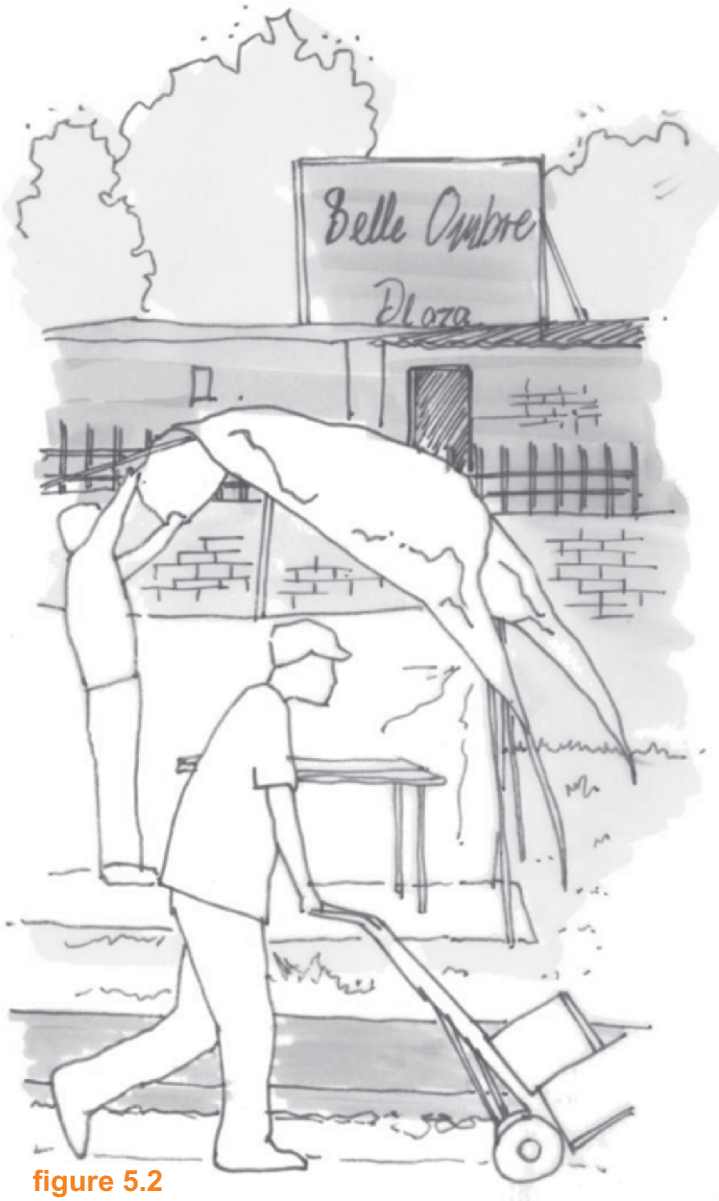

figure 5.2

Pretoria is a culturally rich city with exceptional physical qualities and economic opportunities yet urban decline in the north of the CBD is evident. However, through a clear vision and implementation strategy this can be corrected. The aim is to create a memorable and people friendly city – a people's place. It is the realization that nodes must be integrated through activity spines and through the integration of activities, sprawl will be demoted.

connections...

- Re-connect Marabastad to the CBD
- Enhance tourism around the National Zoological Gardens
- Zone between Paul Kruger and Potgieter Street to act as catalyst for regeneration of inner city activity

strategic goals...

- A city with a unique identity
- Inner city Precincts
- Diversity of land use
- A thriving tourism industry
- Inner city natural environments
- Mobility and access
- Sustainability

figure 5.3 aerial photograph showing connectivity proposals

framework goals...

- **A city with a unique identity**
  - Embrace South Africa's multi-culturalism
  - Connect civic and public functions
  - Focus on established landmarks and historical context
  - **Promote landmarks as visual focal points in the city**

- **Inner city Precincts**
  - Create precincts by enhancing existing character of areas through theme developments
  - Strengthen the interface between precincts
  - Promote densification within the zones

- **Diversity of land use**
  - Promote mixed use development
  - Encourage specialisation in specific functions, but avoid mono-functional zones
  - Address residential needs and the lack thereof

- **A thriving tourism industry**
  - Focus on attracting international tourists
  - Develop new activities to bring local residents back to the city
  - Create a “people's place” to “humanize” the city
  - Link tourist activities with urban green space, accommodation and recreation

- **Inner city natural environments**
  - Re-establish and regenerate inner city green space
  - Protect and develop the natural boundaries
  - **Branch and infuse the natural environments into the CBD**

- **Mobility and access**
  - Develop the urban environment to promote the “walkability” of the city
  - Enhance the visual and interactive quality of the pedestrian interface
  - Promote legible and accessible public transport
  - Minimise conflict of different transport nodes
  - Exclamate entrances into the city with visual viewpoints

- **Sustainability**
  - Initiate a “compact city” ideology
  - New management systems must be introduced to monitor and address sustainability issues
  - Promote recycling and rainwater harvesting inside the CBD
  - Propose urban permaculture developments

objectives...

- **A city with a unique identity**
  - Develop legible linkages between existing natural environments in and around the city
  - Preserve elements of cultural importance and facilitate diverse cultural activities
  - Establish and develop visual contextual linkages by using visual sight lines
  - Create urban open areas for people to interact in, in order to demote disassociation

- **Inner city Precincts**
  - Create function orientated zones, that still address multi-functional activity zones
  - Link precincts with natural and legible walkways
  - Introduce public, semi-private and private areas within precincts
  - The design language should reinforce the differences that sets one precinct apart from another

- **Diversity of land use**
  - Develop robust places that can be used for a variety of users and purposes
  - Densify the urban environment through mixed use developments

- **A thriving tourism industry**
  - Structure dedicated tourism activity routes
  - Create locally driven markets
  - Develop National Zoological Gardens precinct for maximum tourist attraction
  - Introduce internal tourism transport

- **Inner city natural environments**
  - Preserve and develop natural environments [Steenhoven Spruit, Apies River, NZG] to branch into inner city
  - Create an awareness for the natural environment through inner city parks
  - Develop the pedestrian walkways to contain natural greenery

- **Mobility and access**
  - Promote a finer grain built environment to encourage users to move on foot
  - Convert informal taxi ranks into urban public space
  - Set up dedicated transport systems for pedestrians, private vehicles and public transport
  - Create dedicated drop-off and pick-up zones for transport system
  - Create a hierarchy between streets, building and the natural environment
  - Open up building and city blocks on ground level for user practicality

- **Sustainabilty**
  - Ensure flexibility in design to accommodate future change
  - Design for minimum impact on the environment
  - Provide wide range of income generating activities
  - Re-develop brown-field sites in order to consolidate urban form
  - Promote the development of sustainable transport
  - Increase density of inner city

figure 5.4 aerial photograph showing precincts, zoning and interventions

activity spine:

Pedestrian walkway between Boom and Bloed Street

figure 5.5 aerial photograph showing pedestrian walkway

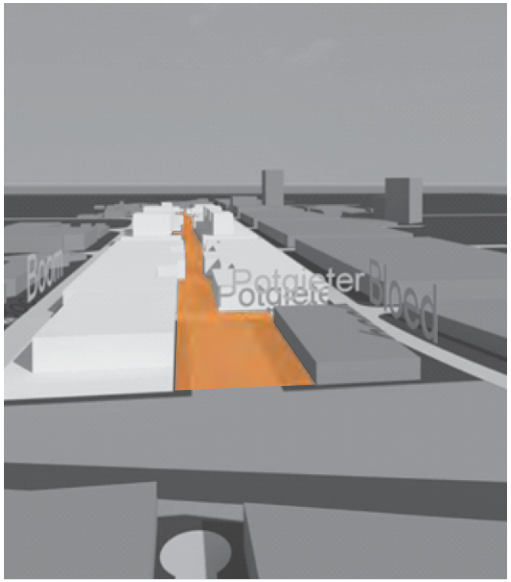

figure 5.6 3D view looking east

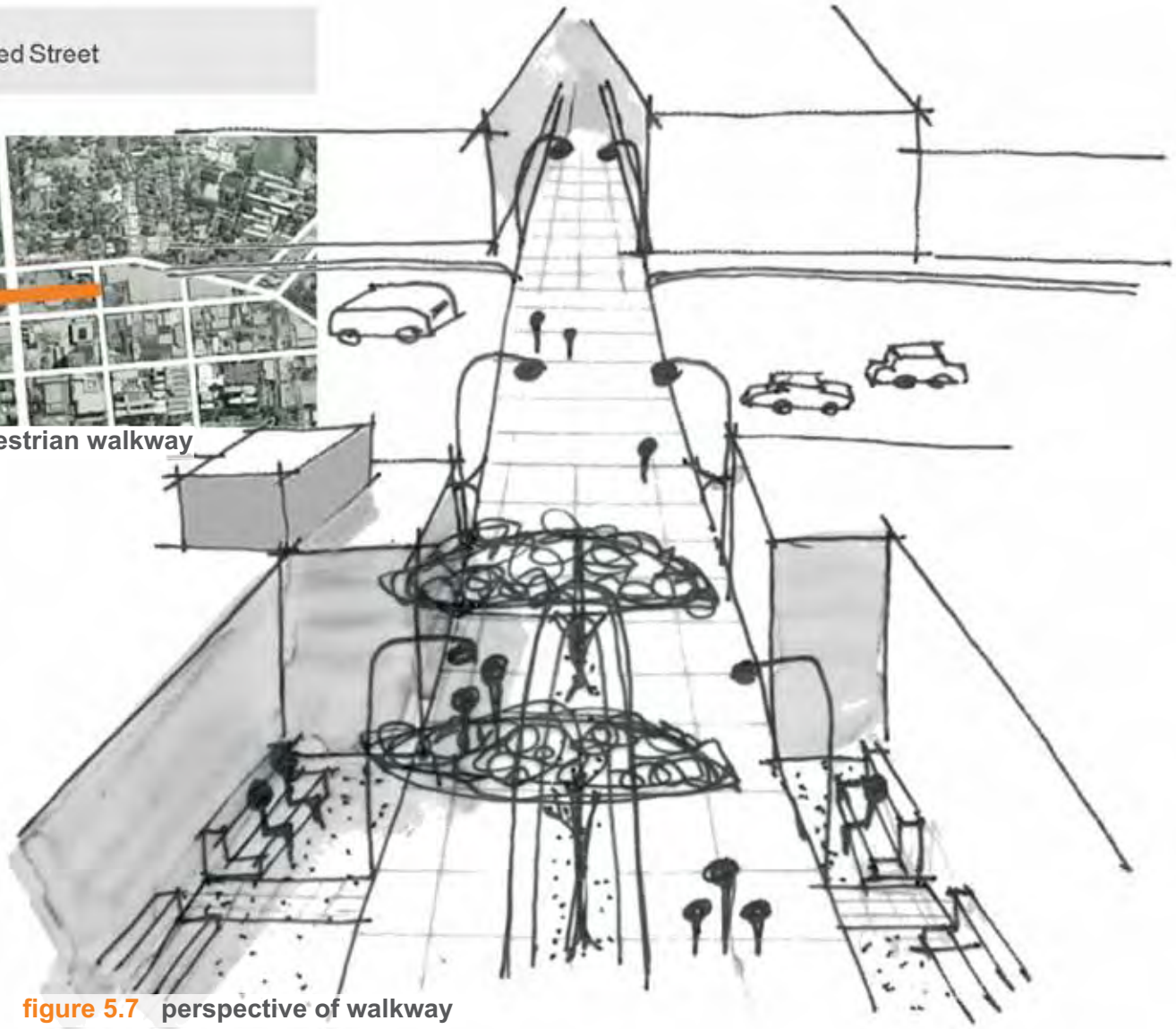

figure 5.7 perspective of walkway

activity node:

Entrance into Bloed Street Mall at the termination of the pedestrian walkway

figure 5.8 aerial photograph showing activity node

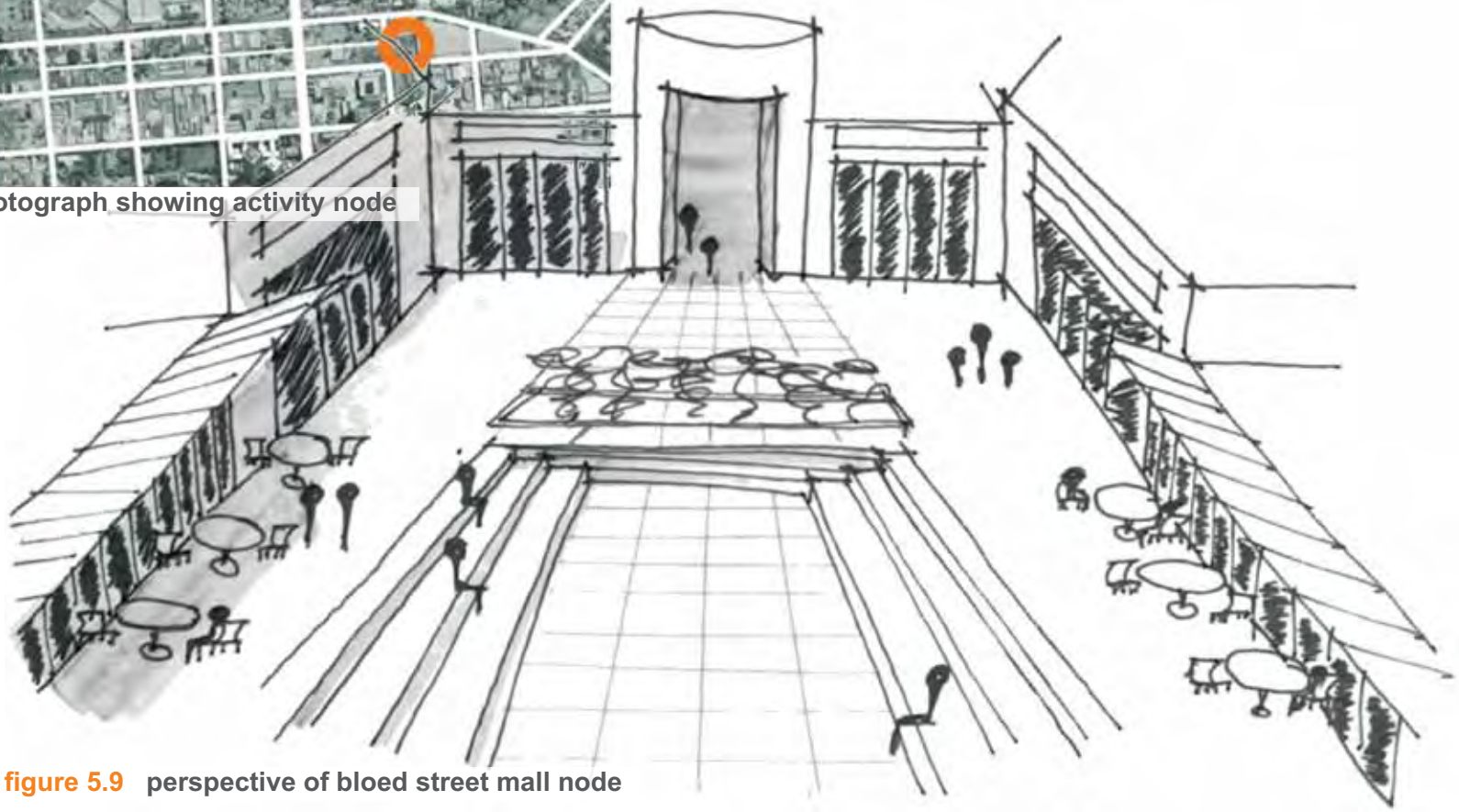

figure 5.9 perspective of bloed street mall node

precincts:

Marabastad development

figure 5.10 aerial photograph Marabastad

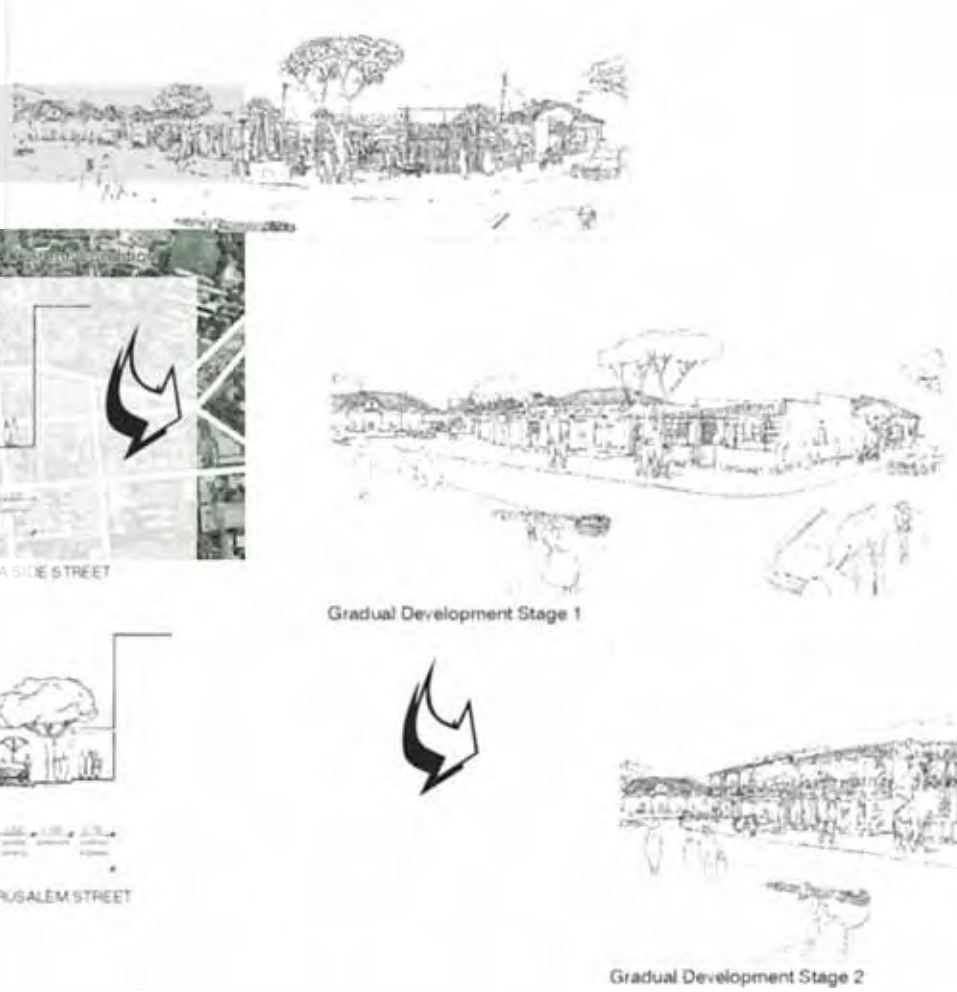

figure 5.11 sketches of Marabastad development

entrance node:

Northern city entrance celebration at Paul Kruger Street, Ring Road and the creation of a visual landmark

figure 5.12 aerial photograph showing ring road

figure 5.13 3D view looking south down paul kruger street

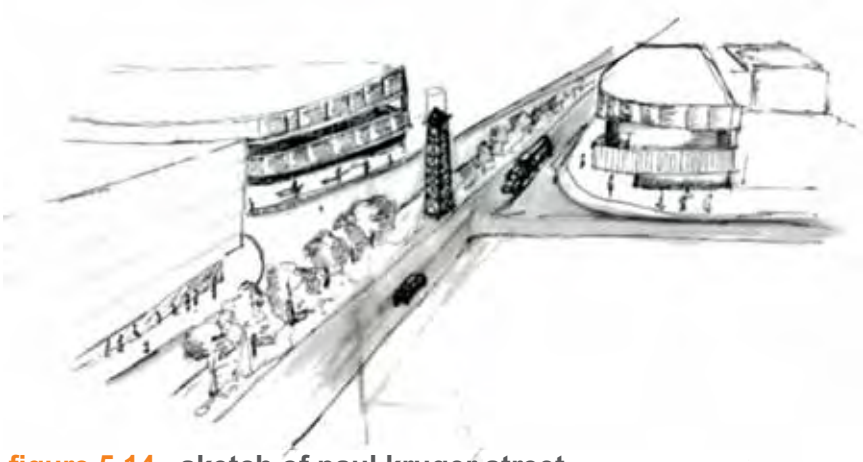

figure 5.14 sketch of paul kruger street

figure 5.15 sketch of public square

activity nodes:

New public square at Belle Ombre station and heritage square

figure 5.16 aerial photograph showing public squares

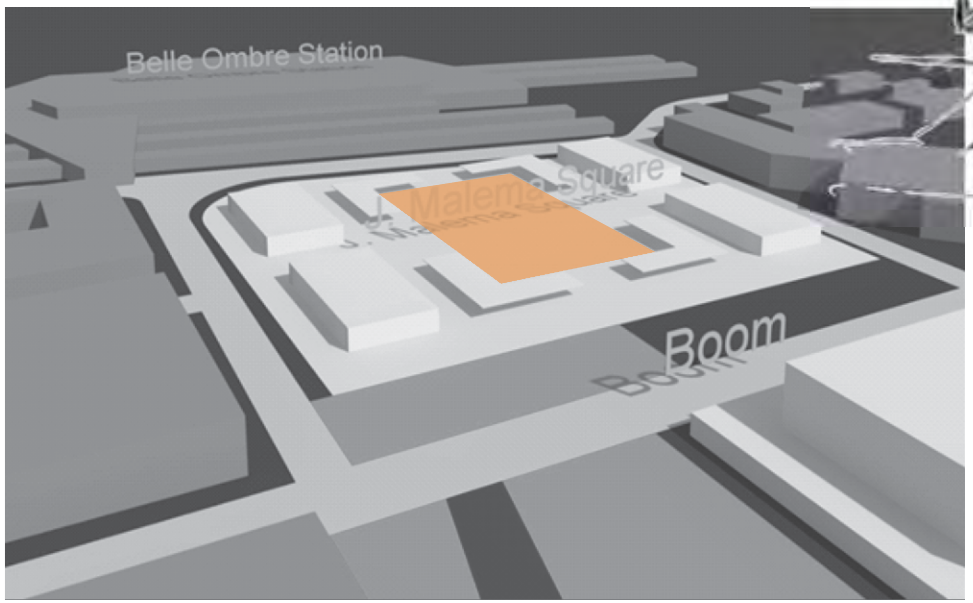

figure 5.17 3D view of public square at belle ombre station

figure 5.18 sketch of public square at belle ombre station

d.f. malan
boom
bloed
struben
Zoo
paul kruger
pretorius

05_2 site and context

Pretoria:
25° 44' south longitude
28° 12' east latitude

figure 5.19

The proposed site to be investigated is located in the South African Province of Gauteng in the northern half of Pretoria's central business district [CBD] which falls under the Tshwane Municipality.

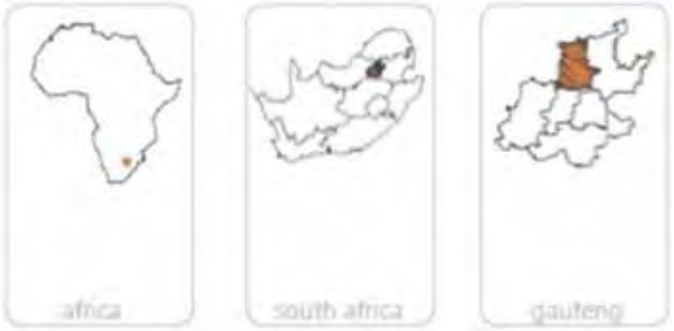

figure 5.20 locality diagrams

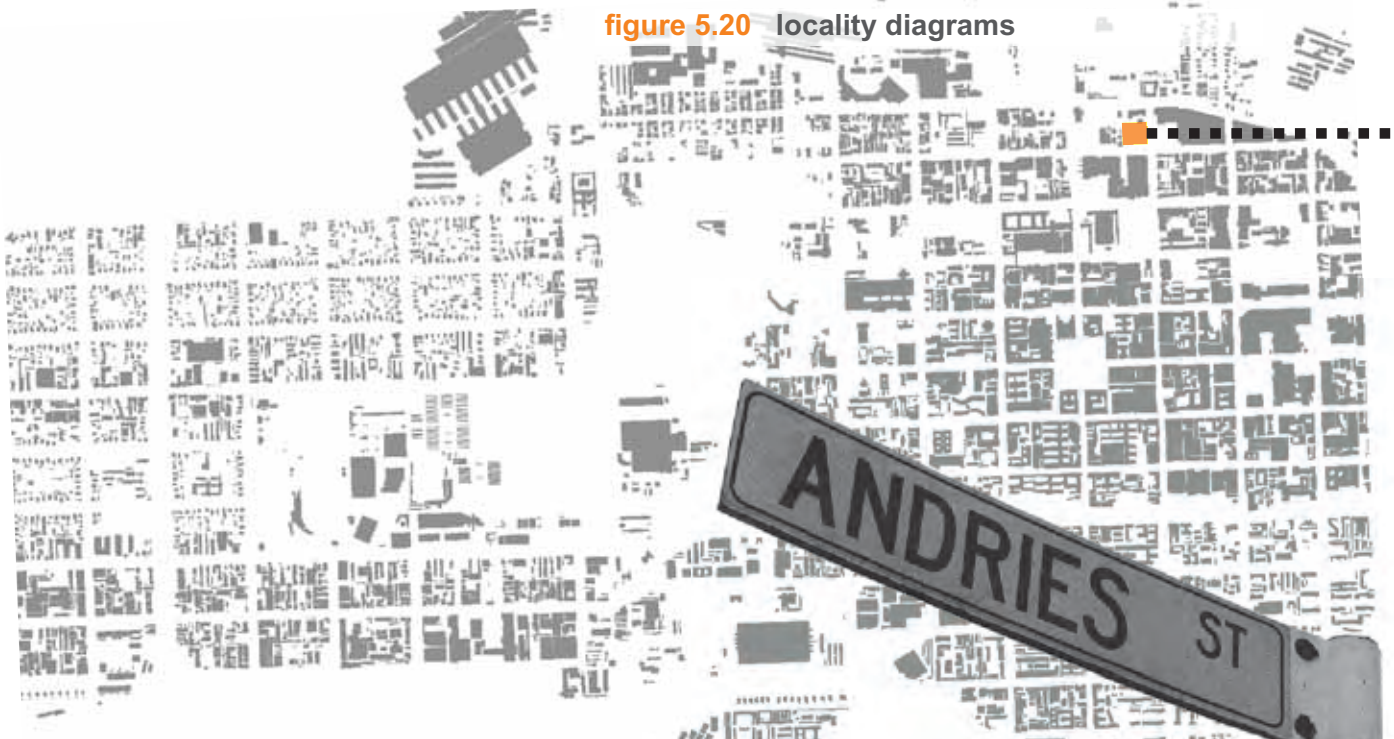

figure 5.21 figure ground showing site location

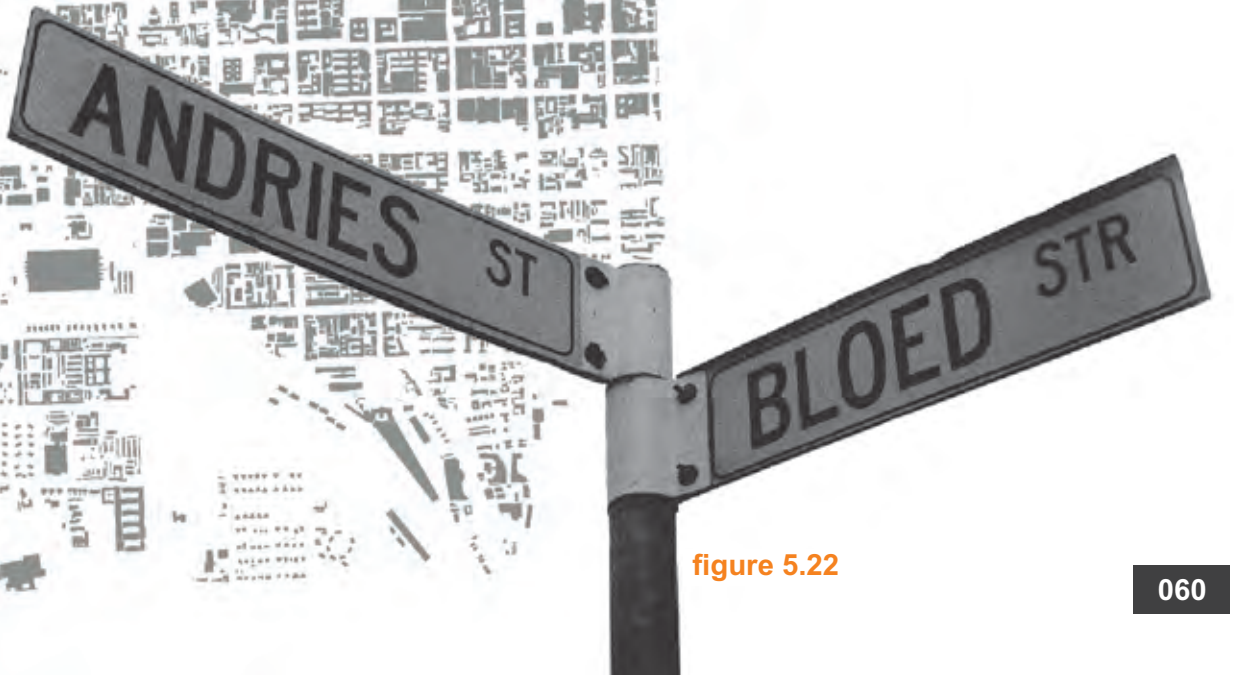

figure 5.22

Pretoria was established in 1855 initiated by the ZAR government, and to this day continues to be the administrative capital of South Africa. The city is grounded on a rigid orthogonal street grid related to the cosmic order of the sun's path and the position of topographical access points. The focal point of this grid system can be identified in Church Square as a historical and religious meeting place.[Jordaan 1989: 26]

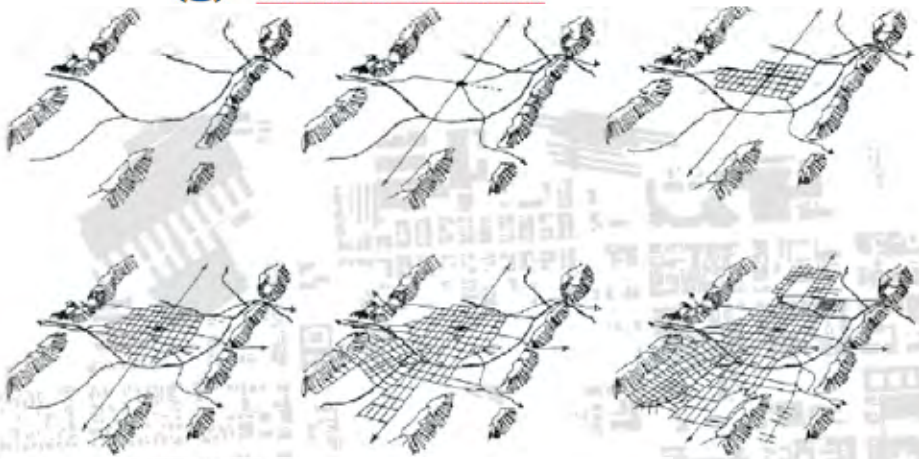

figure 5.23 growth of Pretoria

figure 5.24 figure ground showing church square and axis

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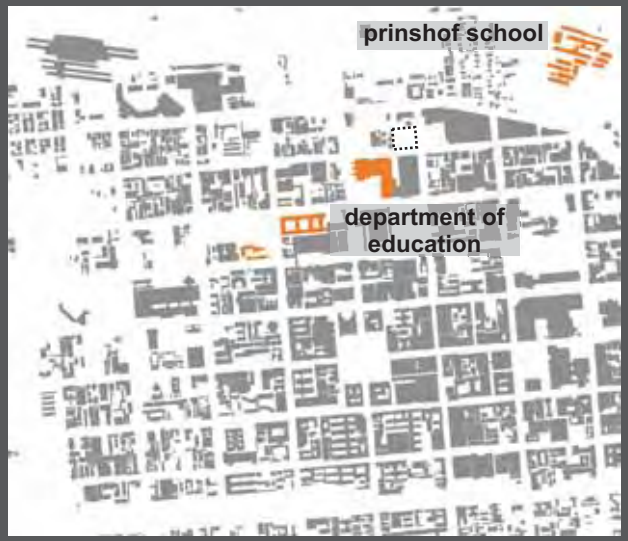
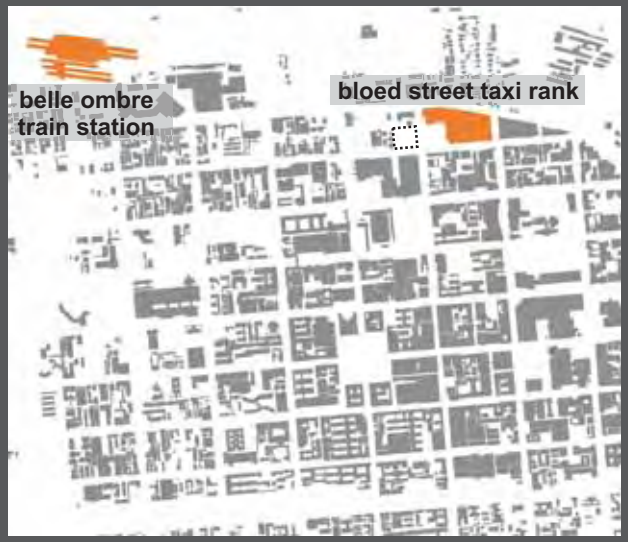


educational buildings

historical value



transport nodes

public open spaces

figure 5.25

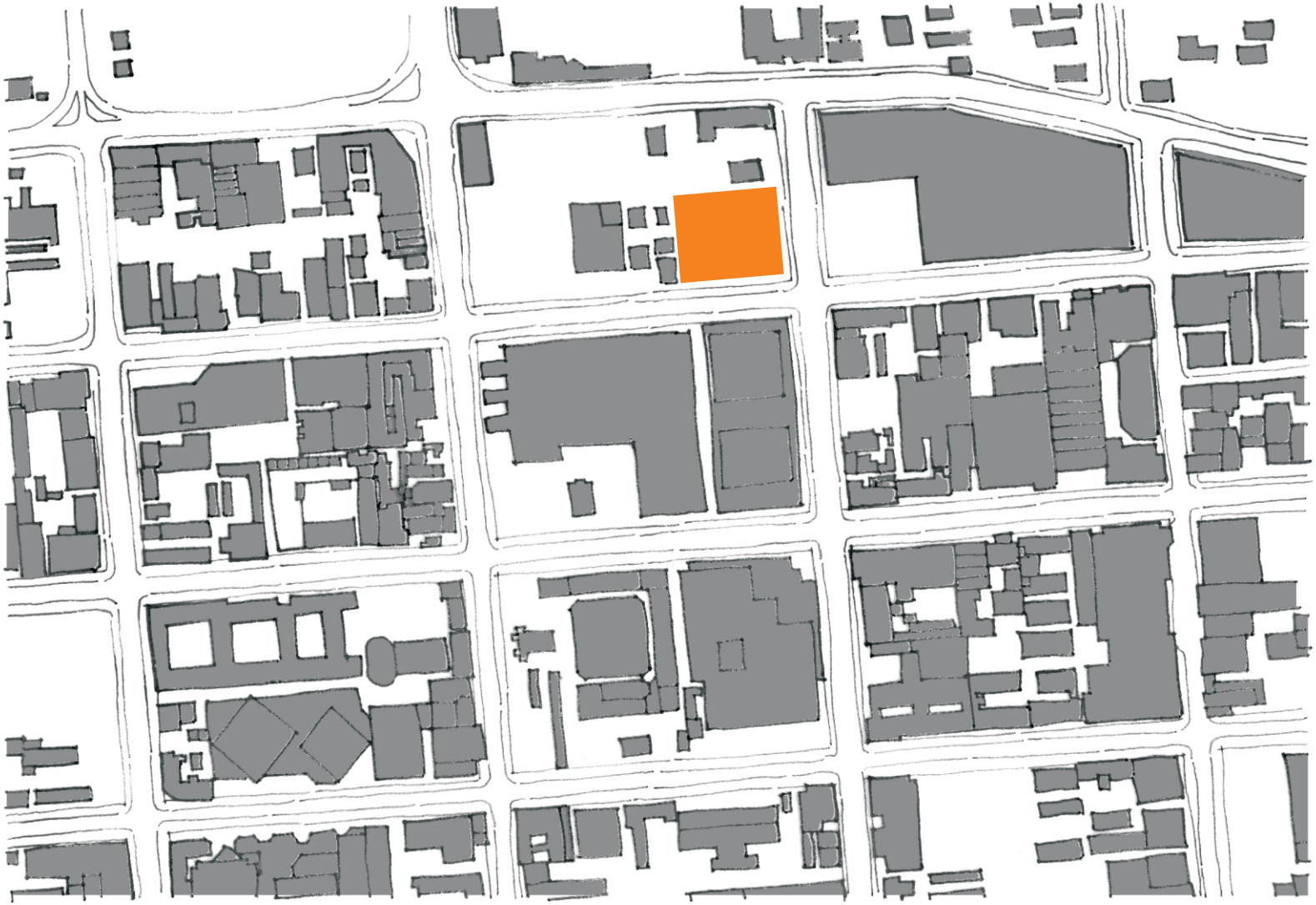


figure 5.26

context mapping_ existing structures

figure 5.27

context mapping_ usage

figure 5.28

context mapping_ height restrictions

boom
bloed
bosman
paul kruger
struben
andries
van der walt
proes
high
medium
low

figure 5.29

boom
bloed
bosman
paul kruger
andries
van der walt
struben
proes
water
sewage
stormwater

figure 5.30

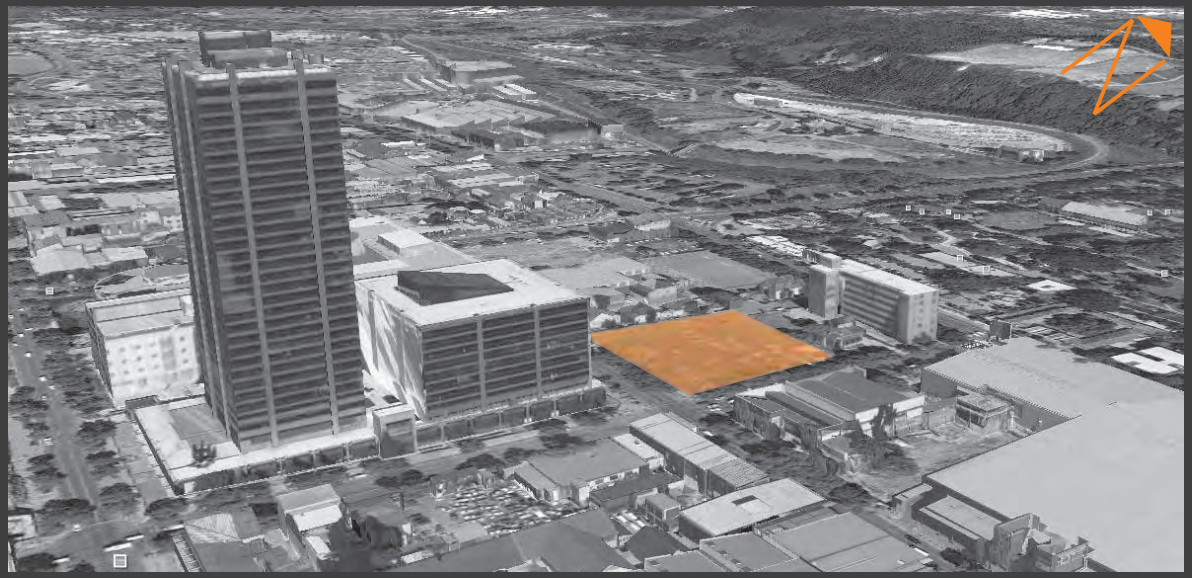


figure 5.31

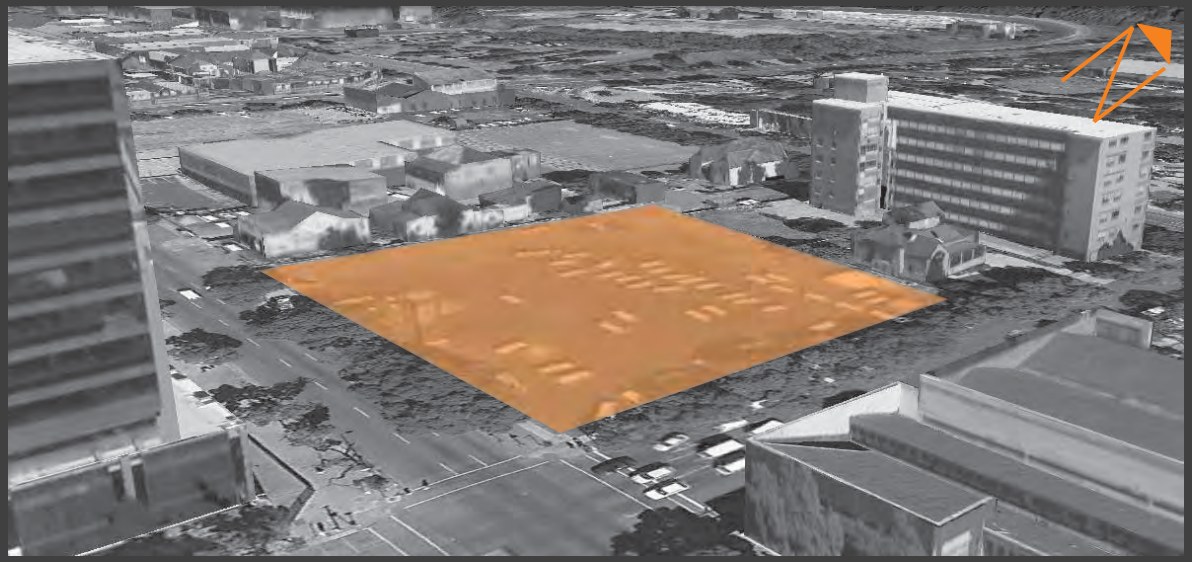


figure 5.32

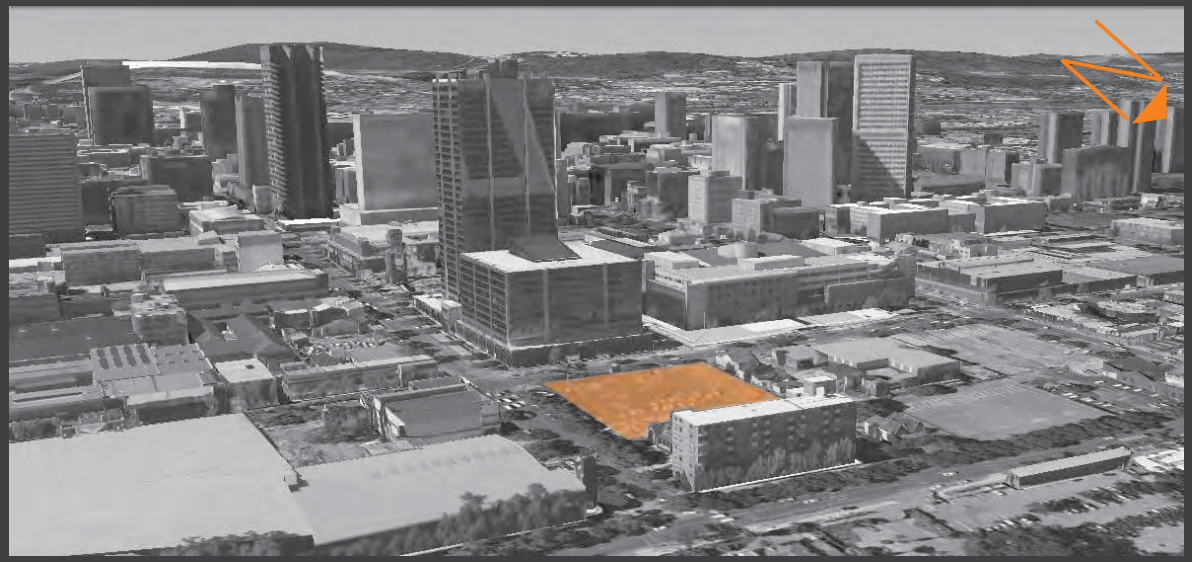


figure 5.33

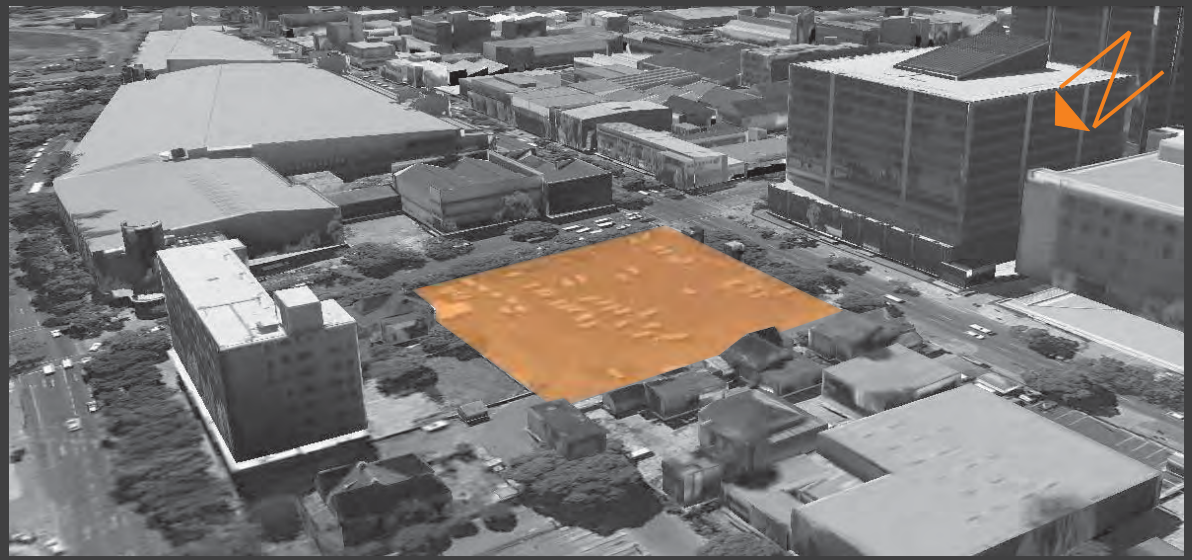


figure 5.34

social context...

The block has undergone several changes over the past few years. The site currently functions as a taxi rank which was intended to be temporary to supplement demand during the construction of the Bloed Street Taxi Rank. The only buildings remaining on the block are those whose tenants' lease has not yet expired [Timber City, Zoo Café etc.]. Several buildings on the block were demolished without the tenants" consent [Automotive Workshop on Paul Kruger Street after a 28 year lease agreement]. It is the City Councils intention to negotiate the clearing of the entire bock for later development of a shopping mall. Several heritage buildings have been demolished during the block clearing process though documentation is limited. [Smalberger 2007: 54]

figure 5.25 orthophotograph showing block divisions

legislative context...

"Currently, the block under investigation is divided into 26 separate erven. In order to construct the proposed shopping mall, the city council purchased most of the properties not already under their ownership. Erf 2863, on which the seven story residential apartment block is located, has proved more problematic. The apartments are under sectional title ownership and the council must negotiate separately with each owner. The process is inconclusive at this stage.

The proposed project proceeds with the assumption that all erven within the city block are purchased by the client. All properties will be consolidated, excepting those on which identified heritage buildings are to be preserved [erven R842, 1/845 and 1/847] and the property on which the residential block stands [erf 2863]. The newly consolidated property will then be subdivided into new land parcels and managed on sectional title basis. Such land division applications will also include amendments to the current zoning and town planning regulations for the properties involved. It is also assumed that, considering City Council's proposed development of the area, most of the legal procedures are currently under way.

All proposed development will be subject to the South African National Building Regulations as stipulated in the South African Bureau of Standards 0400-1990. All town planning amendment applications will be conducted in accordance with application procedures stipulated by the City of Tshwane, City Planning, Development and Regional Services Department. The full public participation and advertisement procedures will be followed. All site development and building plans are subject to approval by the Department of Housing, City Planning and Environmental Management, City of Tshwane. The proposed renovation and alterations to identified heritage structures will be subject to approval by the South African Heritage Resources Association [SAHRA] in compliance with the National Resources Act [act No. 25 of 1999]" [Smalberger 2007:57- 58].

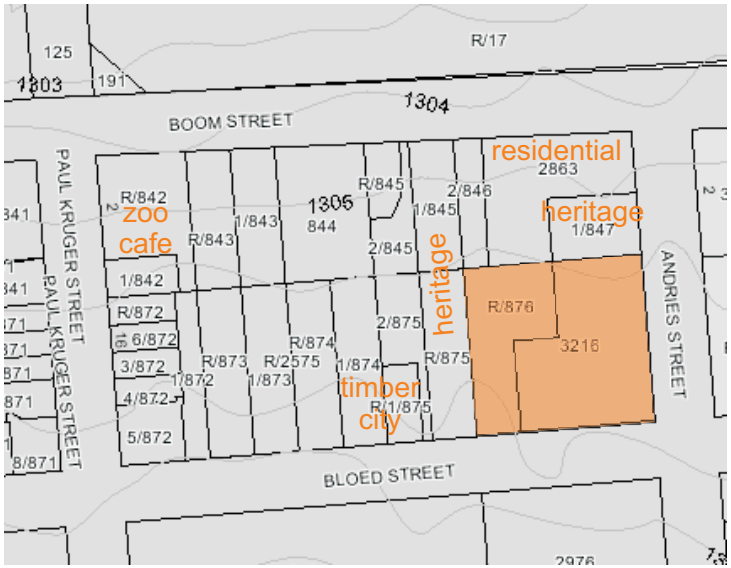


figure 5.26 remaining buildings on block

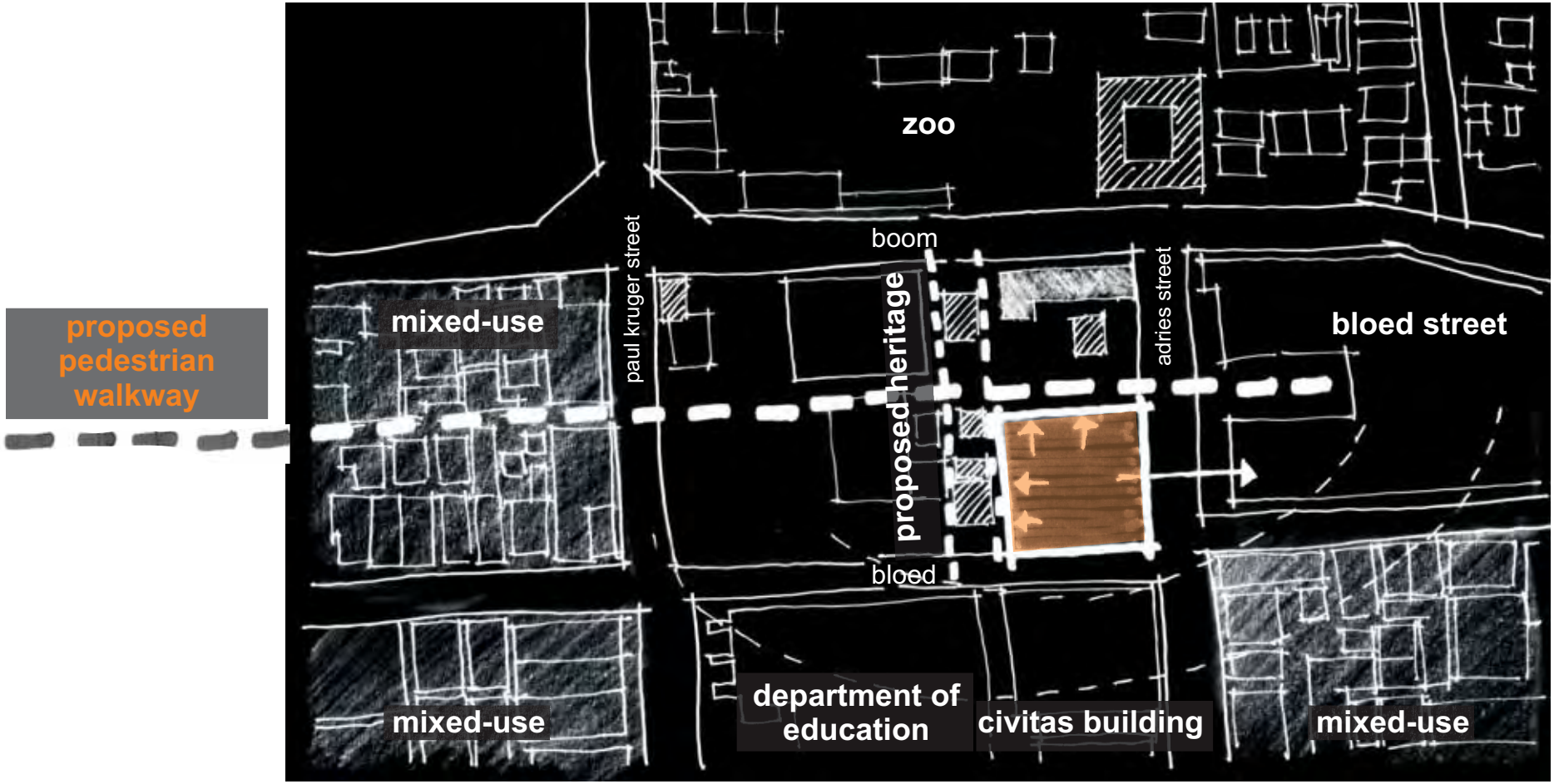


figure 5.27 context analysis

figure 5.28 existing vehicular traffic

figure 5.29 existing pedestrian traffic

figure 5.30

figure 5.31

site
bloed street

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figure 5.32 collage of context pictures

site pictures...

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YUNIBESITHI YA PRETORIA

TAXI TO

MABOPANE VIA
CENTRAL CITY STATION & MAKGATO BLOCK B,C,D,U
BOEKENHOUT OFFICE
LEBANON OUTLINE & SCHOOL
ODINBURG
SLOVO VIA PALESA
SUNVALLEY & MORULA VIEW

GA RANKUWA VIA
PRETORIA NORTH
THERESA PARK
WONDER PARK
ROSSLYN
MALAN SEUNS
BUNDU INN

077

bio-physical context...

"Pretoria is located in the 'highveld' or Northern Steppe climatic zone which is chacterised by warm summers with occasional afternoon showers and winters that are dry and cool.

Micro-climate

Pretoria, being a densely built urban environment is subject to the heat island effect created in most city centres. Buildings store and emit large amounts of heat due to long-wave-re-radiation. This coupled with heat generated by people, traffic, industry and by the heating of interiors of buildings contributes to increased temperatures within the city necessitating shaded areas for pedestrians and increasing the need for cooling within buildings. Through filtering the air and providing shade, the tree lined streets of Pretoria help overcome this problem.

Daylight / sunshine

Pretoria receives high amounts of solar incidence with approximately 80% during the summer months and 67% during the winter months.

Summer sun angle: 88° altitude
Winter sun angle: 44° altitude

Cloud Cover

Average 33%
Varying from 13% in July to 54% in December

Sun angles [@12h00]

Summer [Dec 22]: 88°
Winter [June]: 40.73°
Equinox: 64.23°

Rainfall

Varies between 125- 375mm in summer and 62- 250mm during winter with an average of 674mm rainfall per year.
Summer rainy seasons are between November and March with a peak in January.
50- 80 rainy days per year with some hail expected.

Temperatures

Pretoria is characterised by generally high temperatures due to thermal mass of the built environment. Relatively high local humidity can combine with high afternoon temperatures to cause uncomfortable heat.

Summer: 20- 38°C
Winter 10- 27°C

Humidity

Minimum: 57% @ 08h00 – 29% @ 14h00[September]
Maximum: 75% @ 08h00 – 48% @ 14h00 [March]
Average relative humidity is 59%

Wind

Winds are light to moderate.
Summer winds originate between north-easterly to south-easterly direction whilst winter winds are generally from a north-westerly direction. It can be expected that Daspoort Ridge will lessen the effect of morning winds, which will have a negative effect on the dispersion of air pollution. Due to the density of the built fabric, wind tunnels will develop during windy conditions.

Vegetation

A large variety is present in the city, however, Pretoria is famed for the Jacaranda trees that line most of the city's streets and flower into bluish purple blankets during spring. A large part of the city's identity has been created around these trees and therefore any attempt by the city council to remove the exotic species [originally brought into the country from Brazil] is highly contested.

Soil conditions

To determine the exact geological profile of the soil type on the proposed site will require a technical survey. However, the Tshwane Inner City Proposed Spatial Development Framework [TICP SDF 2005] describes the composition of the general soil profiles for the city region as “Hekpoort Andesite which generally consists of an upper residual clay horizon followed at depth by jointed moderately weathered rock which is often water bearing. Below this there is hard competent rock”. The water table for this soil type is between 6 to 8 .metres

[Wepener 2007: 58; Vincente 2007: 03-14]

06_1

client

What as been derived from research thus far, other than the implementation architectural variety, is that community involvement and participation would be paramount in the success of a facility of this sort. A system of collaboration will have to be implemented in which case the Gauteng Department of Education will provide the funding yet the pre-school will be run by members of the community to instil a sense of ownership and association. According to theorists, as explored in previous chapters, it is this sense of propriety that will determine the successful and optimised use and maintenance of the proposed intervention. This centre could play the role of a catalyst for broader community improvement by becoming a community centre and expanding into the proposed rentable spaces to accommodate as the need for various additions [such as a clinic, night classes, communication services etc.] arises.

The Gauteng Provincial Government has proposed the Early Childhood Development Strategy in which it recognises the importance of children's development and outlines deficiencies of the current pre-school situation while adamant in their bid for improvement.

06_2 assignment and accommodation

- Classrooms [eight accommodating up to 20 children each]..... $60m^2$ each
- Reception and waiting area..... $90m^2$
- Library and fantasy play room..... $60m^2$
- Music and movement room..... $60m^2$
- Office..... $15m^2$
- Staff room..... $15m^2$
- Sick bay..... $15m^2$
- Kitchen..... $30m^2$
- Eating area..... $120m^2$

figure 6.1

07_1

development of concept

design informants...

[1] Primary users [the children]

- Requirements
- Activities
- Anthropometrics
- Safety [zoning / defensible space]

[2] Formal to informal

- City to zoo
- Dense fabric to sparse
- Inside to outside
- Vehicles to pedestrians

[3] Pedestrian walkway

- Accommodates children / parents / elderly / casual onlookers / people in transition through block

keywords...

regeneration - periphery = degraded urban fabric
inbetween - hardscape & softscape / inside & outside
transition - formal to informal / inside to outside
connectivity - city framework/ linking of nodes / site to context
branching - link to context / neighbouring buildings
integration - context / setting / urban fabric
threshold - street to site / landscape to architecture
interface - building to playground / site to context
versatility - more than one use / expand or contract / shift and adjust / push and pull / interactive

	boys	girls
age 2	864 [height]	856 [height]
age 4	1039 [height] 424 [arm reach] 241 [chair height]	1039 [height] 417 [arm reach] 241 [chair height]
age 6	1171 [height] 478 [arm reach] 295 [chair height]	1163 [height] 480 [arm reach] 279 [chair height]

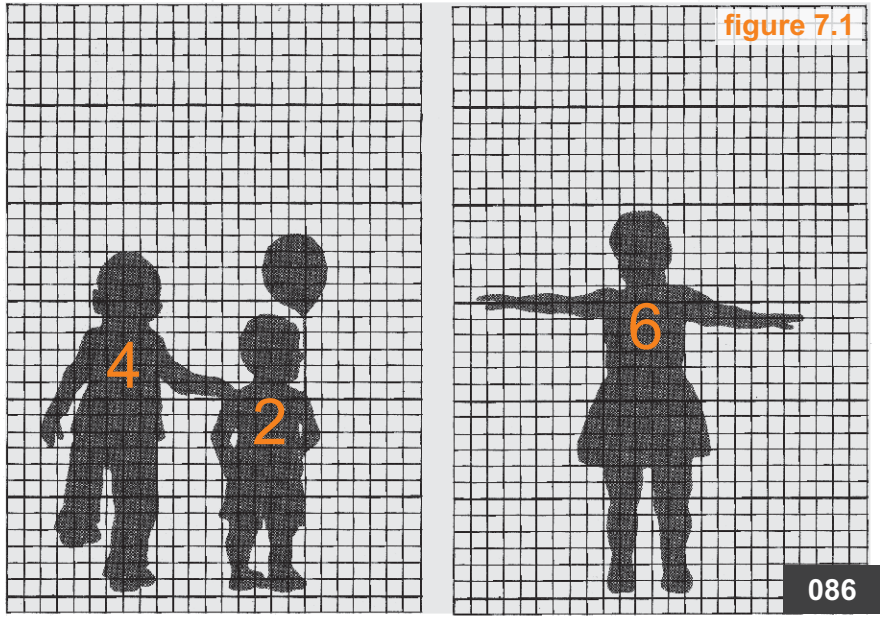


figure 7.1

concept:
extending the field of play

learning through play [in totality] by expanding the area of impact

Defining the fields...

Functional
- literal play carried out on the outdoor playgrounds and play activities performed indoors.

Volumetric
- experimenting with the use of different levels and heights
- enhancing spatial quality by tweaking the mundane envelope and internal volumes

Contextually
- connecting with the city and the zoo precinct to provide a diversified and unique learning environment
- reflecting the story conveyed by the historical setting
- play hide and seek when coming into contact with the sites edges
- include parents and people in transition past the site or provide a point of interest for those at leisure

Light and Colour
- dabble with the implementation and effects of different lighting techniques and colours.

Play... a physical or mental activity that is undertaken for enjoyment or self-development and can be undertaken by individuals or groups of children spontaneously or as part of a planned activity [Definition of Play 2007]

...games = structured play
usually defined by the parameters of rules

...structuralism [the exploitation of geometric grids and modular repetitive structures creating complex yet clear organisation]

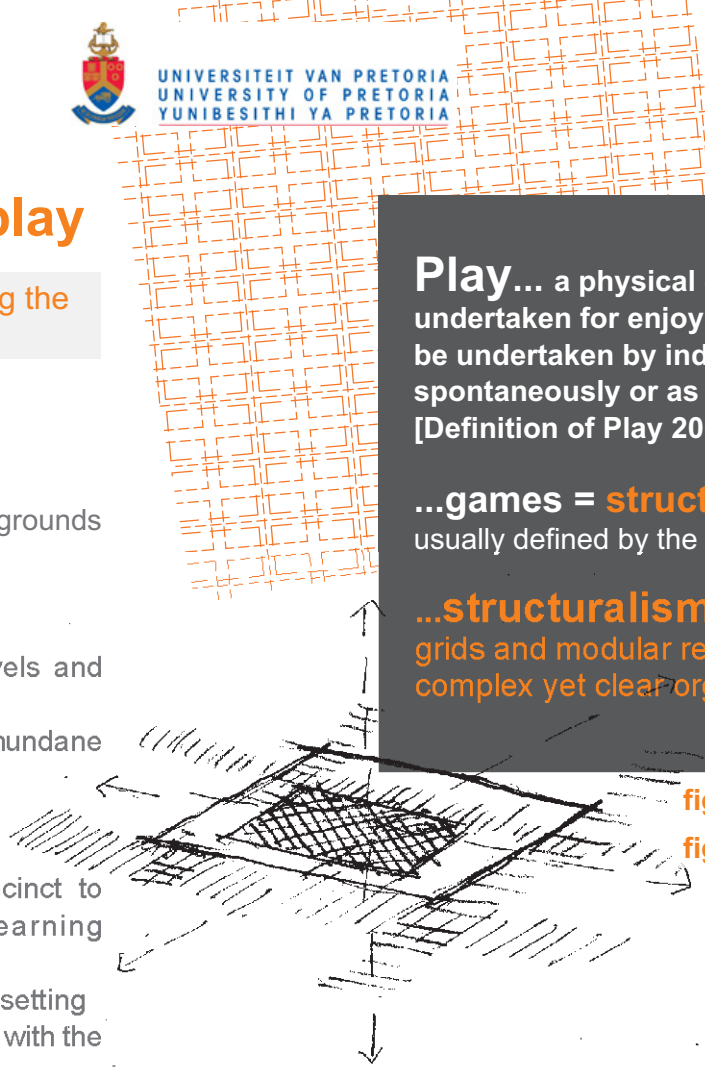


figure 7.2 tartan grid applied to site

figure 7.3 extending diagram

Extend to...
- Role as designer
- Physically [horizontally / vertically]
- Choice of materials
- Space and form making

It is through **functional play** that the notion of tying in landscape and architecture, inside and outside, is implemented. The supporting structure forms part of the play equipment and the ground is articulated to create transitions between buildings and the outdoor play area.

Dutch structuralist Aldo van Eyck promoted the “twin” or “dual phenomenon” where he describes the city as a big building and buildings as a city. In essence the passage ways and circulation are likened to streets of movement. It is this perception, and that of a child's preoccupation with height and wanting to be taller or older, that gave rise to the idea on how to tackle **volumetric play**. The design incorporates each classroom sitting at various heights according to the age group it accommodates. A hierarchy of ages is implemented where the oldest children are positioned at the highest level and the youngest on the ground. The utilisation of the “Y –axis” creates dynamic varied heights mimicking the city skyline. Opportunity for play is created in the space below each classroom where a child can either crawl under or walk beneath the intermediate classrooms or climb on the structure below the highest classrooms. Children are thus encouraged to be more active reinforcing “learning through play”.

Van Eyck stated “...a configuration of intermediary places clearly defined, this does not imply continual transition or endless postponement with respect to place and occasion. On the contrary, it implies a break away from the contemporary concept [call it sickness] of spatial continuity and the tendency to erase every articulation between spaces i.e. between inside and outside, between one space and another. Instead, I tried to articulate the transition by means of defined inbetween places which induce simultaneous awareness of what is signified on either” [Modern in Melbourne: Structuralism]. In keeping with these views presented by van Eyck, I have articulated the circulation by implementing ramps to access the various classrooms.

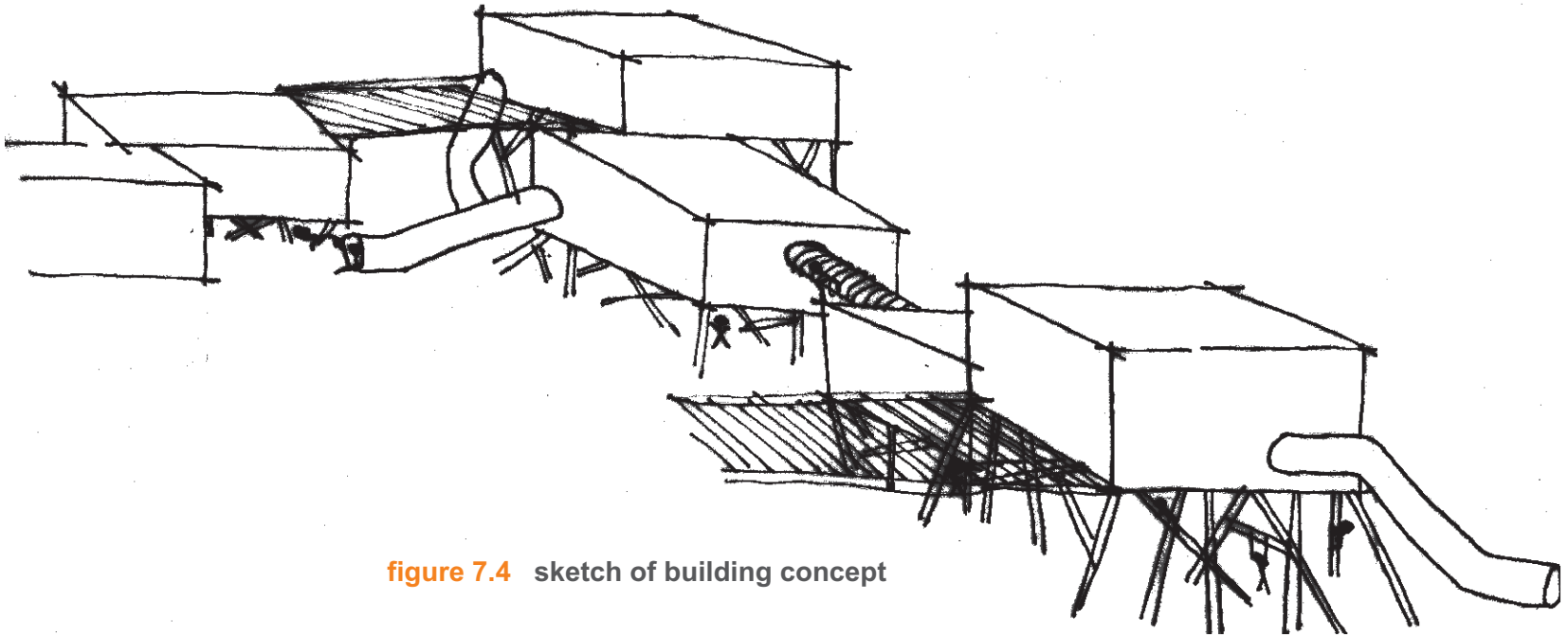


figure 7.4 **sketch of building concept**

Contextual play and structuralism are incorporated with the implementation of a grid throughout the site. This grid and its associated rigidity reflect the one imposed on the inner city of Pretoria and begins to connect with the site's setting. Its proportions are based on the dimensions of the classroom [10m in length by 6m in width]. It too echoes the “dual phenomenon” notion where the built structure falls within the blocks and circulation occurs in the strips between.

For safety reasons the site is enclosed with a “green screen” - a frame structure on which planting is grown. The enclosure will however have transparent Perspex gaps through which passers-by can catch a glimpse of, and connect with, the world created within. A display wall, in which the children's artwork can be placed, is situated along the heritage route for pedestrians to admire. Opportunities are created so that parents may watch their children at play.

The children can also reconnect with the outside world, so as to not feel completely isolated, due to their positioning at various heights and opportunities created by the vantage points.

With the creation of a pre-school complex different to standard buildings with a dissimilar form to which children are accustomed to, one is to believe that they will then be further encouraged to interact with the structure and develop various skills that normally would not be stimulated at other standard pre-schools. We are currently in an era where climbing trees is no longer the norm. Hopefully this passion will be re-awakened with this architectural typology.

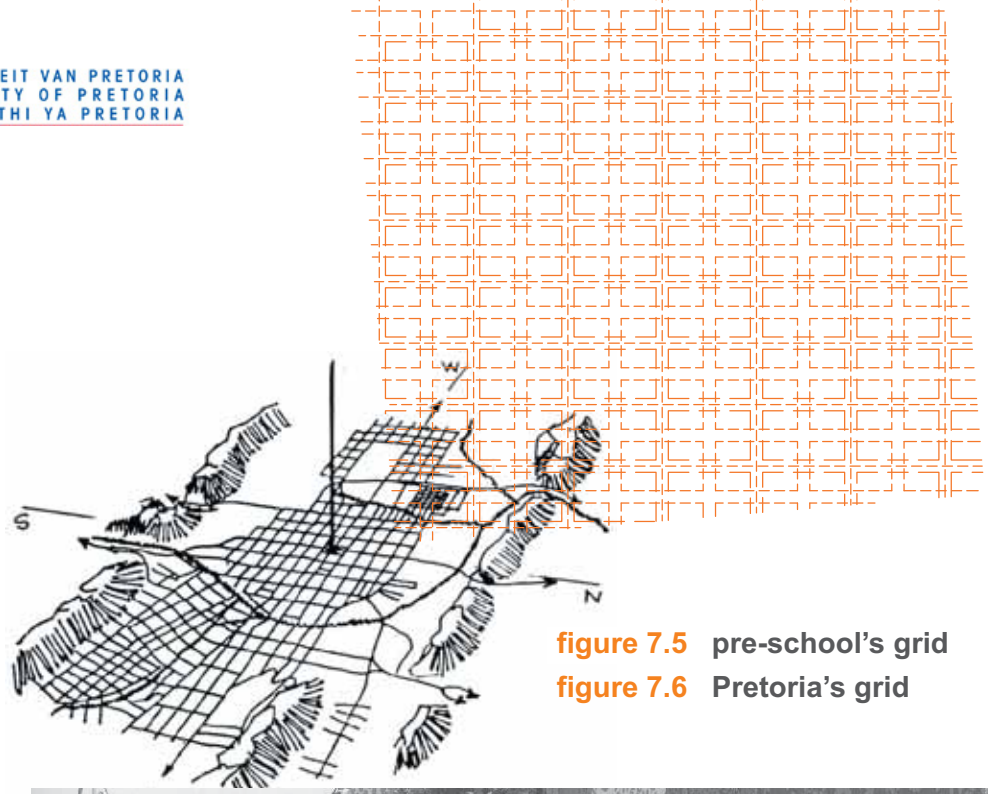


figure 7.5 pre-school’s grid
figure 7.6 Pretoria’s grid

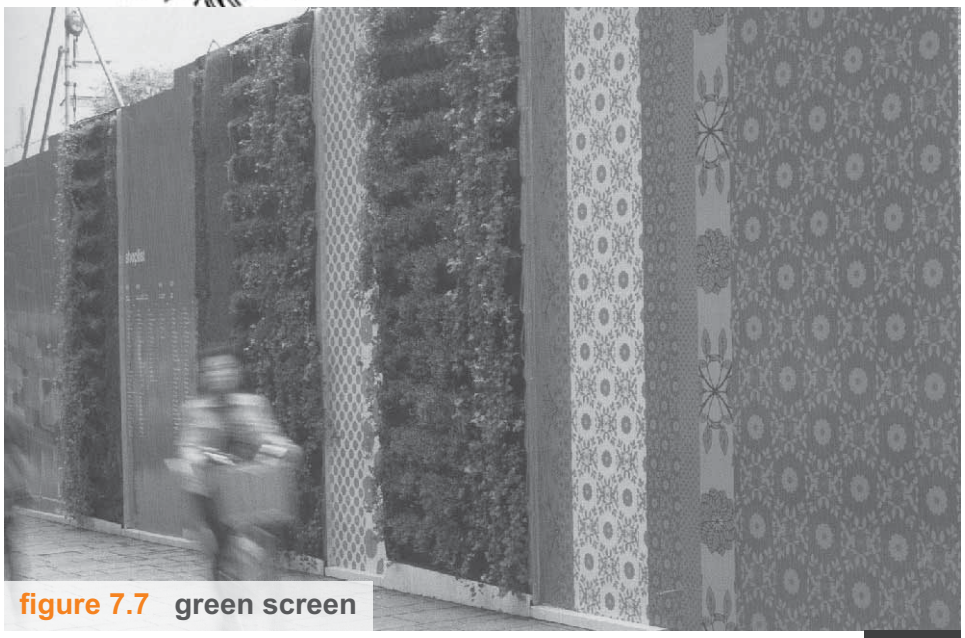
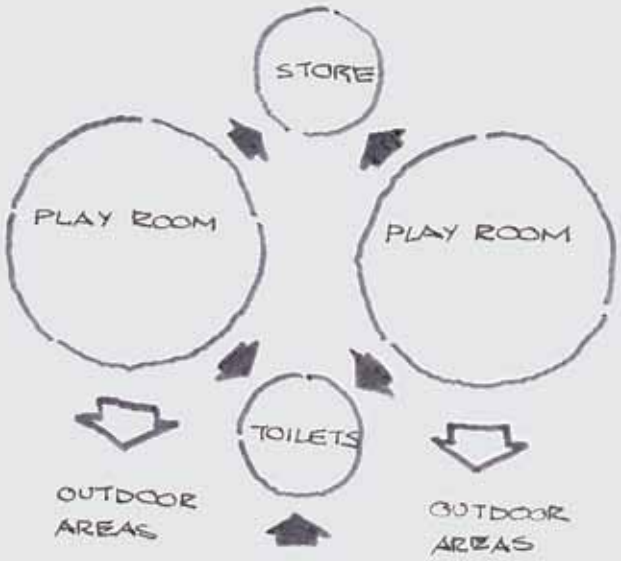


figure 7.7 green screen



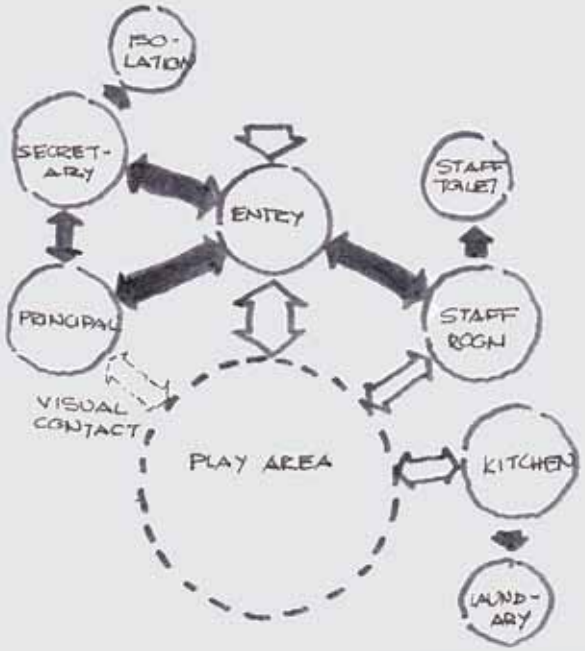


figure 7.8 connectivity bubble diagram

Connectivity is key, not only in terms of the site to its context, but also in organisation of the site and built structures. Ideals of this concept are found to be reflected in the assembly of “Lego” building blocks through: versatility and flexibility of uses and inter-activeness where the different possible combinations of the components create a single functioning entity.

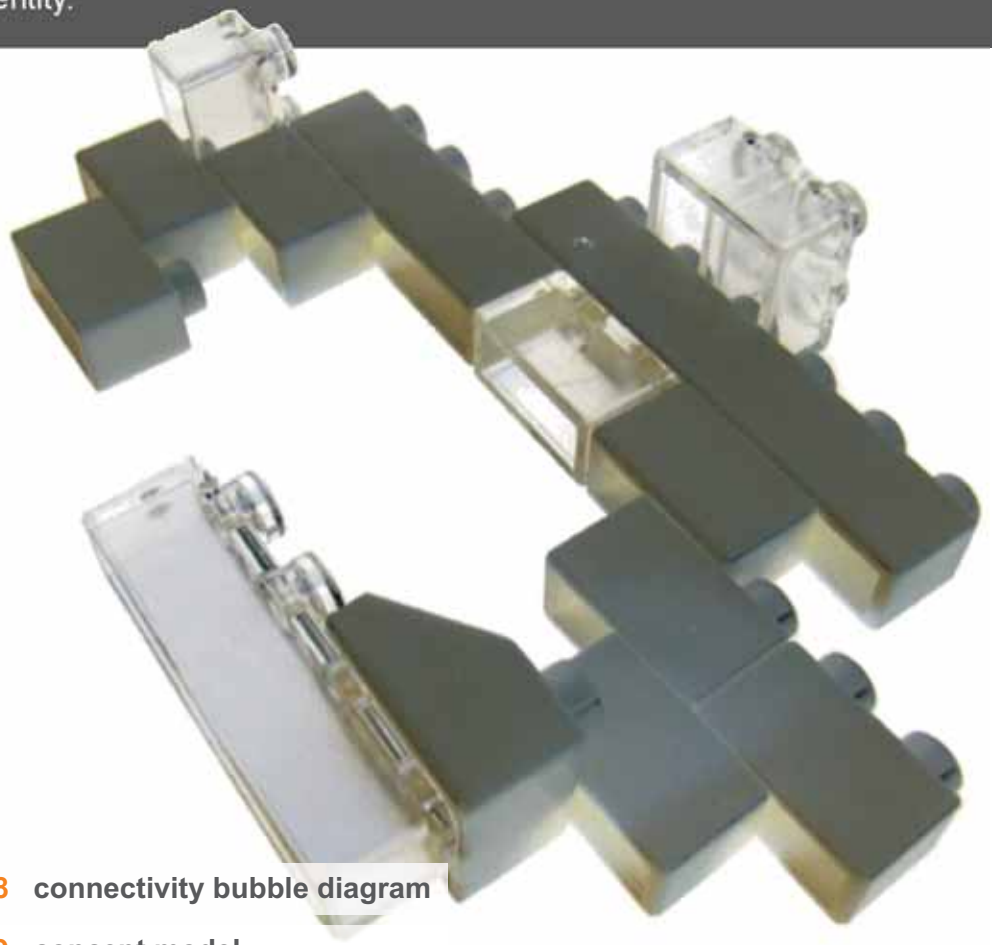
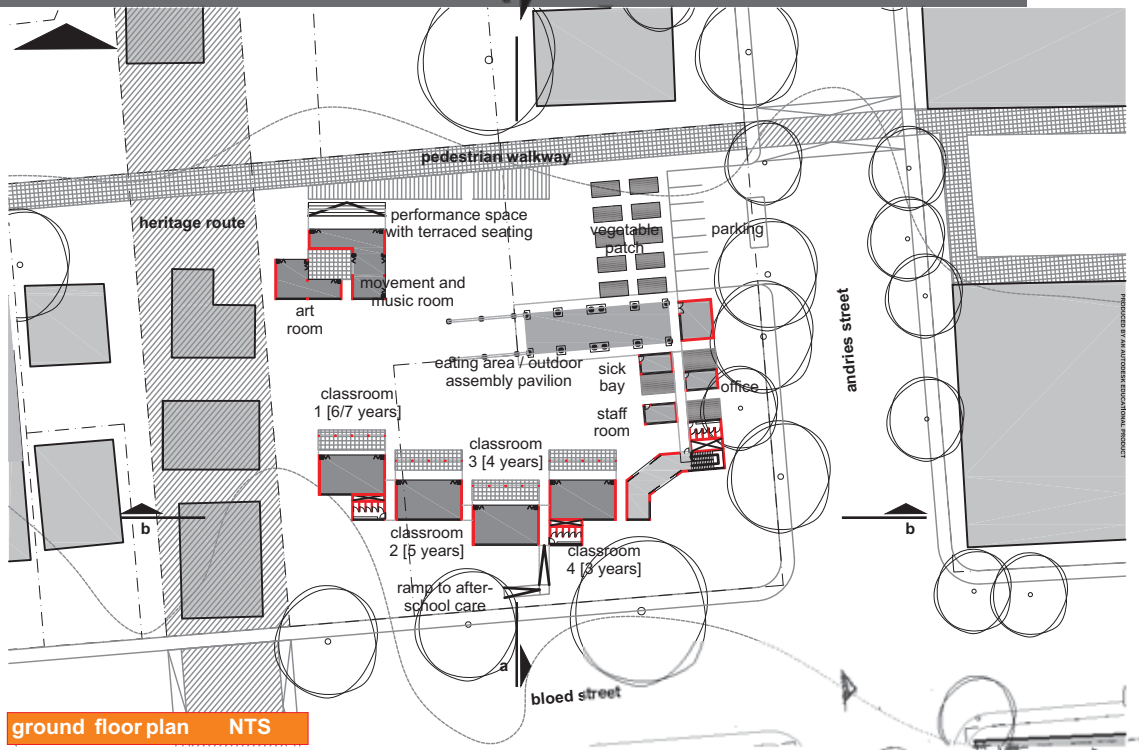


figure 7.9 concept model

07_2

development of design

proposal 001...



ground floor plan NTS

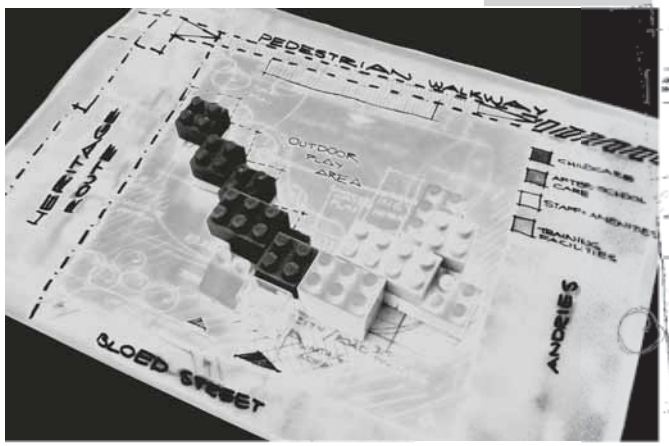


figure 7.10 concept model

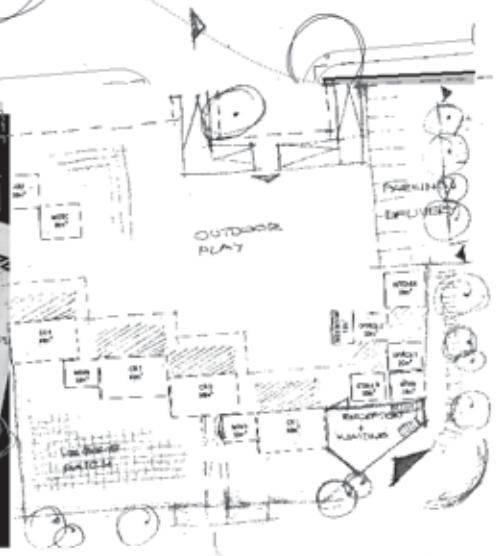


figure 7.11 sketch plan

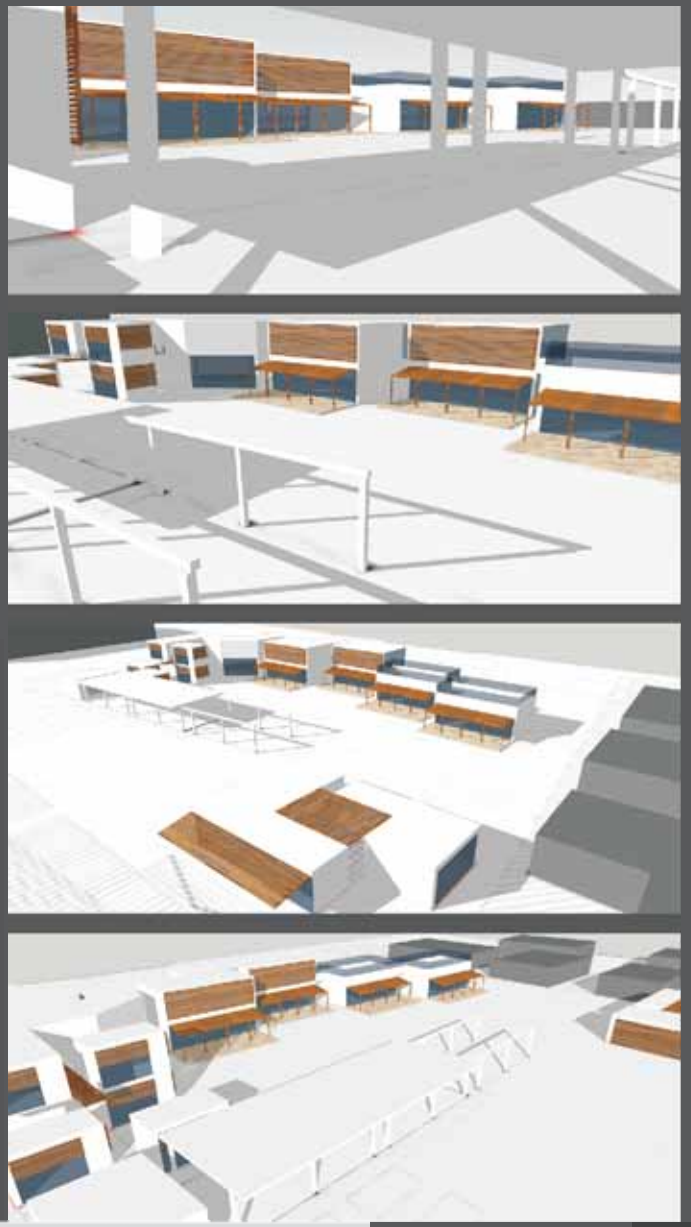
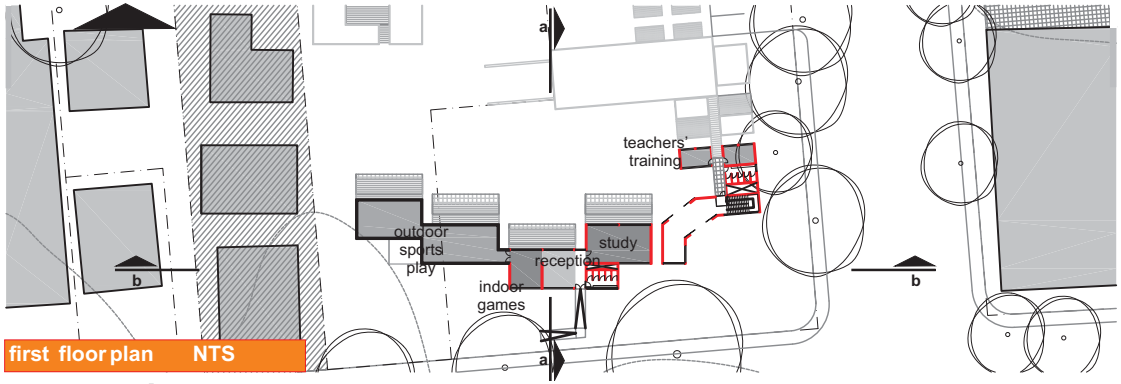


figure 7.12 3D views

section a_a NTS

section b_b NTS



first floor plan NTS

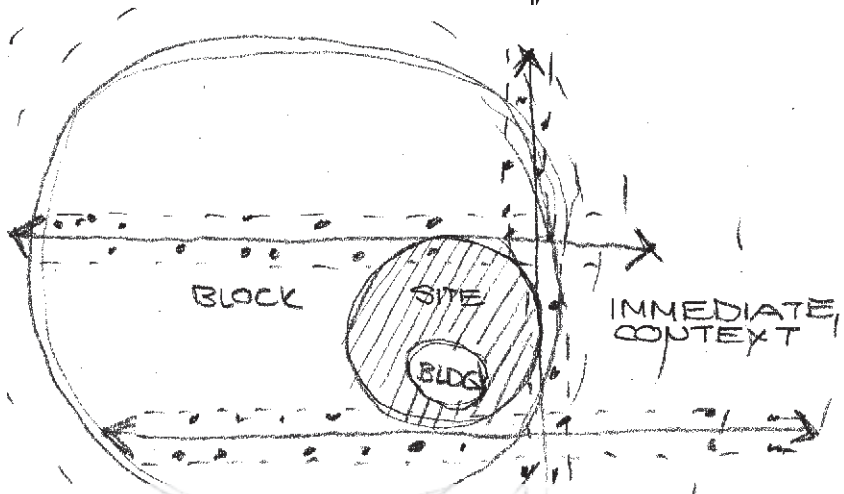


figure 7.13 extending the field of play diagram

This proposal focused on connections to the pedestrian walkway while leaving maximum space for play. The attempt was made to extend the field of play by pulling out the structure of the dining area to create play equipment. Staggering of the buildings resulted in an inner core that was buffered from the southern edge of the site.

Criticisms...

The site was under utilised without any evidence of it being controlled or shaped. It was suggested that the site be made smaller and the structuralism approach applied to the entire site and not only to the building. The edges failed to connect to the immediate context or the urban framework. Ideas of play were not explored to its full potential enough to create an innovative architectural typology. The location of the entrance was also deemed to be uncomfortable.

development...

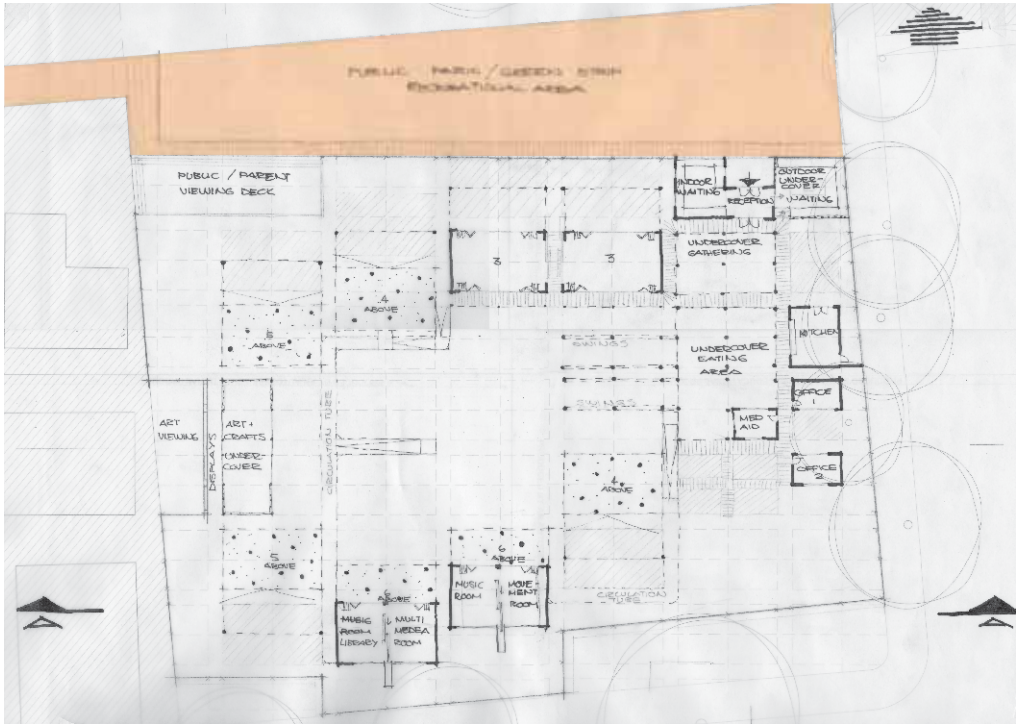


figure 7.13 sketch plan hi-lighting the proposed pedestrian walkway

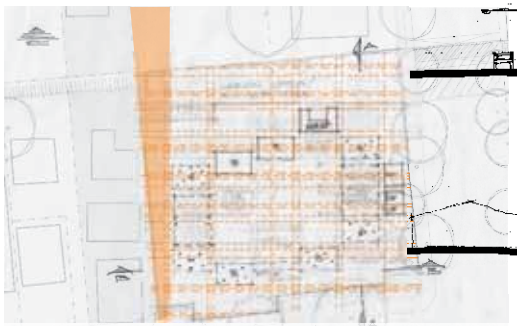


figure 7.14 sketch plan hi-lighting the grid network and proposed heritage route

figure 7.15 sketch sections showing heights

resolution of issues...

optimising site usage_ In order to make better use of the site the number of classrooms originally accommodated was doubled. This can be justified by the increased residential components proposed in the urban framework resulting in a large enough population of children. The pedestrian walkway was made wider to give more of the site back to the public. A heritage walkway was proposed alongside the heritage route so that there would be a comfortable passage through the block.

ordering device_ A tartan-like grid was then applied to the entire site to assist in ordering the site and configurations of the various structures. This resulted in a village-like setting where the seperate entities are connected by pathways.

contextual links_ The edges of the site still however failed to connect to the context. I maintained that the pre-school needed to turn its back to its surroundings in order to create a safe internal environment. Relocating the entrance was experimented with to several possible positions to gain the best possible access to the site and to link to the most important contextual intervention, the pedestrian walkway.

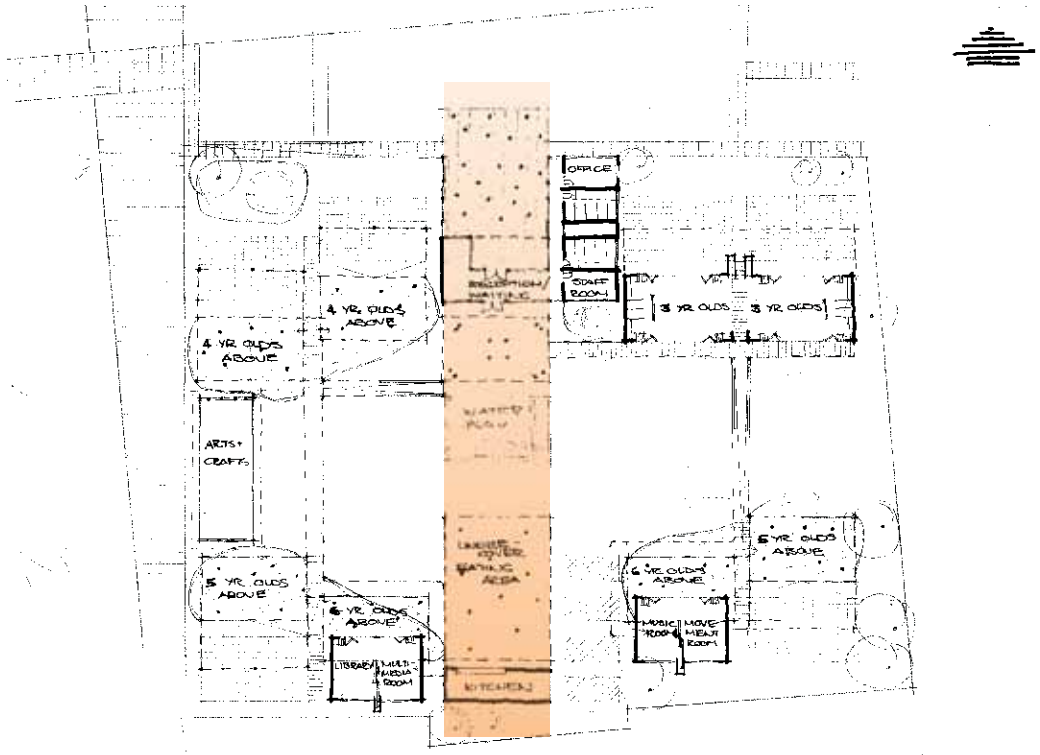


figure 7.16 sketch plan hi-lighting central circulation route

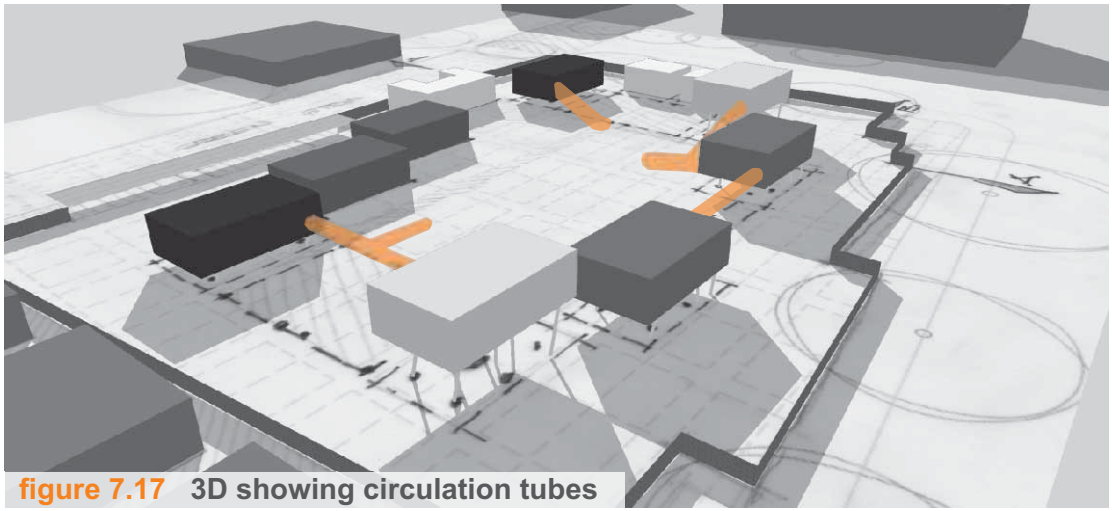


figure 7.17 3D showing circulation tubes

entrance_ The conclusion arrived at was that the entrance was best suited centrally for practical reasons of reduced circulation for the children. This resulted in a central corridor through the site that started to connect in a north-south manner.

incorporating play into the design_ Still remaining was the notion of creating a play-inspired more innovative architecture. This was achieved by varying the heights of each of the classrooms to create play-spaces beneath where the supporting structure forms climbing equipment. The circulation ramps became tunneled tubes that added to the element of fun.

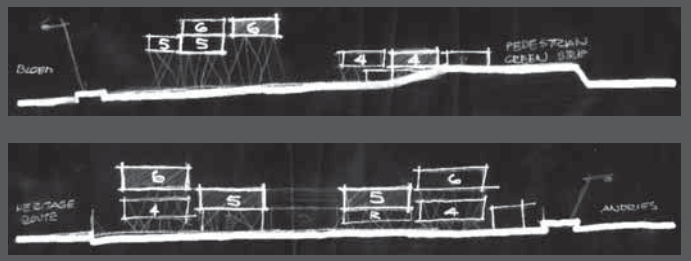


figure 7.18 diagrammatic sections

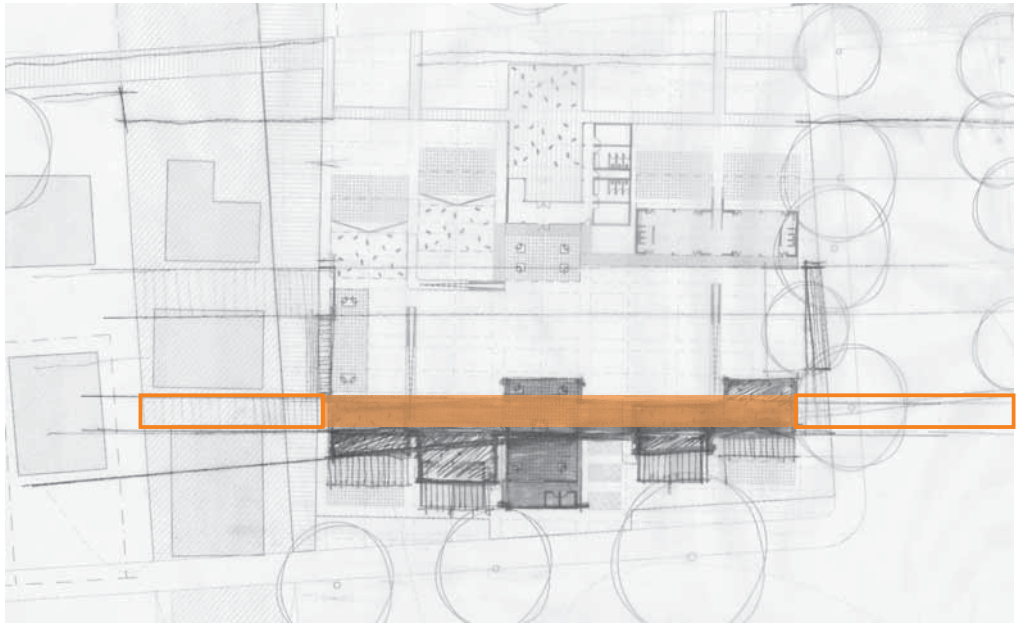


figure 7.19 sketches exploring a common roof structure

ordering and contextual connectivity_ To try add further order to the layout an attempt was made to unify the classrooms on the northern half of the site by placing them under a single roof structure while still maintaining the staggered effect as the classrooms were displaced under either side of the roof. The dimensions of the roof were generated by the geometry of the pathways between the neighbouring heritage buildings in a desperate effort to connect.

This however proved to be unsuccessful as the varying heights of the classrooms proved to be problematic and the imposed roof became redundant.

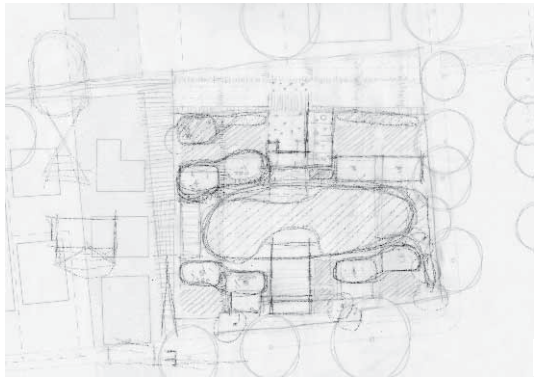
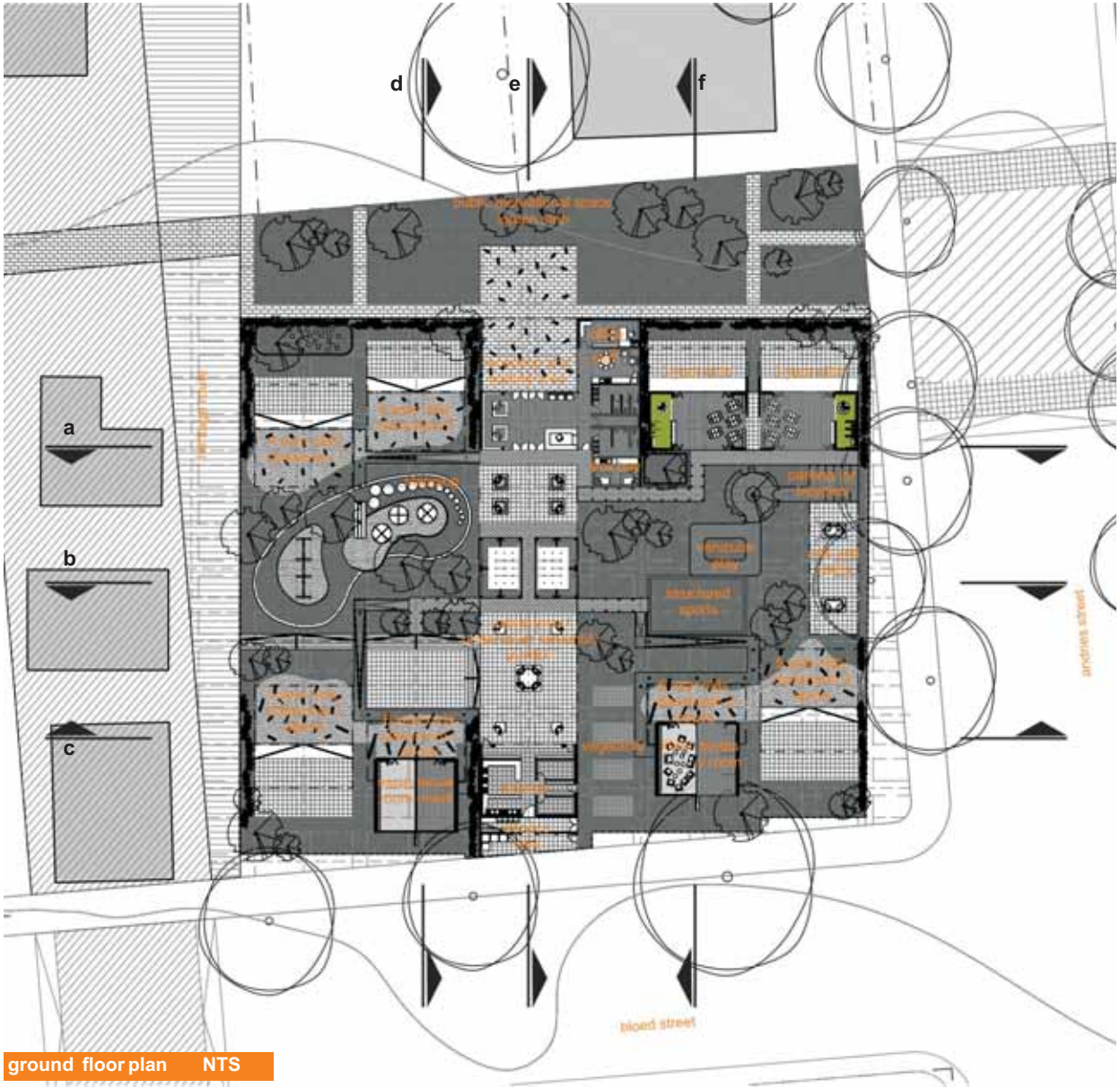


figure 7.20 sketch attempting landscaping

integration of landscape and architecture_

I realised I had not achieved what I had originally set out to do, to design the site as a whole by integrating landscape with the building. My pre-occupation was still with creating a built structure then trying to design the spaces between.

proposal 002...

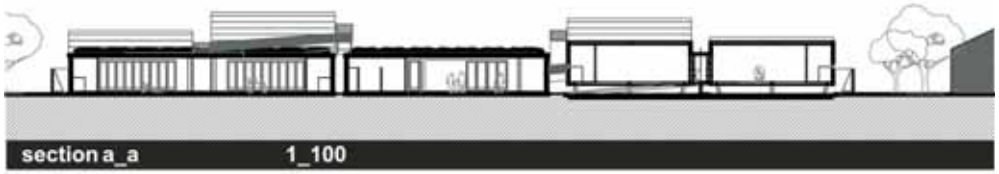


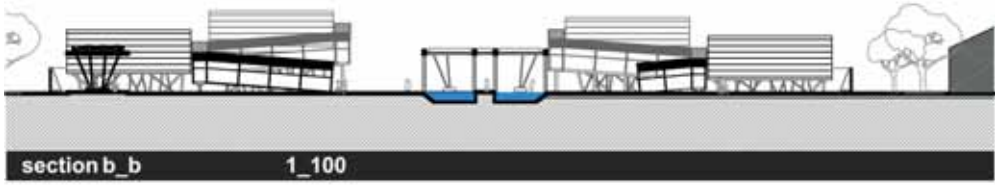
ground floor plan NTS

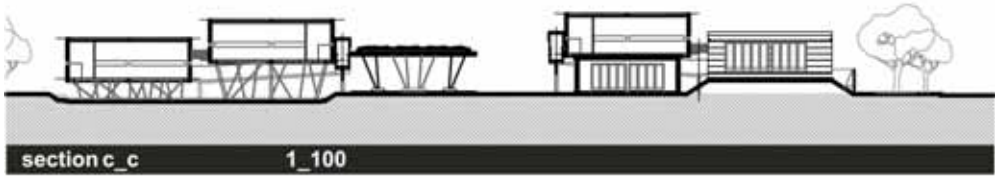
This proposal further focused on connections to context by creating view points on the eastern and western boundaries. Circulation was celebrated and the central route emphasised.

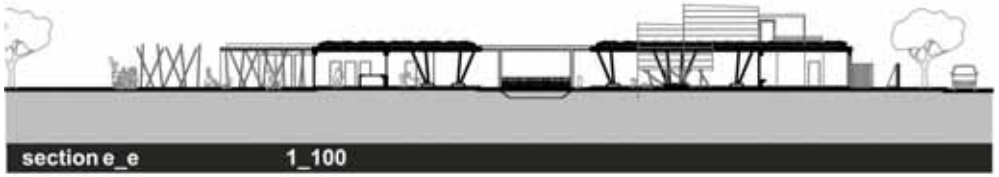
Criticisms...

The density and scale of the building was still an issue and was said to be too “suburban”. It was once again suggested that the site should be made even smaller or other buildings proposed on the site. I had the option to create a park and pre-school in one or to create a pre-school with a park on the side. The scheme was believed to be limited with not enough development of the architecture.









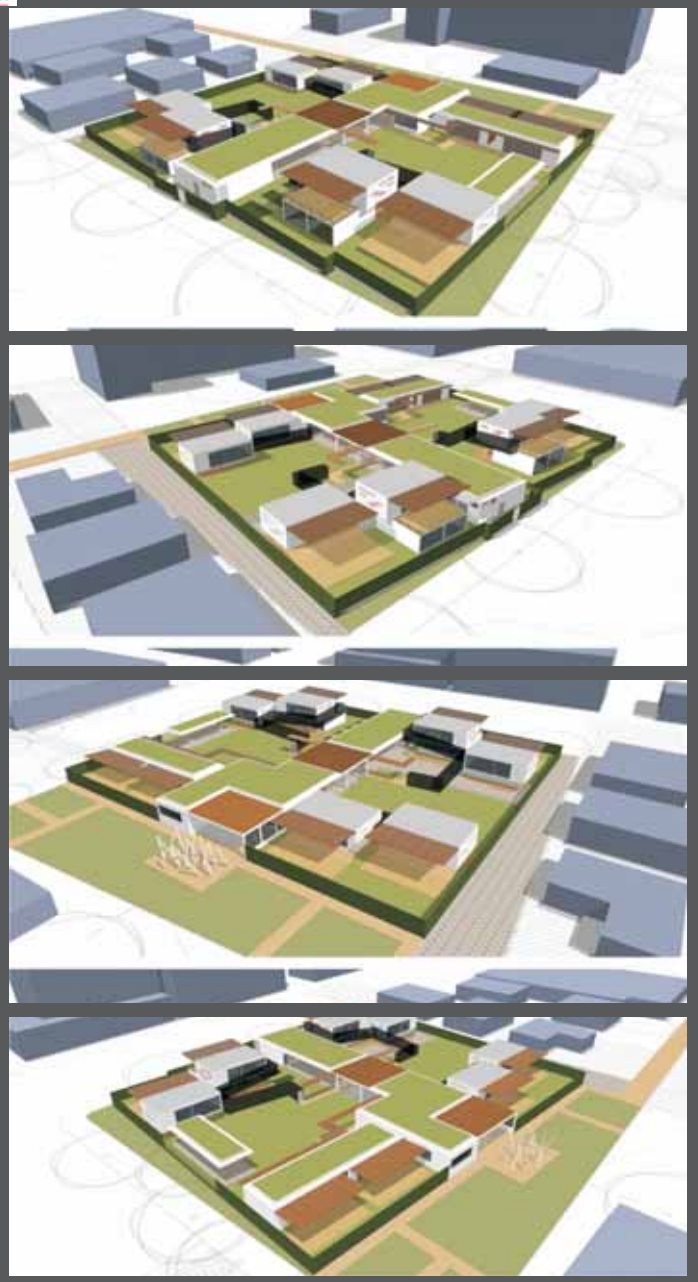


figure 7.21 3D views of second proposal

development...

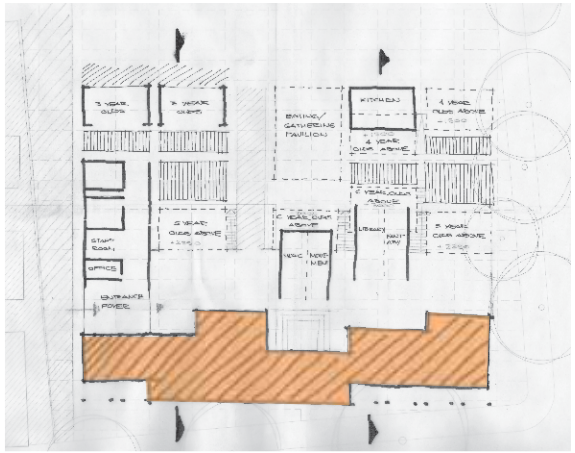


figure 7.22 proposal of office block

figure 7.23 pairing attempt

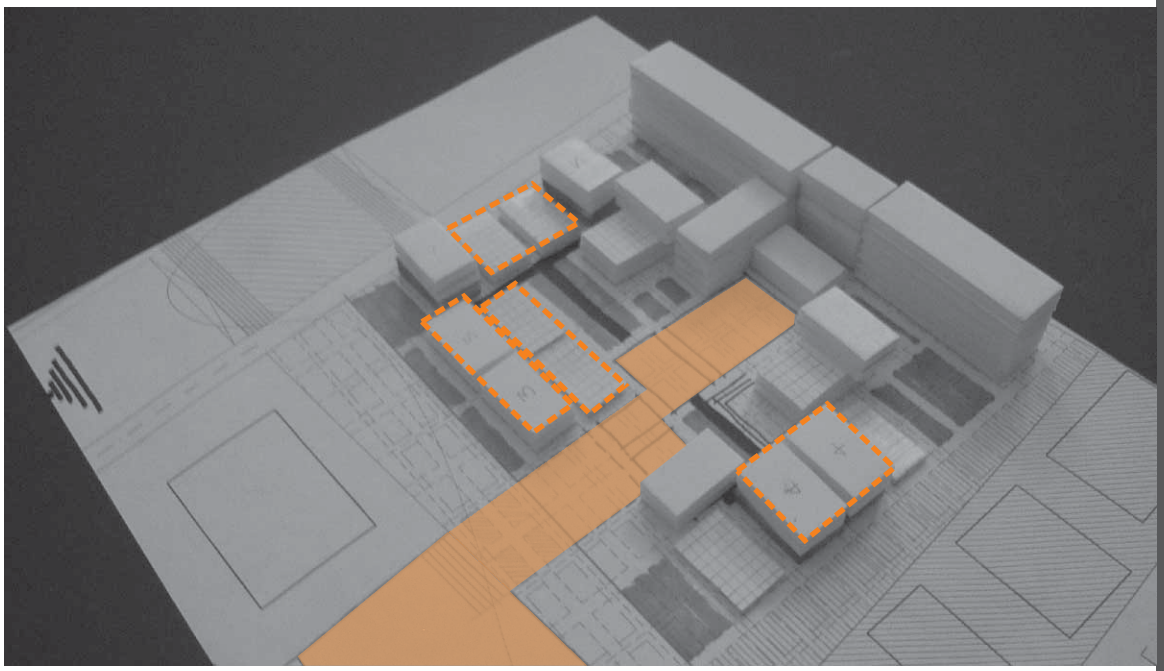


figure 7.24 concept model investigating pairing and staggering central route

site density and scale_ To alleviate the density issue I have proposed a three storey block of rentable space on the southern boundary of the site. This not only serves in the densification of the site but assists in scaling down from the eight story building across the road to the proposed two storey pre-school.

The rentable space can be used for the promotion of community assistance by housing upliftment facilities [clinic, night classes, communication facilities etc.]

site reconfiguration_ The addition of the office block raised a new question of how to handle the space between it and the pre-school. The entrance was once again relocated creating an enclosed activity corridor between the two structures. This went against too many original design informants and this exploration concluded in going back to the previous scheme and reconfiguring it to suit.

connecting to the park_ Due to the reduction of the site the park had to be relocated north of the pedestrian route. The geometry of the neighbouring boundaries conflicted with the school's central circulation feature. Moving the entire feature west segregated two classrooms so the attempt was made to stagger the route.

pairing of classrooms_ The possibility of classrooms sharing spaces and opening out into each other was considered.

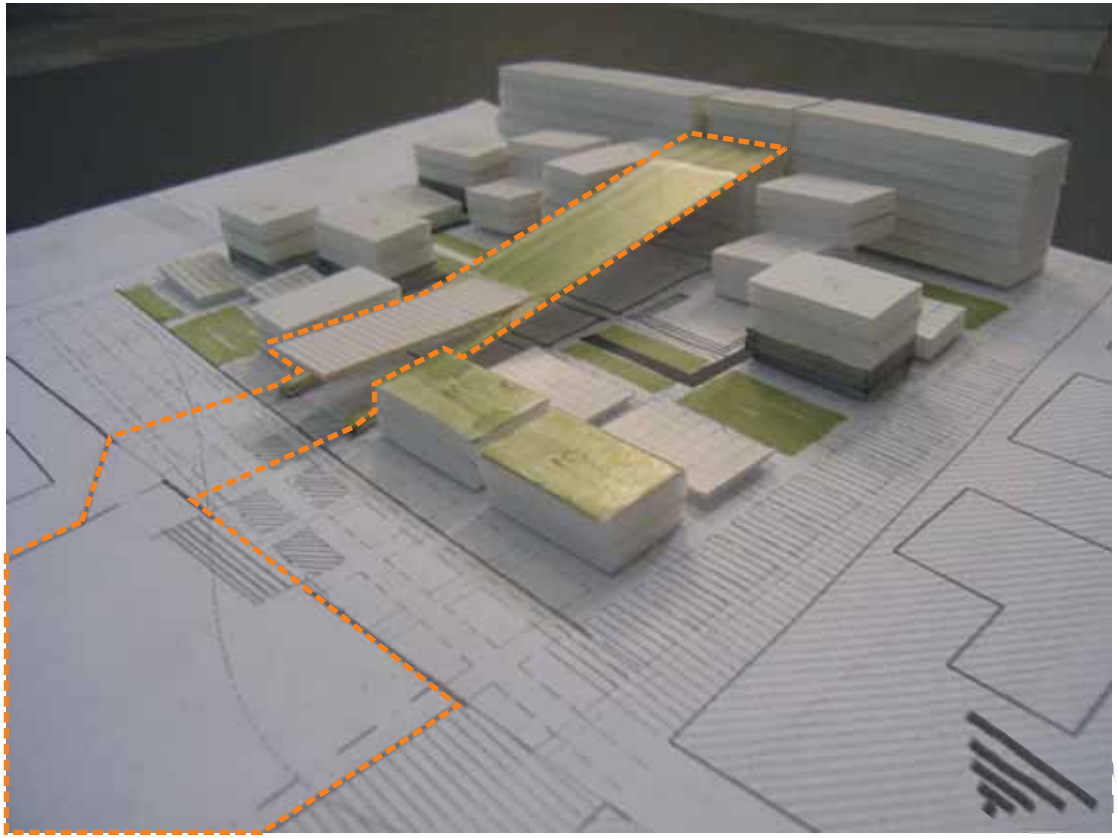


figure 7.25 concept model of the landscaped hill-like structure

integrating landscape and architecture_ Integration of landscape and architecture still had not been explored to its full potential by this stage. The green roofs applied to the stereotomic structures was as far as the notion had been taken.

I proceeded to slope the roof of the central circulation route so that access could be gained to the green-scape which would have otherwise been unused and gone to waste. The result is a man-made hill-like structure on which the children can play. This feature also assists in creating a sense of continuation of landscaping from the playground to the pedestrian recreation strip, through the pre-school, terminating in a green wall on the southern facade of the proposed office space. This gives the appearance of the green peeping between the two wings of the office block while improving the quality of the street-scape.

configuration of classrooms_ The layout is such that all classrooms ramp to undercover paved outdoor play spaces which flow into outdoor green play areas. Classrooms had to be strategically positioned so that the climbing structures in the voids beneath could be accessed .

08 technical exploration

technological aesthetic...

The pre-school reads as a series of modular boxes sitting at what may first seem as a random composition. Yet these structures are strategically placed on a tartan grid network. The lightweight classrooms are more abiding to the grid where as the grounded structures [housing the administration, utilities and dining components] tend to merge over the lines. Routes and circulation are made into features and can be clearly read.

The supporting structure of the classrooms is over compensated for and emphasised as they serve a dual role to become climbing equipment. Aluminum cladding on the classroom facades also reflect the notion of a modular system as the recesses, where the cladding is fixed to the supporting frame, can be seen.

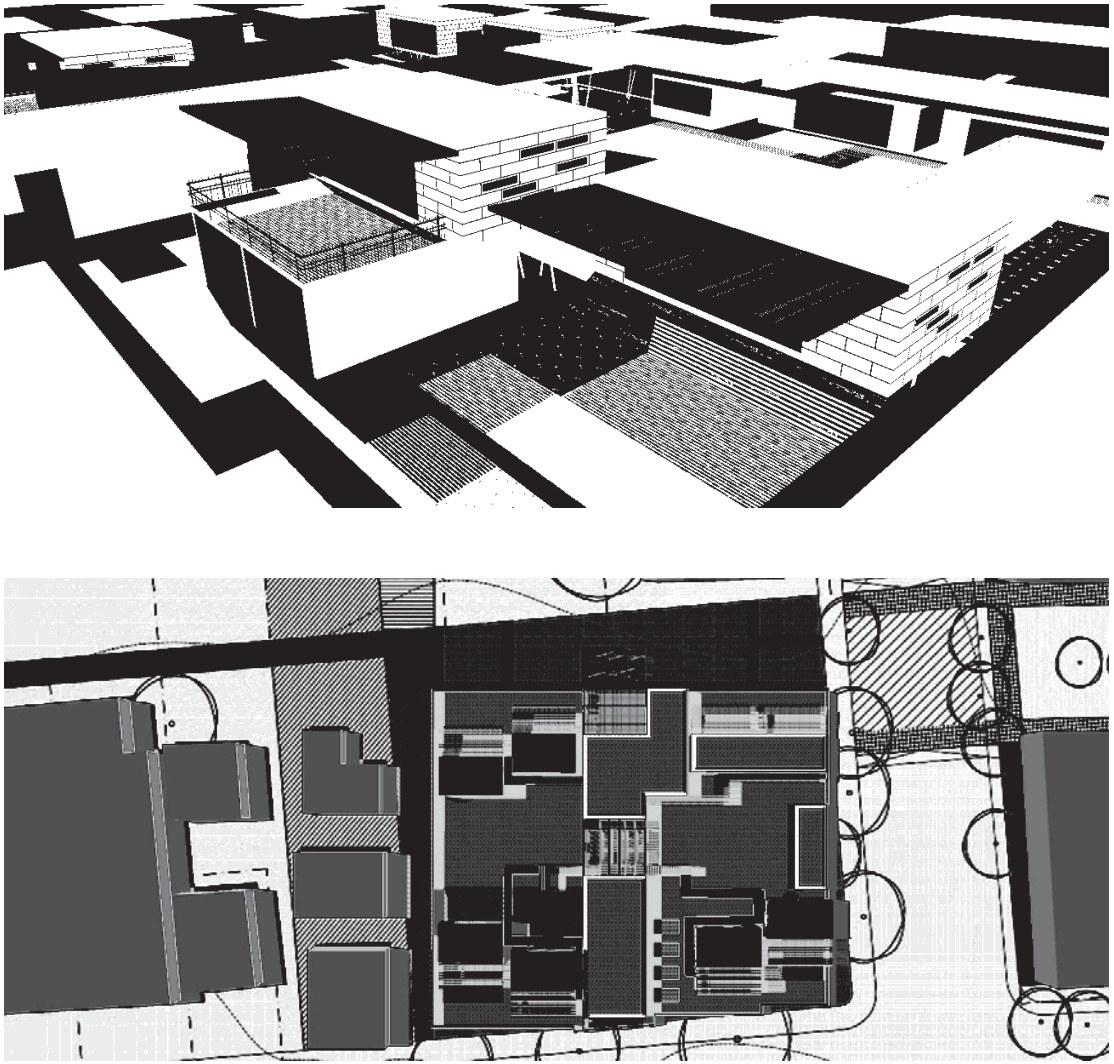
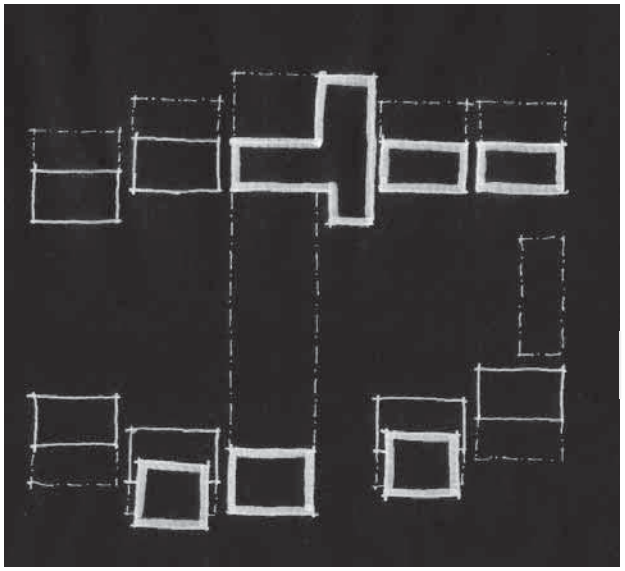
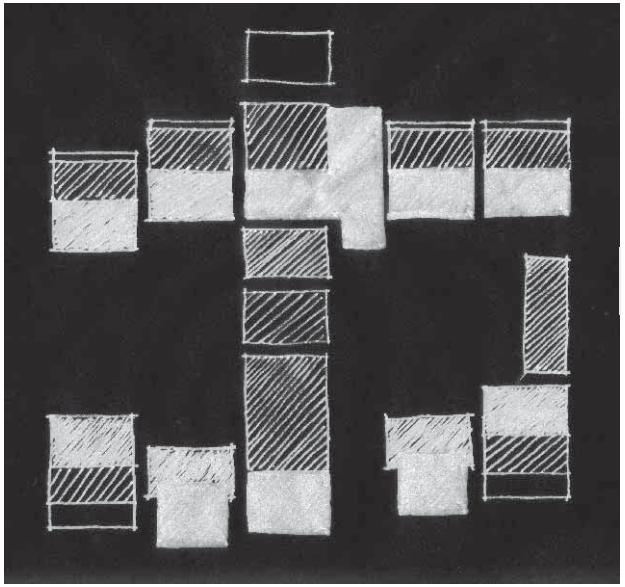


figure 8.1 3D models expressing modularity

stereotomic and tectonic





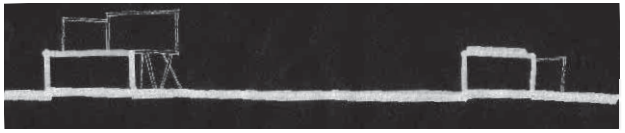


figure 8.4 **diagrammatic section differentiating between stereotomic and tectonic structures**

The pre-school complex is made up of a series of stand-alone structures. Where the materials and structural composition of each of these structures are reflective of the function it houses.

figure 8.2 **diagram differentiating between stereotomic and tectonic structures**

The entrance and administrative components of the complex, as well as those facilities accessed by all the children, are of a stereotomic nature consisting of brick cavity walls, concrete floors and roof slabs topped with roof planting.

figure 8.3 **diagram showing enclosed spaces, covered outdoor spaces and open spaces.**

Classrooms are tectonic steel frame constructions with aluminum cladding on the external surfaces and are cladded with timber on the interior surfaces. These are roofed with metal roof sheeting.

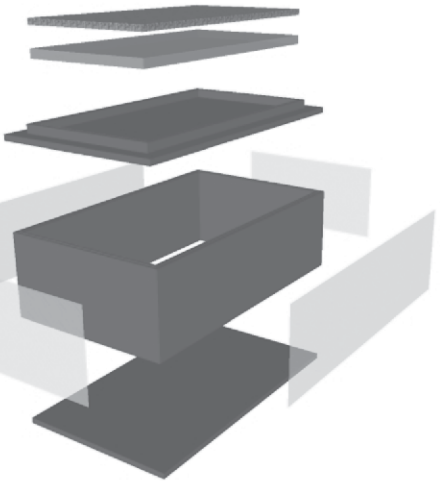


figure 8.5
3D stereotomic model

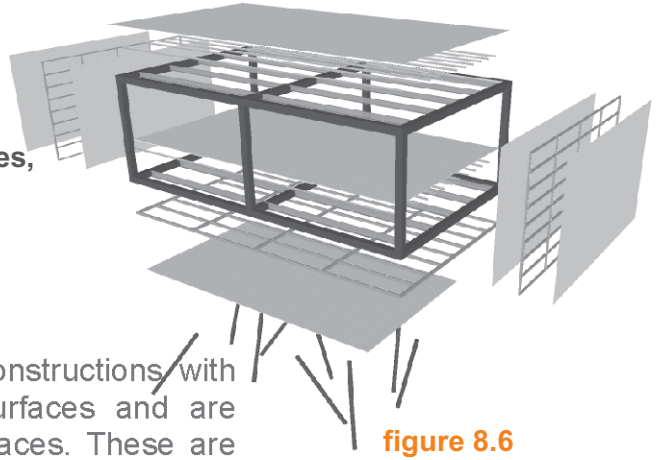


figure 8.6
3D tectonic model

structural aesthetic...

Stereotomic

Primary

- load bearing brick cavity walls consisting of a 50mm cavity between the two brickwork skins of 110mm each
- 150mm concrete surface bed

Secondary

- 200mm reinforced concrete roof slab with integrated 300mm downstand beam and 300mm upstand beam recessed 500mm from the perimeter

Tertiary

- plaster and paint
- planting on the roof

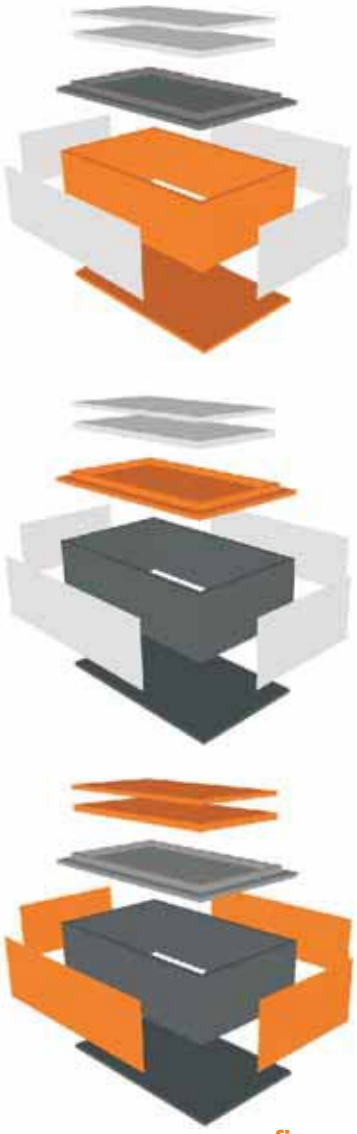


figure 8.7

Tectonic

Primary

- 100mm to 150mm mild steel diameter tubular pipe columns
- 200mm by 200mm square hollow section beams

Secondary

- 50mm diameter tubular pipe bracing
- sub-structures onto which the cladding and roof sheeting is fixed

Tertiary

- powder coated aluminum cladding [external]
- marine plywood cladding [internal]
- glasswool insulation between the cladding
- corrugated roof sheeting

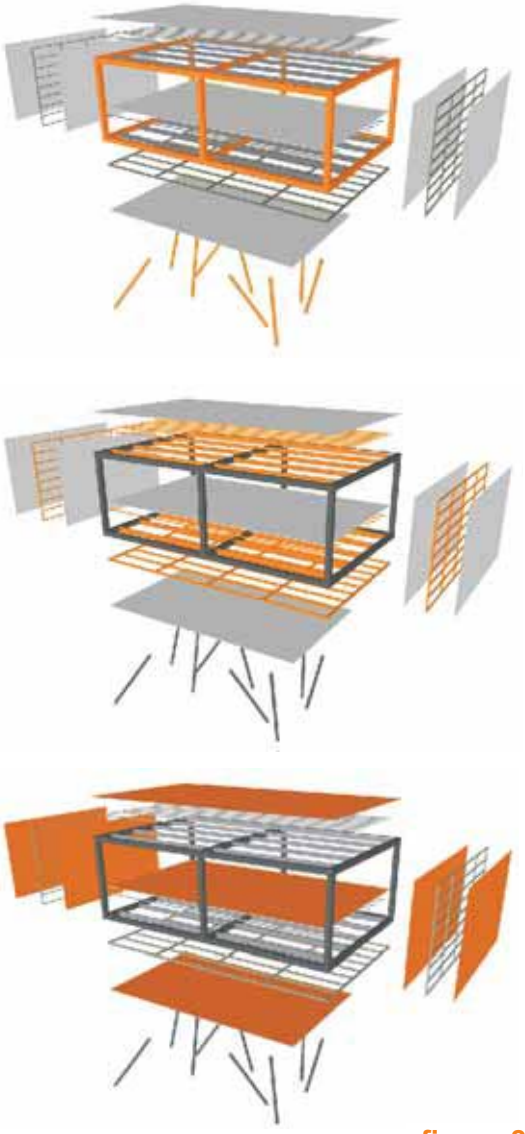


figure 8.8

materiality...

The selection of construction materials, to reiterate, were chosen to differentiate between the use each seperate structure accommodates

A more contemporary selection of building materials was selected in keeping with the progress of the area as reflected in the aesthetic of the recently constructed Bloed Street Mall.

The general material pallette of the pre-school is neutral colours with splashes of accents [red, blue, yellow and green] provided by vinyl inlays in classroom glazing.

Aluminum cladding was chosen to reflect the industrial nature of the area.

Timber was introduced to assist in softening the appearance of the complex, creating a friendlier environment for children.

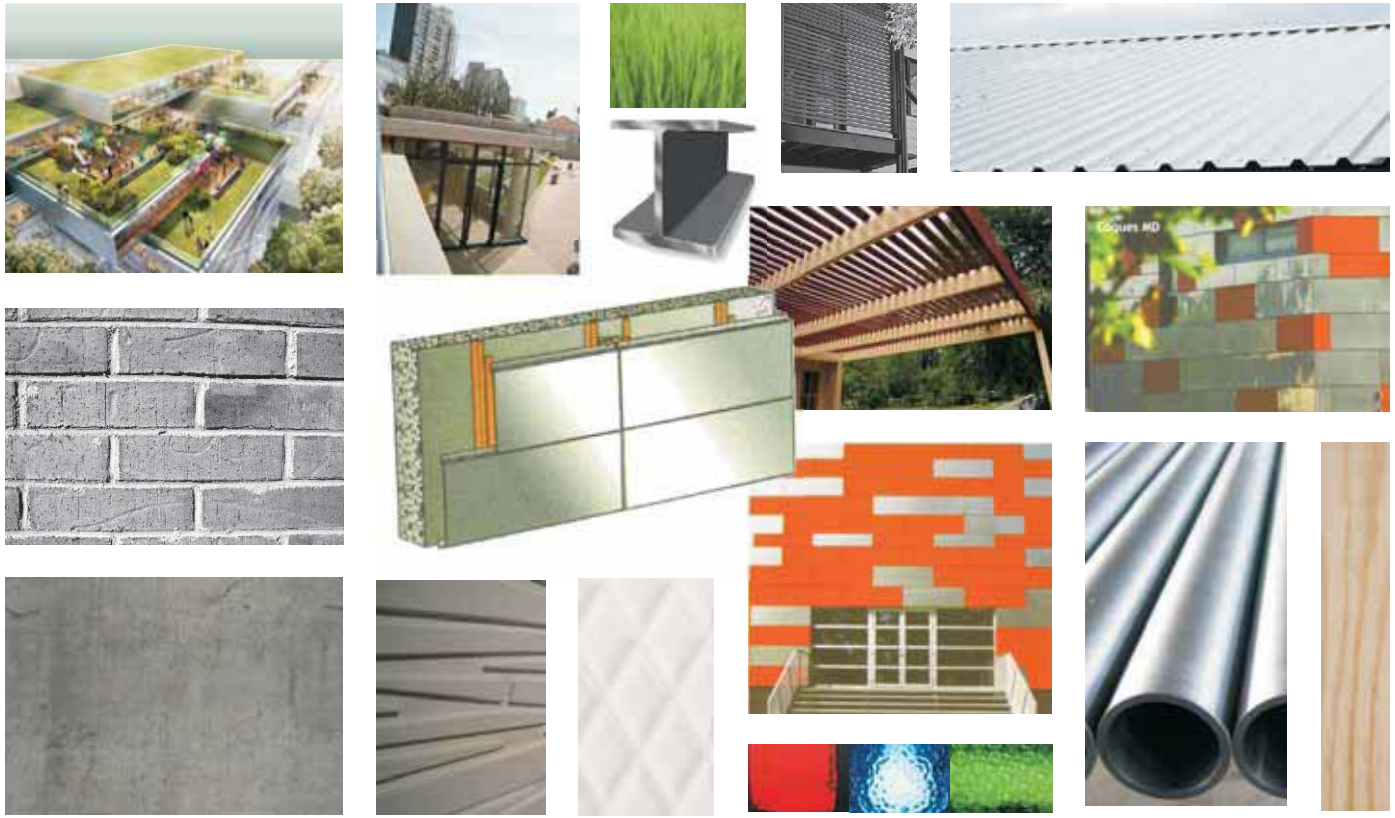


figure 8.9 materiality collage

The sustainable building assessment tool [SBAT] was used to predetermine the design process and applied to optimise good design practice. The following is a culmination of the most applicable aspects of the three fields outlined [social, environmental and economic issues] in the SBAT manual , are used to best explain the design decisions of the pre-school.

social issues...

Occupant comfort
Comfort is paramount in an educational facility as it has a direct impact on the health, happiness and productivity of the users. Children need to be as alert as possible to best absorb the teachings imparted to them.

Lighting
The pre-school is orientated to so that all spaces receive maximum amount of natural light so that no space requires a constant electrical supply. East and west facing facades having minimum glazing while glazing is most prominent on the north and south facing facades. Glare and harsh light, especially from the north, are controlled by appropriate shading devices.

Ventilation
All spaces have sufficient controllable openings so that they are naturally ventilated. The Issue of thermal comfort is an important aspect as human performance is negatively influenced when room temperatures are above 28 degrees Celsius or below 18 degrees Celsius. Thermal comfort is achieved by sufficient insulation provided by the walls an roof structural compositions.

Air movement and humidity must be ideal for hygienic comfort especially when the space caters children.

Noise
Traffic noise from busy Bloed street is decreased by the buffer created by proposing the office block. Additional sound insulation is provided in the music and movement room to assist in decreasing the projected noise levels.

Views
All spaces have maximised visual access to the exterior to further enhance the connection from inside to outside. All users are located within 6 meters of an opening at any given time.

Inclusive environments
The site was specifically chosen for its position near existing bus and taxi transport nodes. A parking facility has been proposed for the western end of the block and the proposed bus rapid transit routes passes close to the site. Pedestrian routes through the block have been proposed in order to best traverse the area.

Access to green outside spaces
This aspect is the driving force of the intention to integrate landscape and architecture. It is vital in a proposal of this sort that opportunities for play are encouraged and all children have easy access to the social green play spaces.

User adaptation
Adaptation of spaces is implemented in the form of inter-room partitions so the size os the room can be increased or decreased as the necessity arises. The three year old's classroom can open into each other to form a single large space.

Community involvement
Space is available in the proposed office space to house services for local use.

Security
Access to the site is controlled as security is vital for the safety of the indefensible occupants. Measures have also been taken to create clear visual links between spaces and routes.

Health
A sick bay has been provided for in the accommodation as children are prone to injuries and are easily susceptible to childhood illness that require a degree of quarantine.

environmental issues...

Water

Rainwater and grey water are to be collected and stored in underground tanks to be used in irrigation of the landscaped areas. While storm water runoff will be reduced by using pervious and or absorbent surfaces. The planting used will be indigenous species with low water requirements.

Energy

Energy consumption will be reduced as passive ventilation and lighting conditions have been employed. Using play equipment that harvests kinetic energy produced by children playing with the equipment has been investigated however this technology has not been explored to its full potential and products are not easily available in South Africa.

Recycle and reuse

Organic waste produced from the kitchen will be composted and used in the educational vegetable patches.

Neighbouring buildings

The proposal is sensitive to the buildings surrounding the site especially to the small scale heritage buildings to the west and residential block to the north.

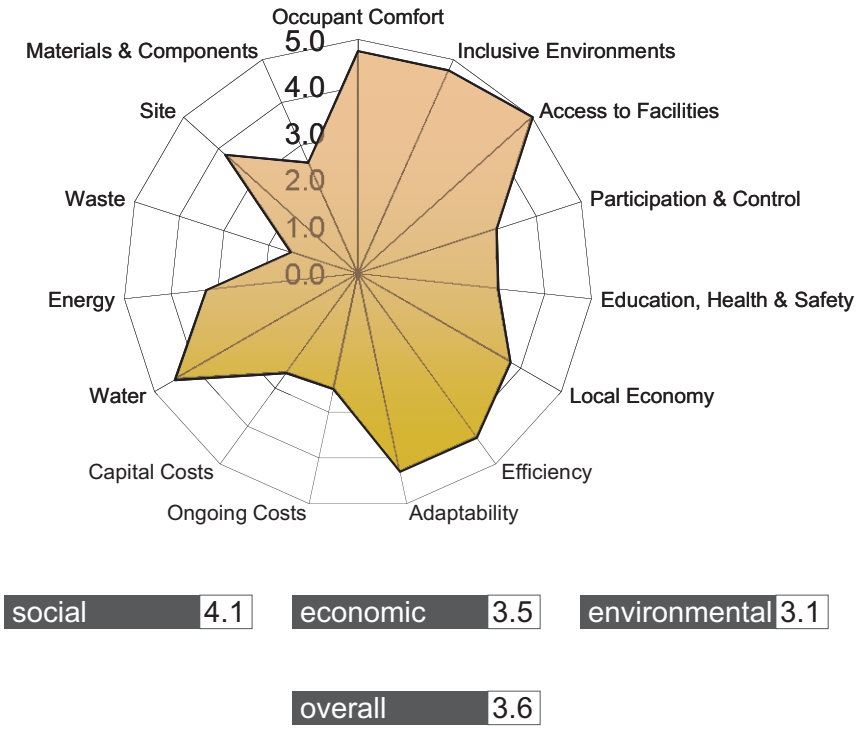
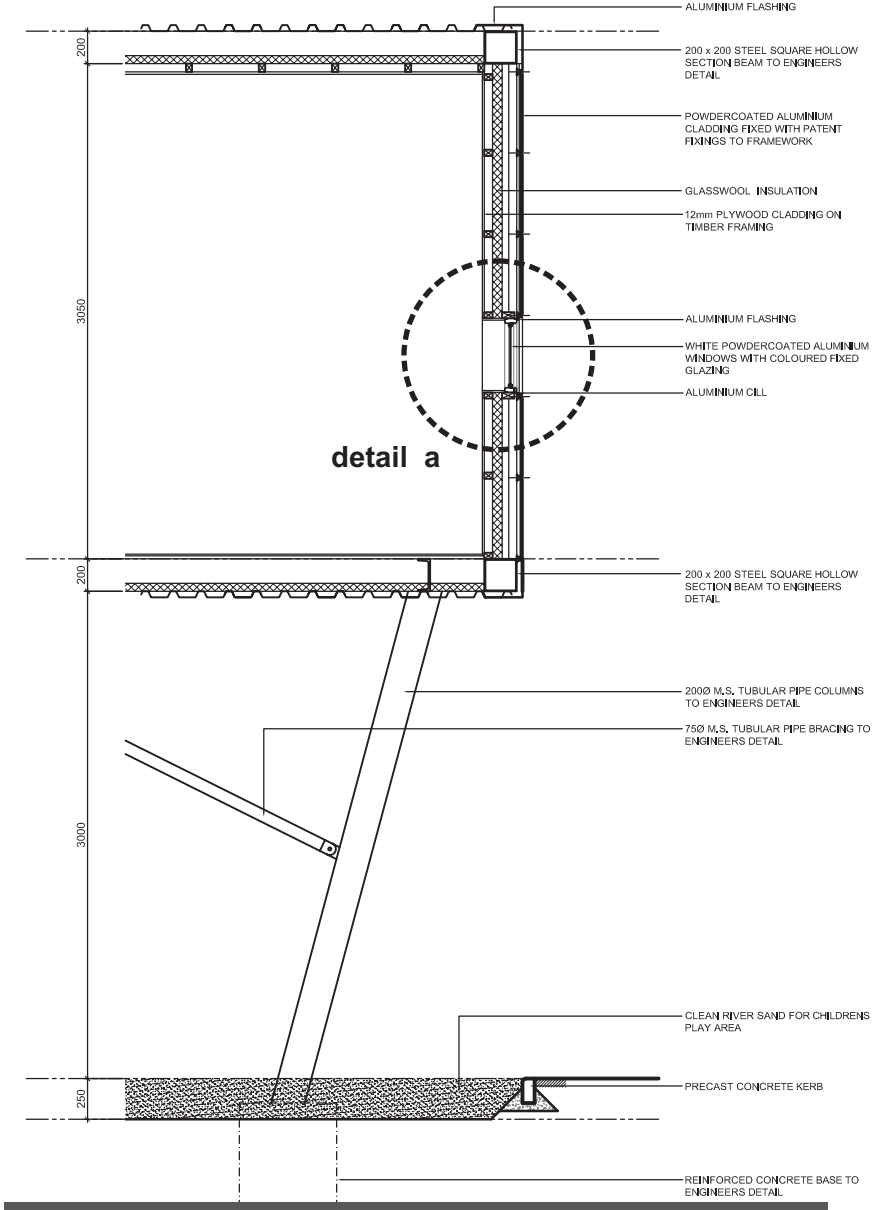
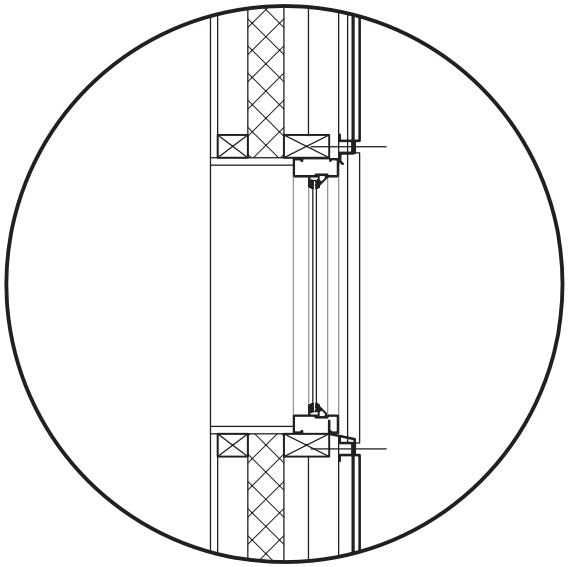


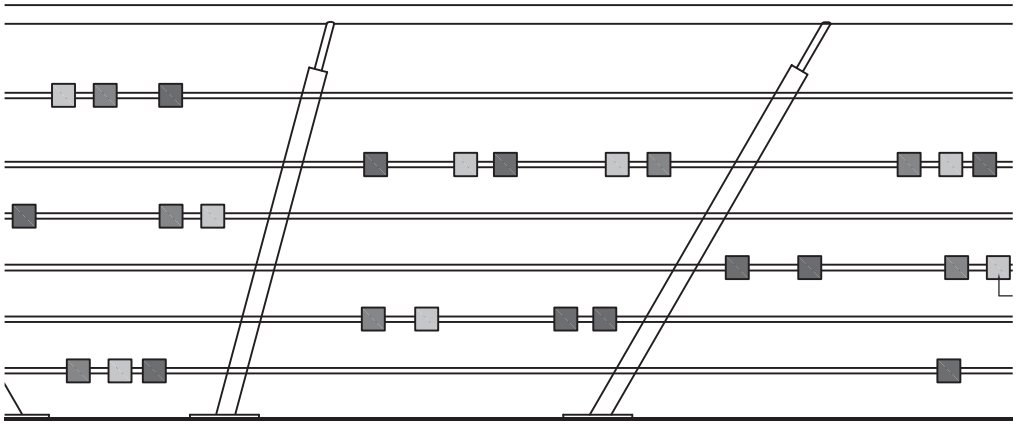
figure 8.10 **results generated by SBAT questionaire**



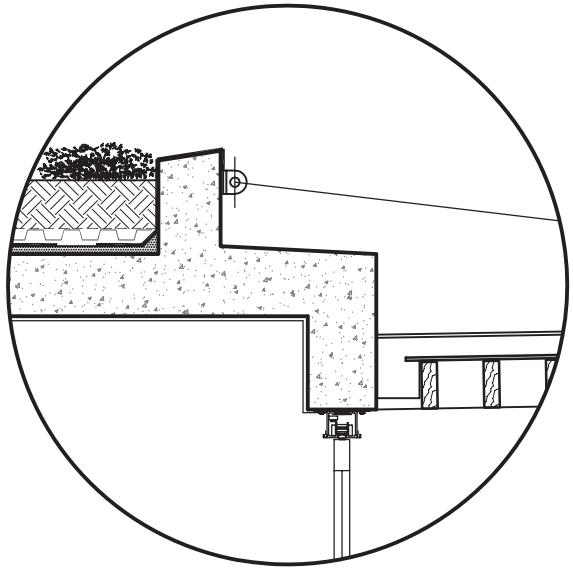
typical section a



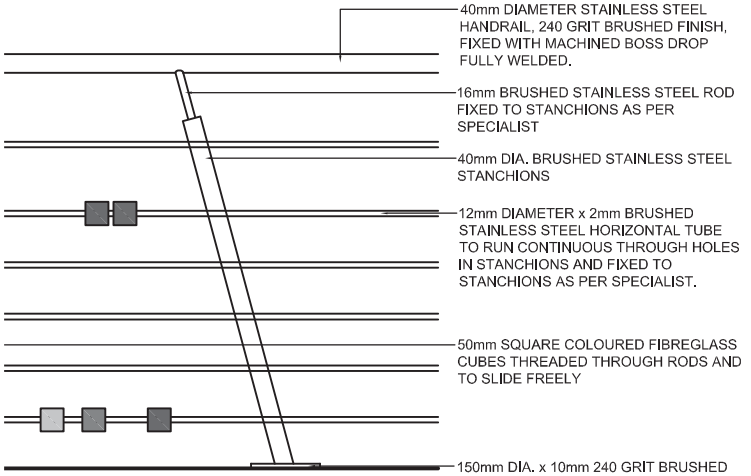
detail a



typical balustrade detail



detail b



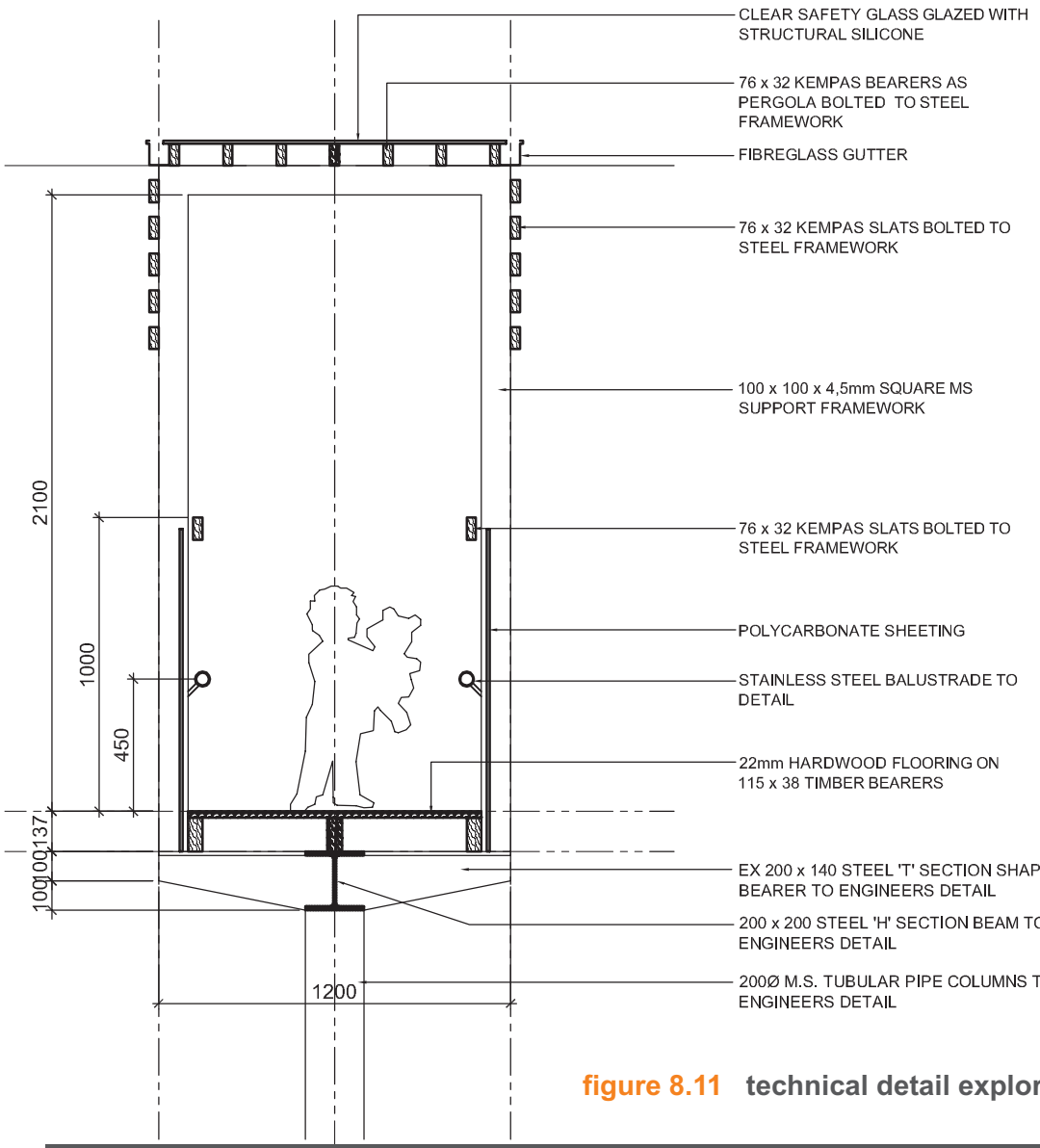
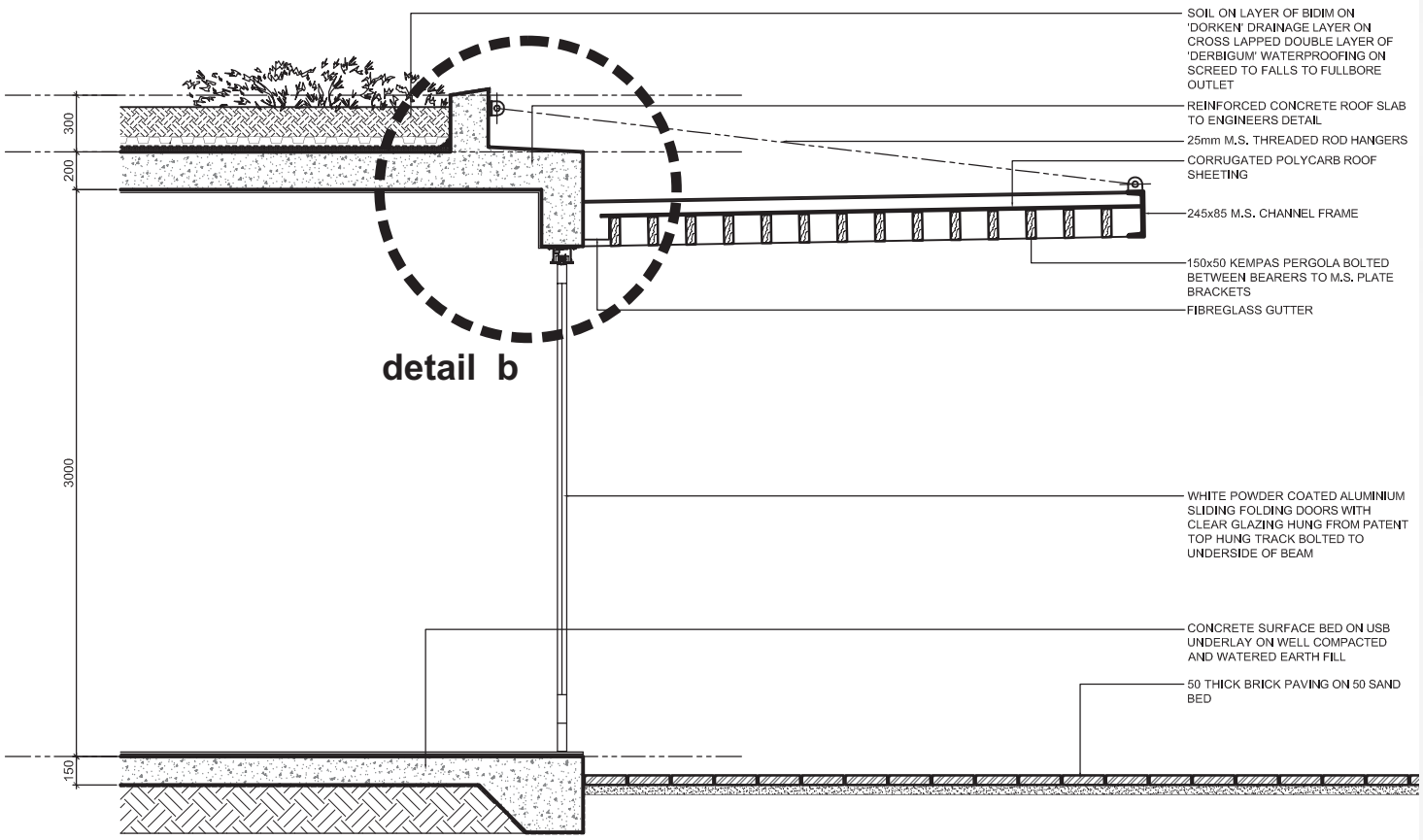
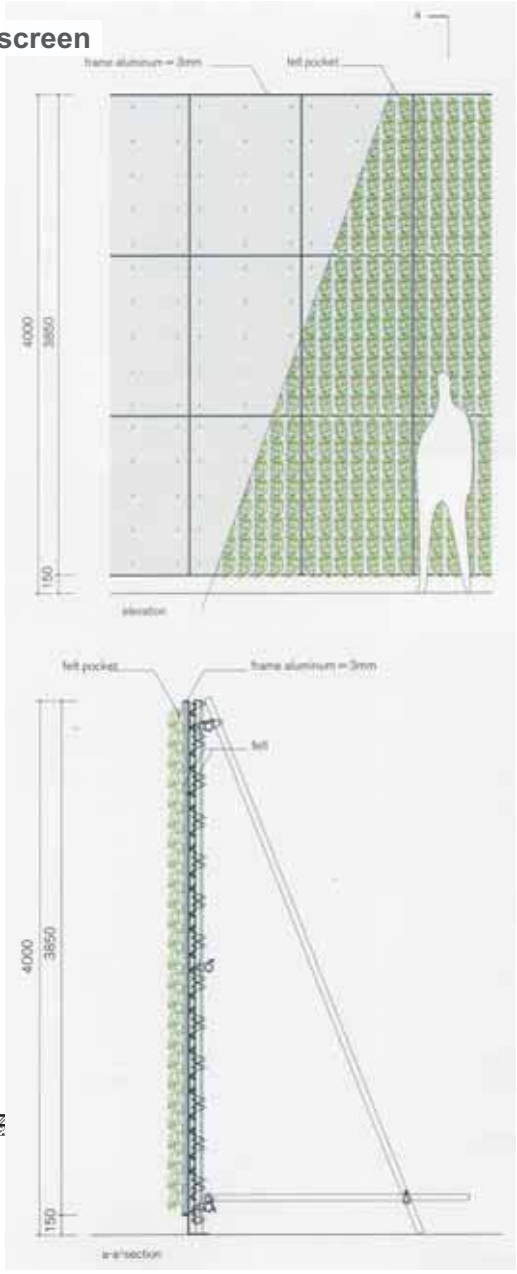


figure 8.11 technical detail exploration

section through circulation tube

figure 8.12 detailing of green screen





typical section b

09_1

conclusion

To conclude one has to critically assess if the original objectives, set out at the beginning of this design process, were achieved and if all the theories researched were applied.

I can say that a fair attempt was made and the result has aspects of all the design informants that were deduced as a result of an in depth investigation at the start of the year.

Of all the objectives the most important goal was to implement a childcare facility in a city edge condition to create an architectural typology that facilitates learning through play. It was a rather tenuous getting to the point reached but I still managed to have fun incorporating aspects of play through-out the proposal. The final product is fun and interactive and almost seems like a green oasis in a harsh environment. It is somewhere I would have liked to have started my schooling career.

The pre-school complex also acts as a transitional element from the dense urban fabric of the city to that of an informal environment as reflected by the zoo. It brings a quality to an area that would have otherwise been neglected

09_2

final presentation

architectural premise_

investigation of a childcare facility in a city edge condition to create an architectural typology that facilitates learning through play

choice of site

_ assists in re-connecting the north to the city's urban fabric

_ added educational benefits and opportunities of location opposite the zoo

_ easy access to transport

_ part of the framework to create connectivity through activity

programme

_ pre-school
_ after-school care
_ playground
_ adult recreation

client

_ proposal of collaboration between department of education and community

theoretical approaches

_ learning through play by expanding the field of play

_ the integration of landscape and architecture: inside and outside and the transition between these entities

_ reclaiming lost space and involving community to create defensible space

project intention

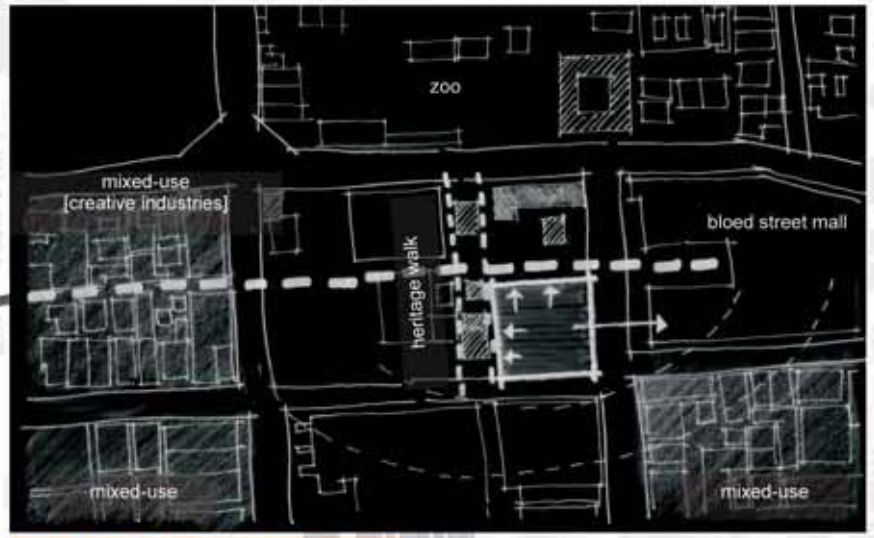
_ to create a new pre-school typology that stimulates its users _ to act as a catalyst for community development

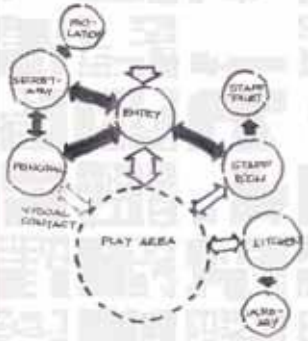
connectivity . . .

... to context

_ pedestrian walkway
[north / south link from marabastad to termination at bloed street mall]
_ heritage route
[link from boom street to bloed street uniting buildings of historical value]

_ creative industries
_ heritage buildings
_ zoo
_ residential
_ bloed street mall
_ informal trade



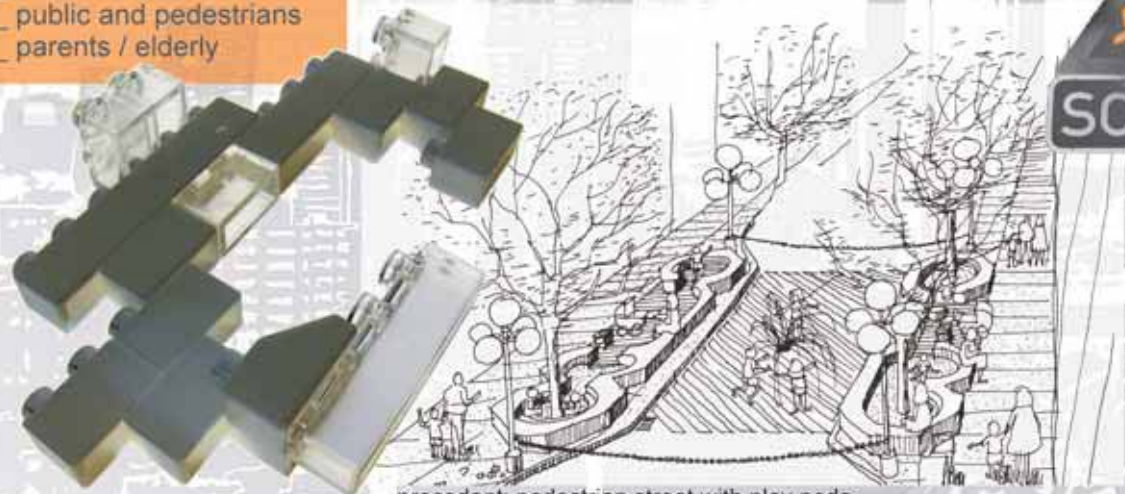


...to people

_ youth
_ community involvement
_ public and pedestrians
_ parents / elderly

...building to site

_ landscape & architecture



precedent: pedestrian street with play node

SCHOOL

...within the building

_ different programmes
_ various age groups
[from 3 to 6/7 years]

accommodation_

_ classrooms
_ indoor/outdoor play
_ library
_ fantasy room
_ music room
_ movement room
_ office
_ staff room
_ sick bay
_ ablutions

learning through play . . .

...importance
_ physical growth and activity development
_ personal and social development
_ intellectual and perceptual development

...spaces
creating appealing, interesting and unusual spaces in accordance with the creative nature of the programmes

...activities
artistic and practical work, imaginative play and fairy tales, movement and music, circle games and outdoor play

precedent: neighbourhood playground

building blocks
_ connectivity
_ modular
_ versatility / flexibility in usage
_ inter-active
_ combination of different components [ideas/functions] to create a single functioning entity

precedent:
playground attached to school

... indoor / outdoor
_ creating a secure outdoor play area that ties in with the building
_ integrating the indoor with the outdoor with a successful threshold

precedent studies

city framework

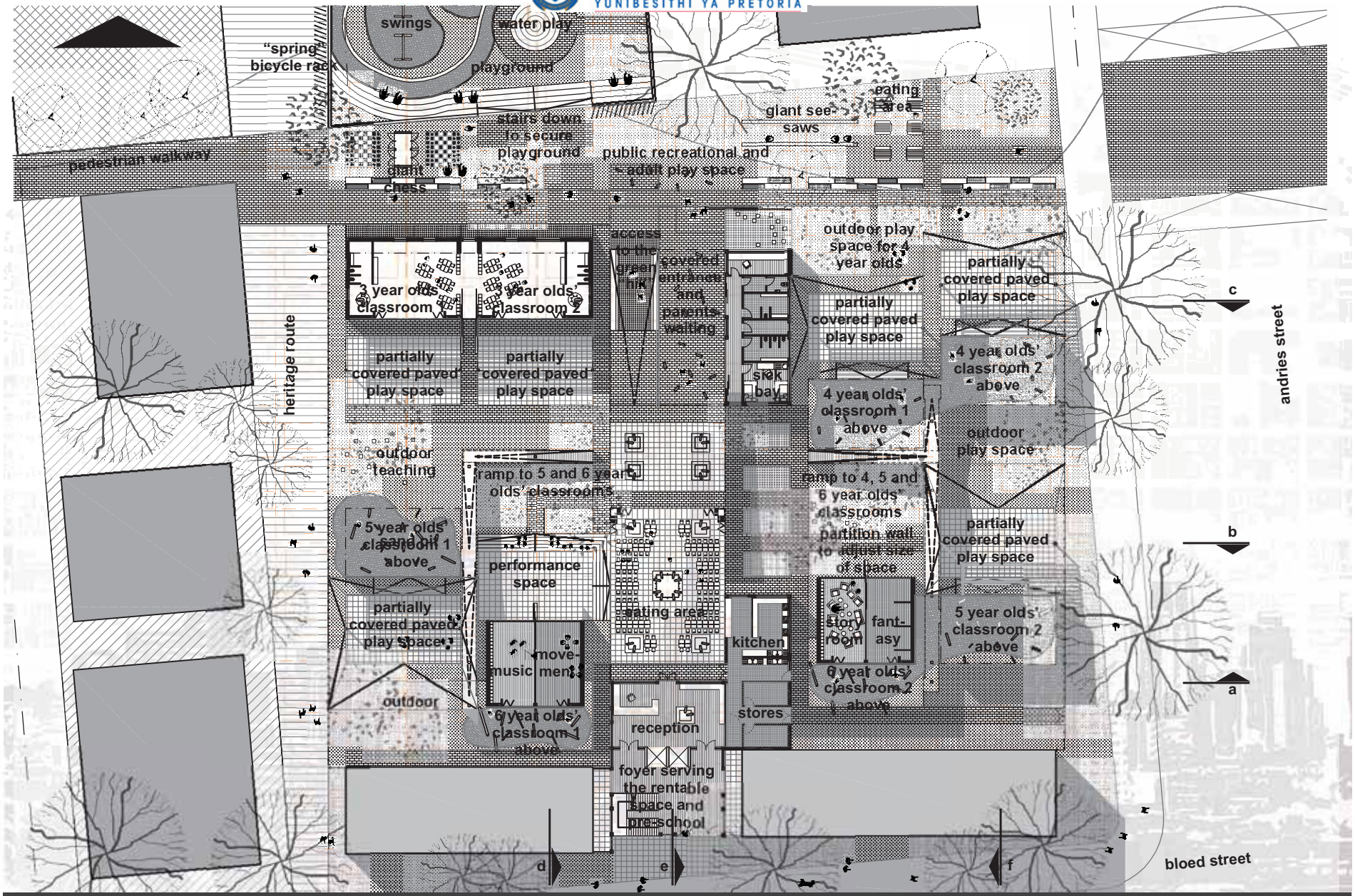
outdoor activities

interactive

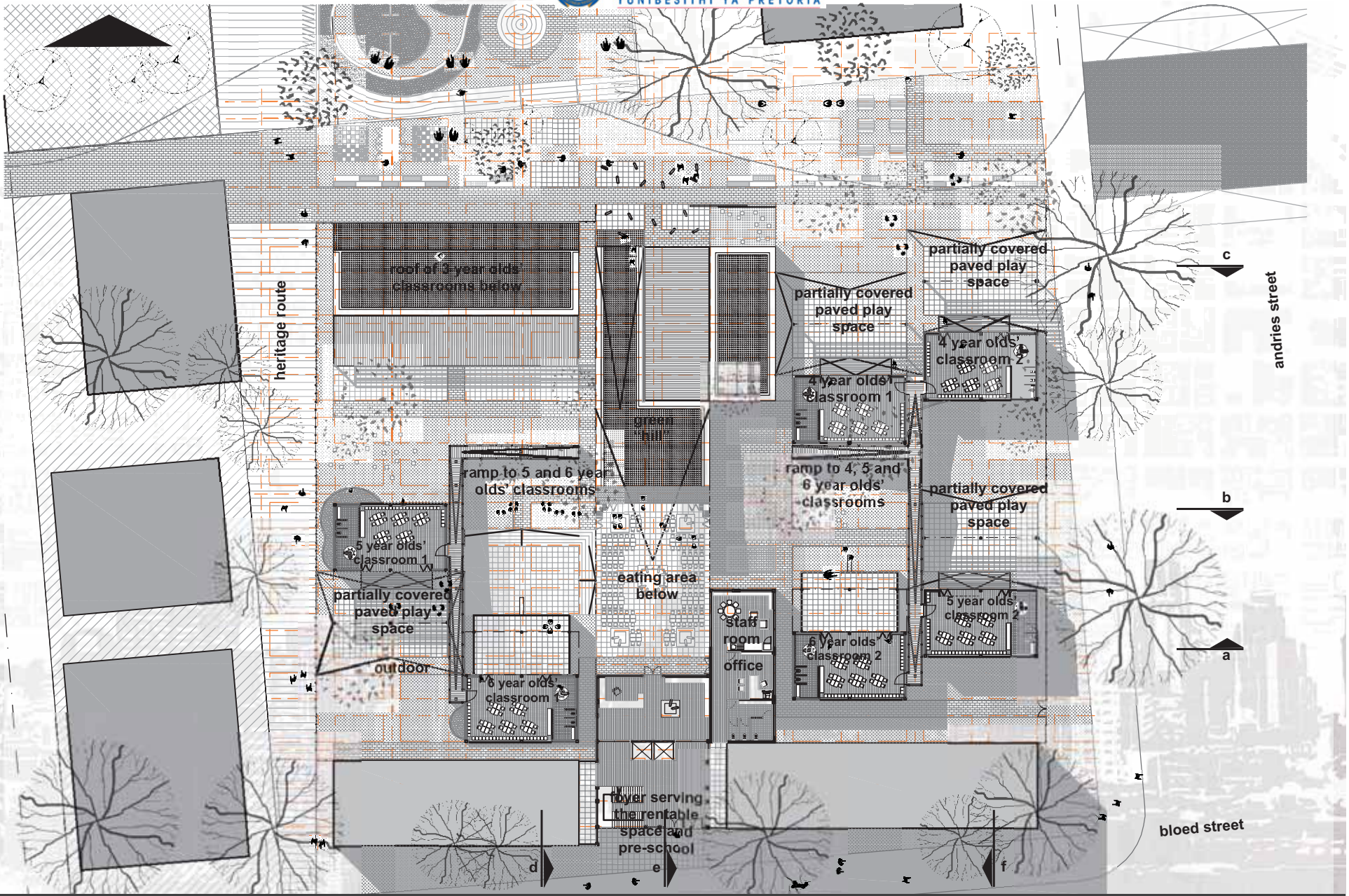
indoor/outdoor

threshold

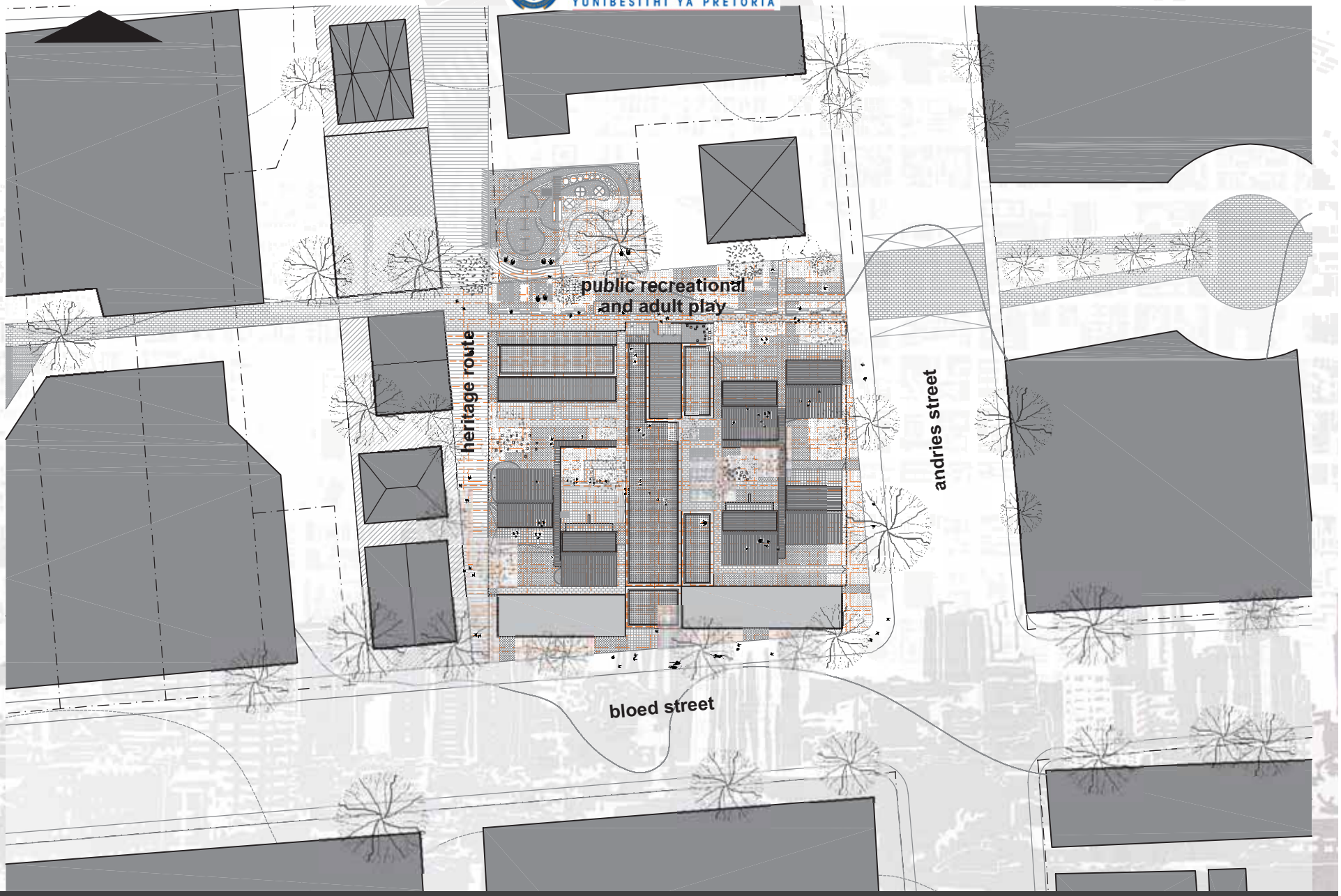
indoor/outdoor



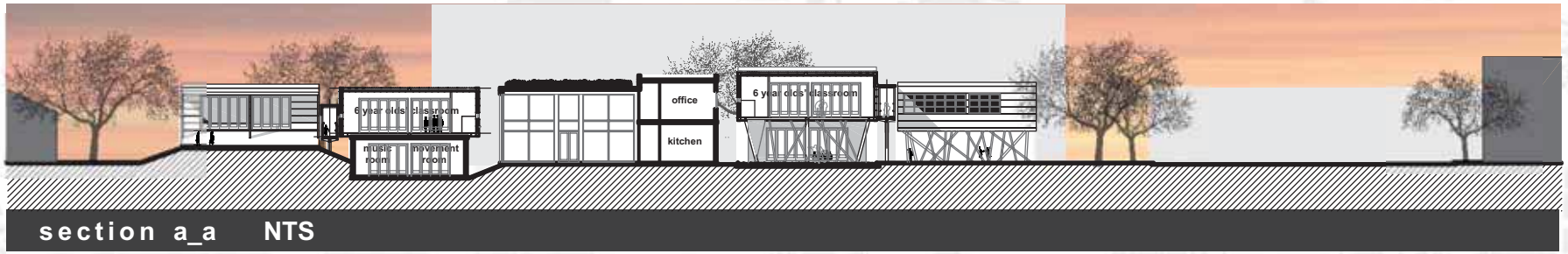
ground floor plan NTS



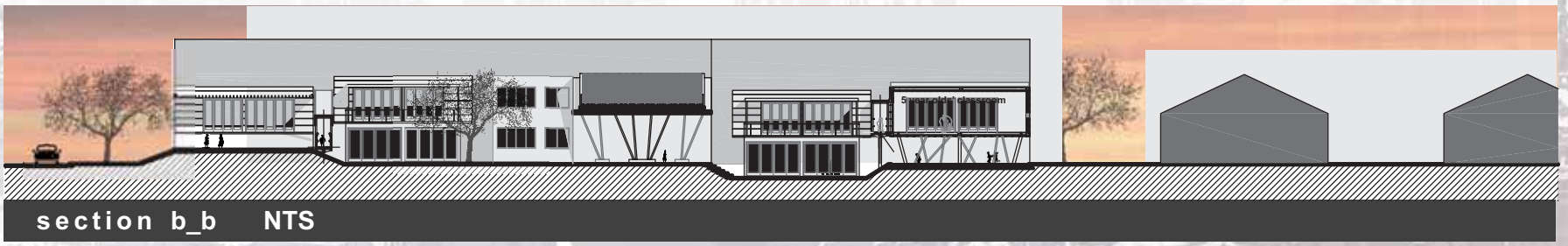
first floor plan NTS



context and roof plan NTS

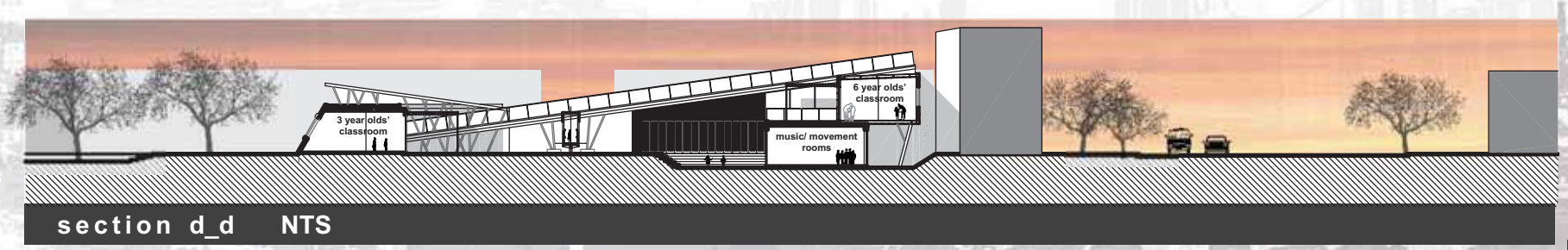


section a_a NTS

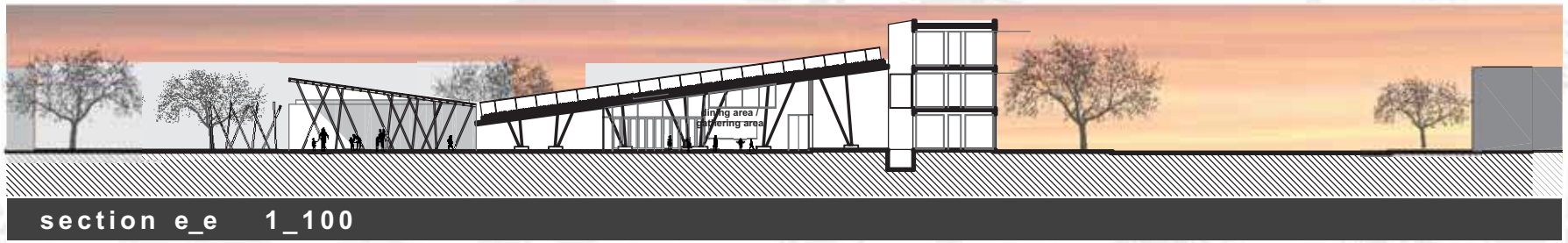


section b_b NTS

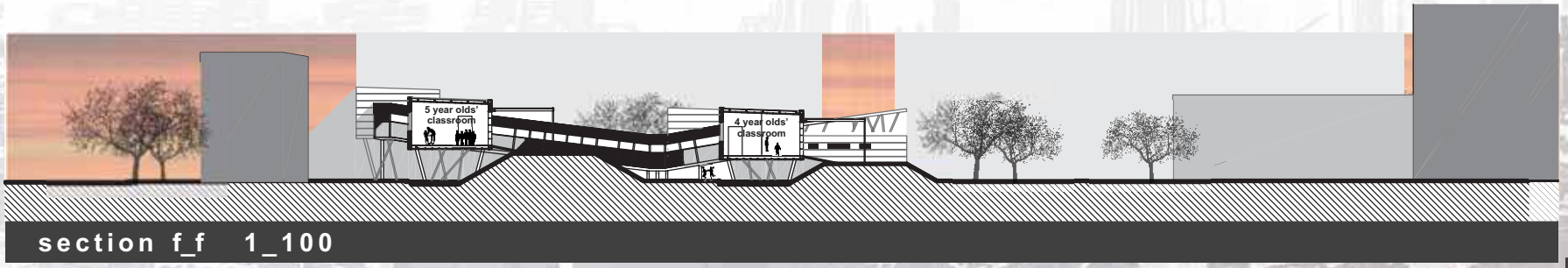
section c_c NTS



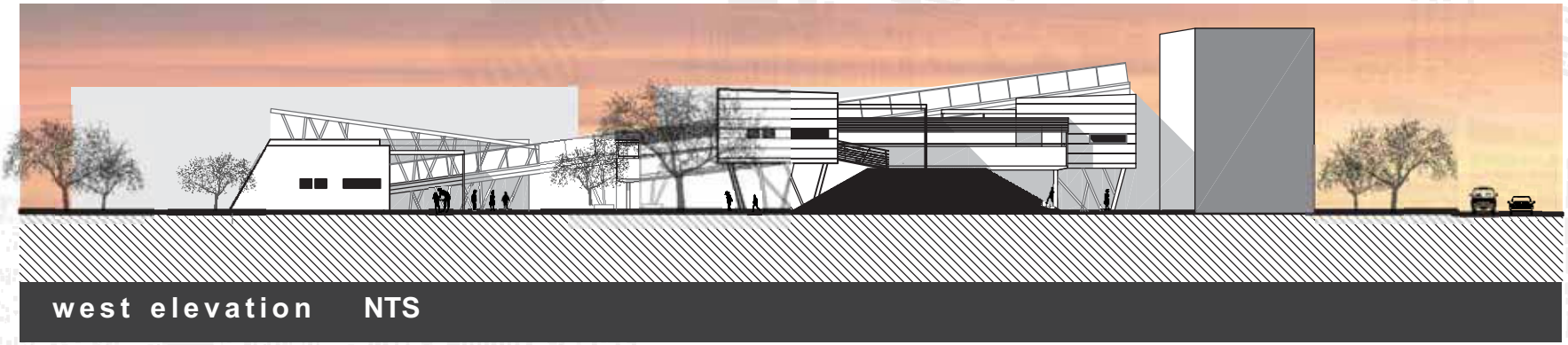
section d_d NTS



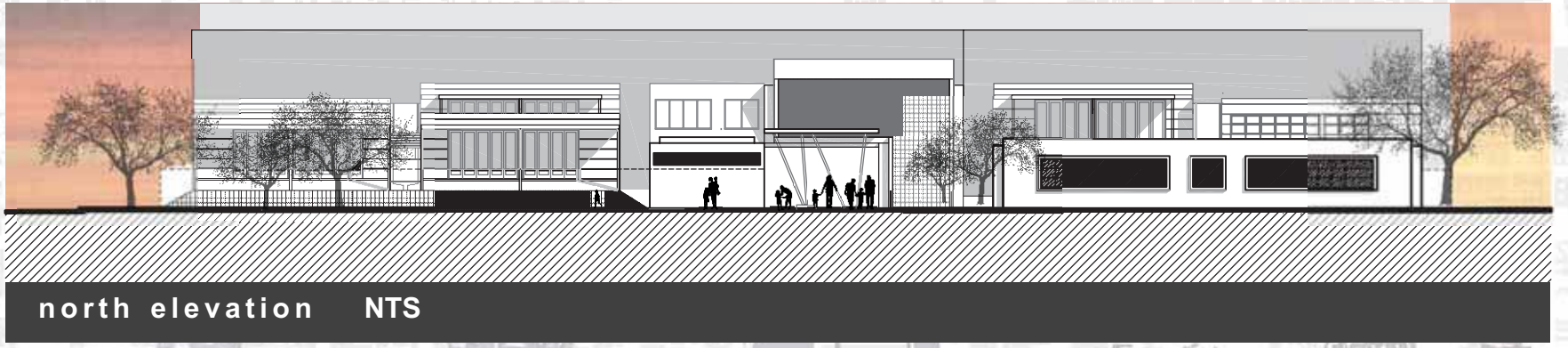
section e_e 1_100



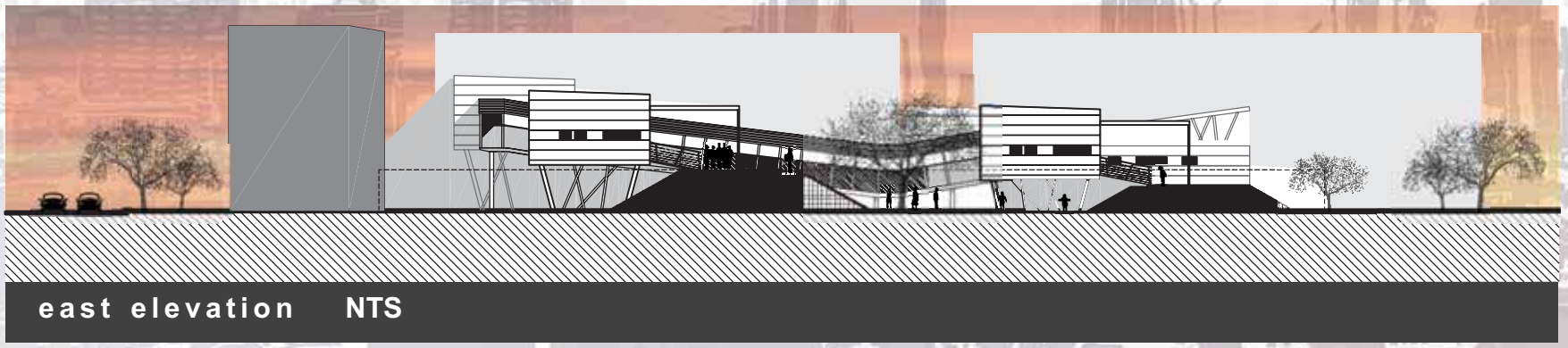
section f_f 1_100



west elevation NTS



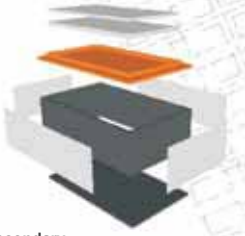
north elevation NTS



east elevation NTS

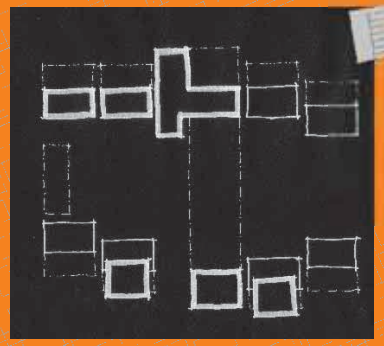
stereotomic and tectonic

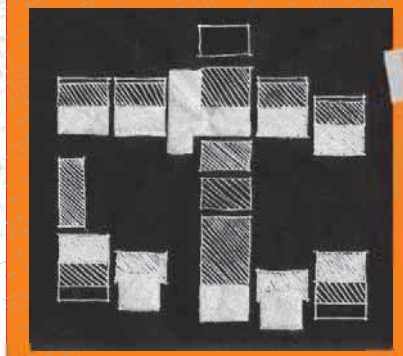
Primary
- load bearing brick cavity walls consisting of a 50mm cavity between the two brickwork skins of 110mm each
- 150mm concrete surface bed

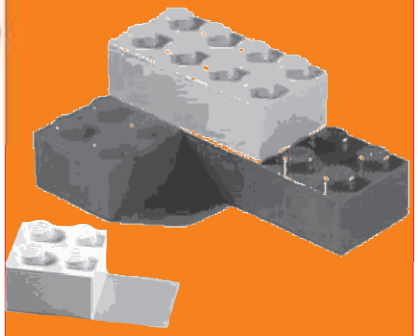


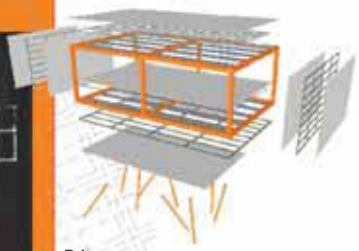
Secondary
- 200mm reinforced concrete roof slab with integrated 300mm downstand beam and 300mm upstand beam recessed 500mm from the perimeter

Tertiary
- plaster and paint
- planting on the roof





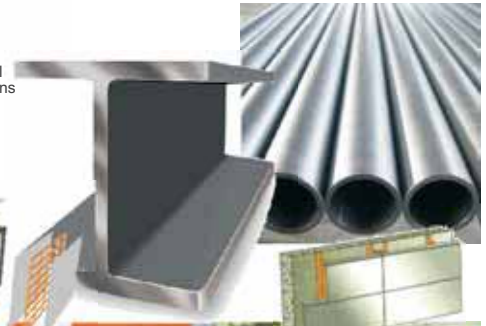


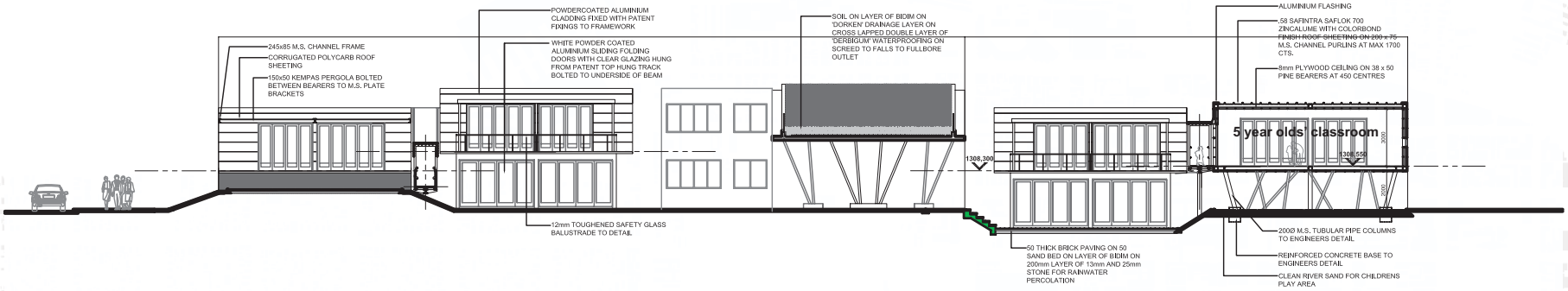


Primary
- 100mm to 150mm mild steel diameter tubular pipe columns
- 200mm by 200mm square hollow section beams

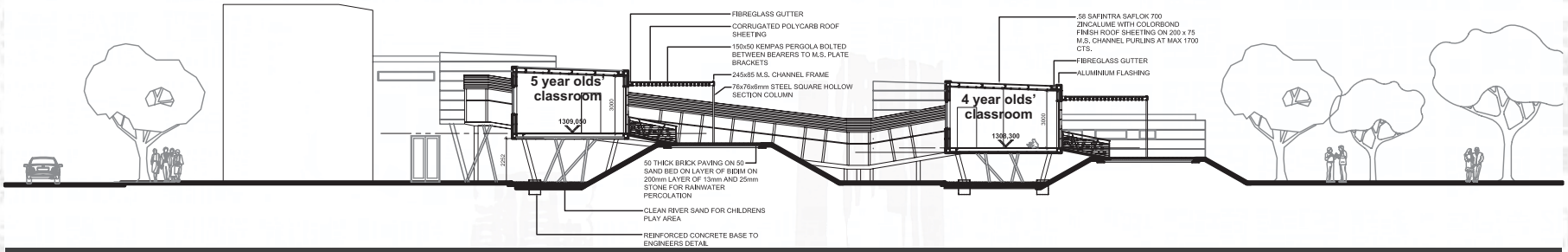
Secondary
- 50mm diameter tubular pipe bracing
- sub-structures onto which the cladding and roof sheeting is fixed

Tertiary
- powder coated aluminum cladding [external]
- marine plywood cladding [internal]
- glasswool insulation between the cladding
- corrugated roof sheeting

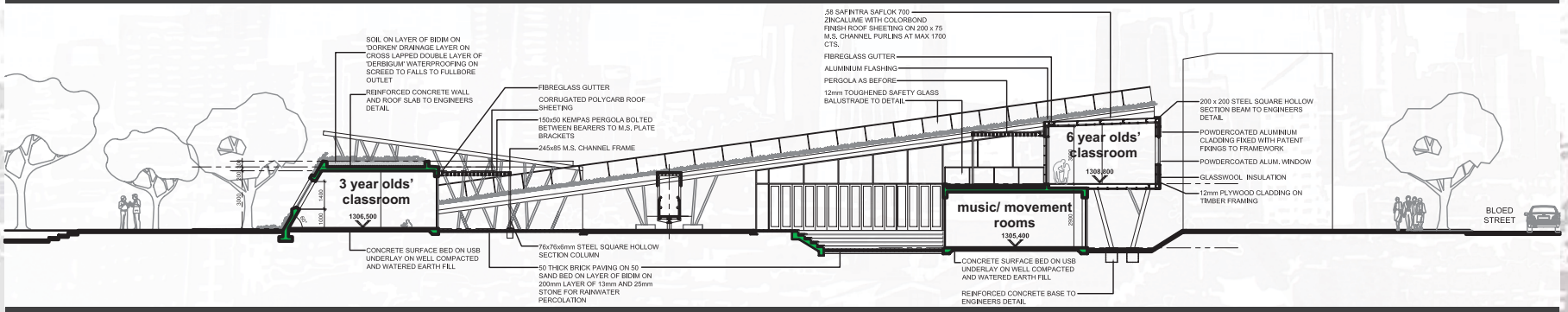




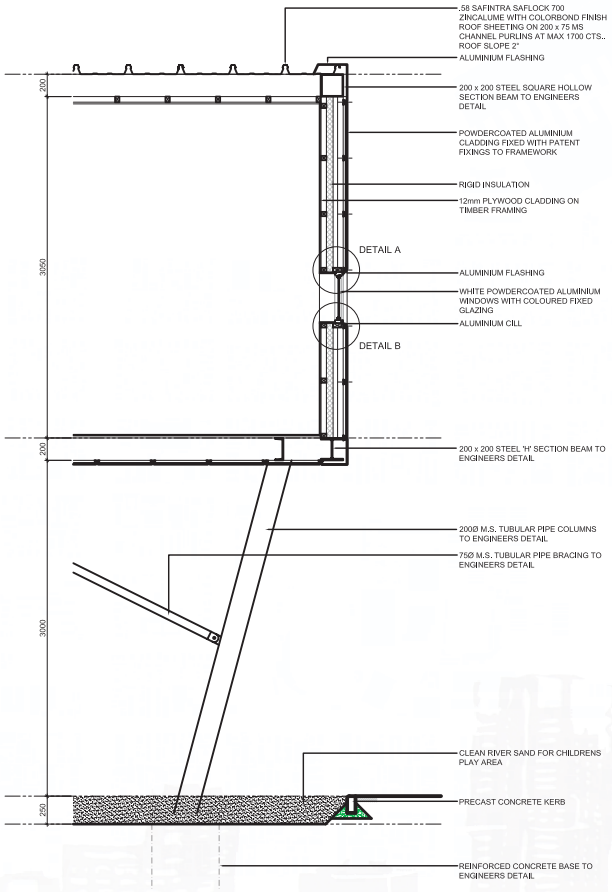
section b_b NTS



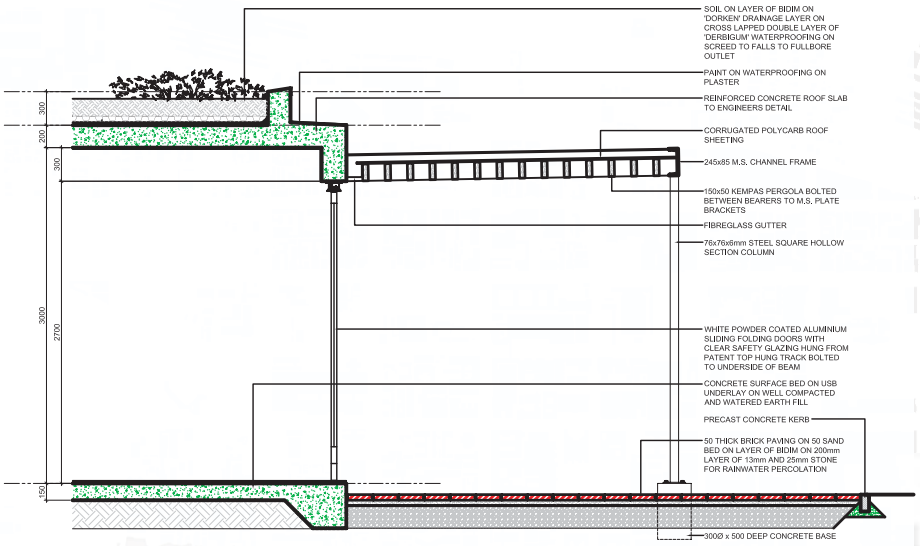
section f_f NTS



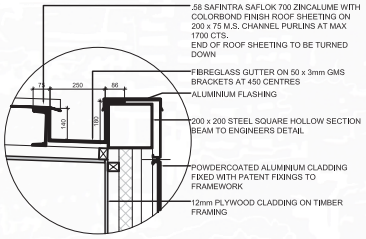
section d_d NTS



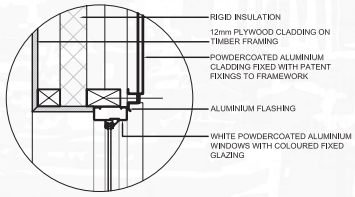
section a_a NTS



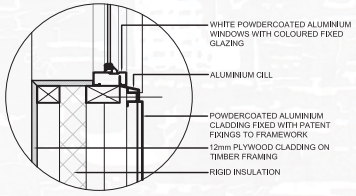
section b_b NTS



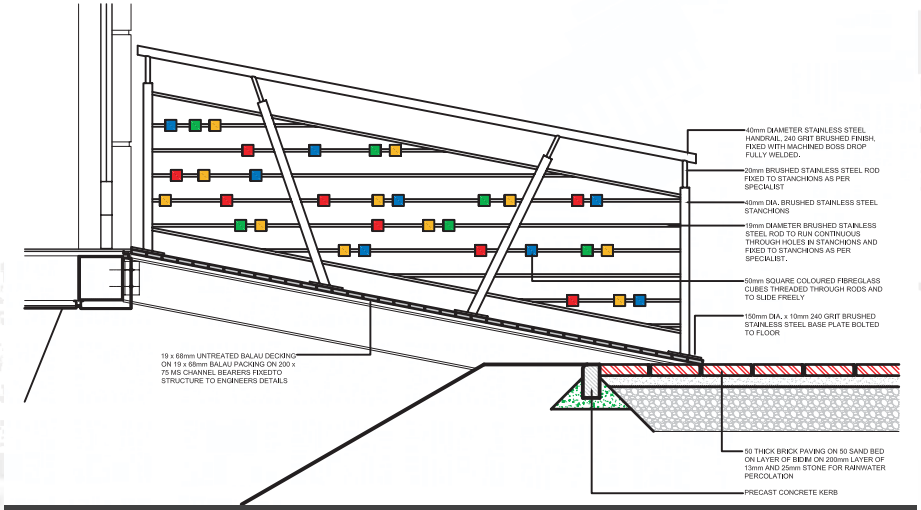
gutter detail NTS



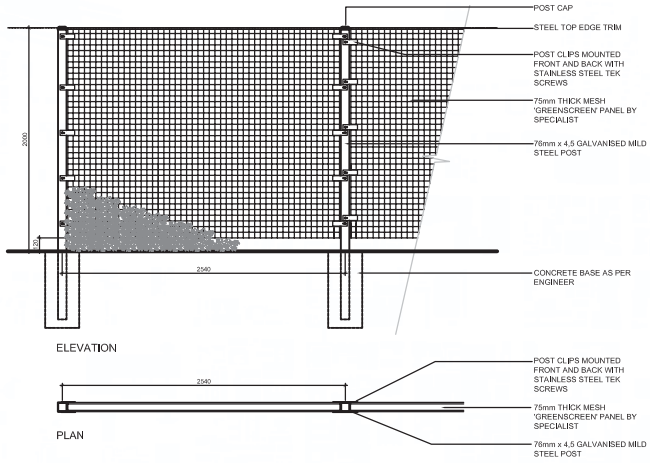
detail a NTS



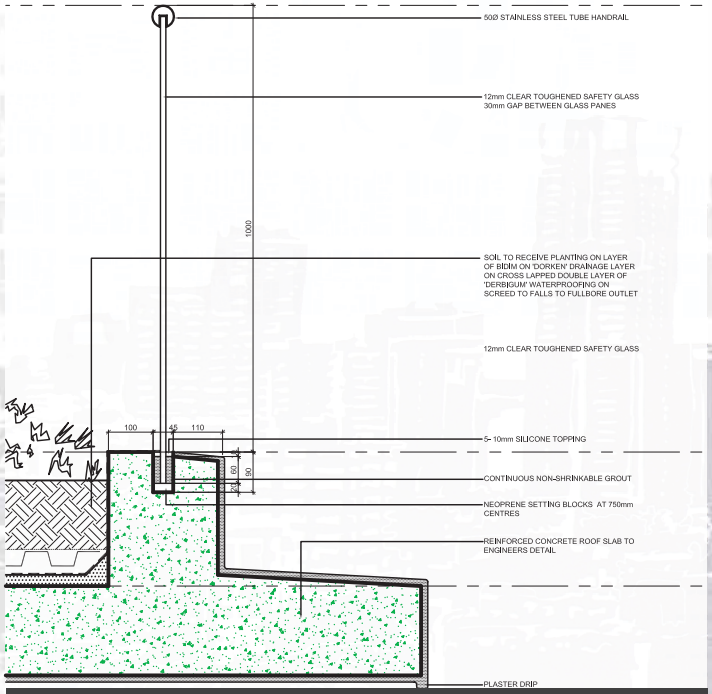
detail b NTS



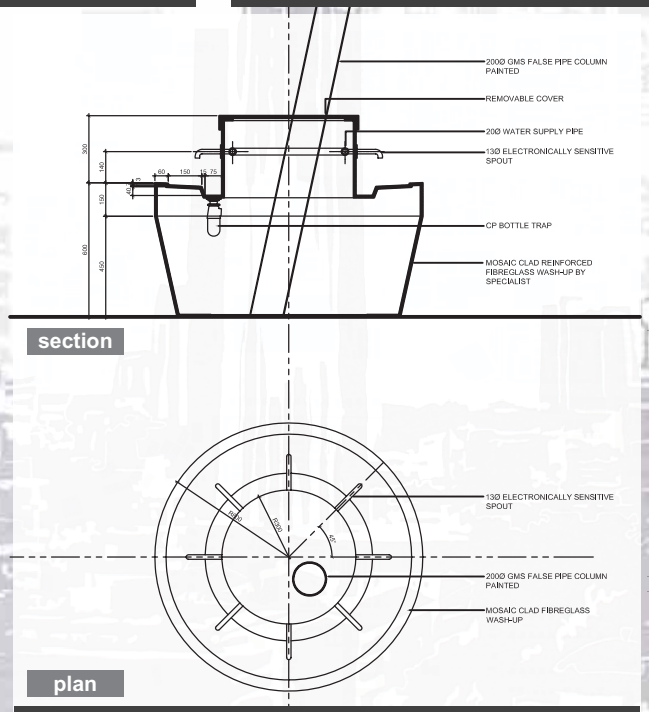
typical bridge and balustrade detail NTS



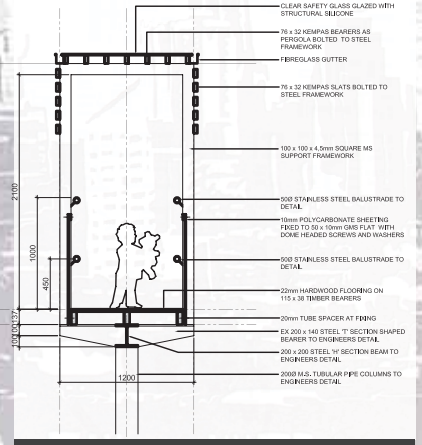
green-screen fence detail NTS



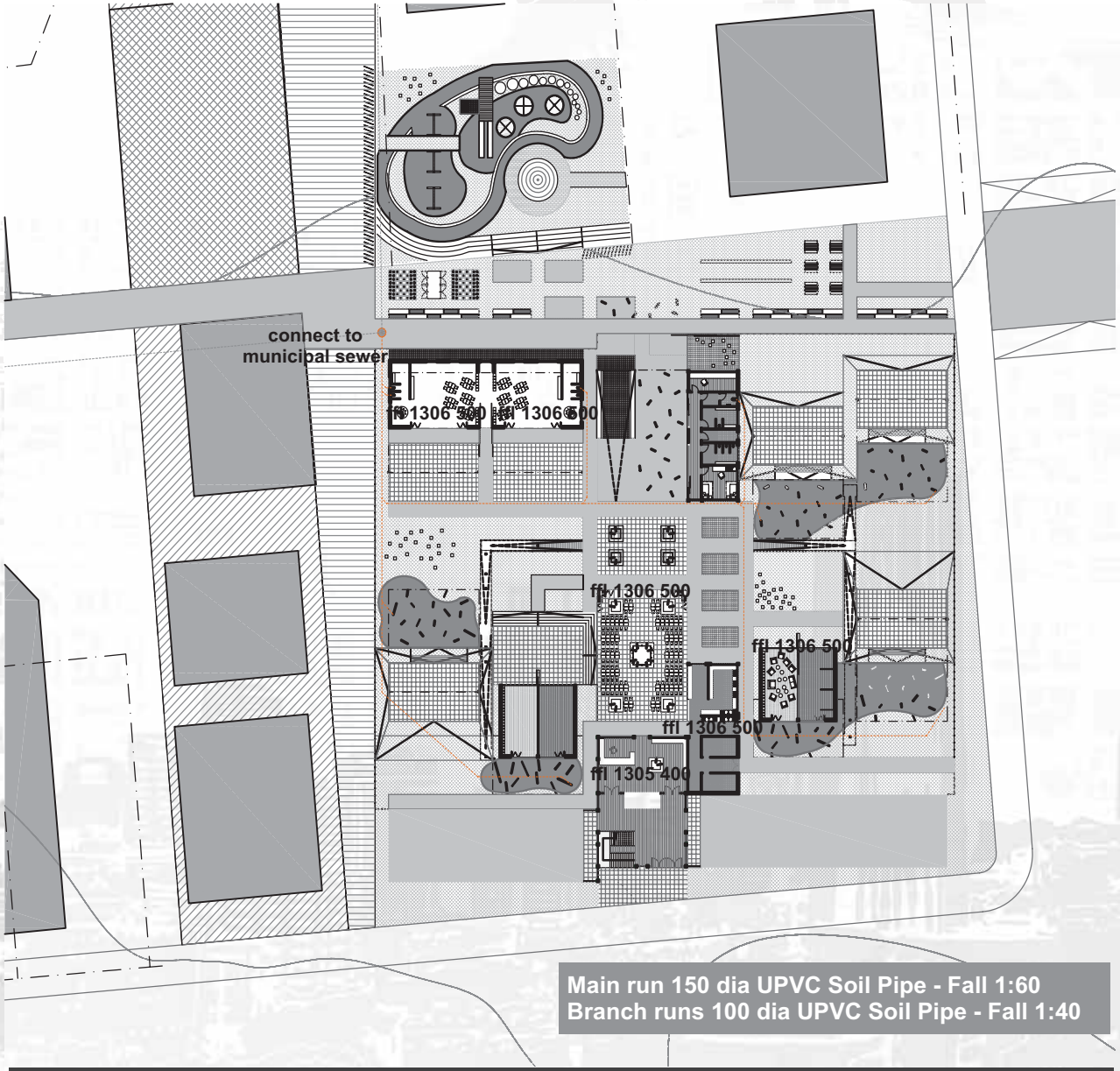
glass balustrade detail NTS



wash-up detail NTS

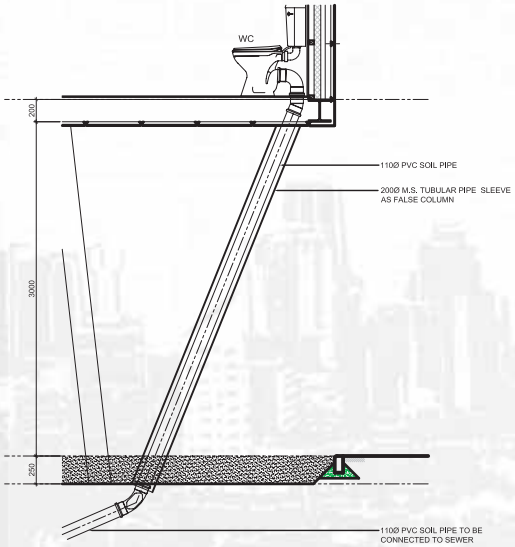


ramp detail NTS



Main run 150 dia UPVC Soil Pipe - Fall 1:60
Branch runs 100 dia UPVC Soil Pipe - Fall 1:40

sewage layout on ground floor plan NTS



sewer detail NTS

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UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

10 appendices

population statistics...

Gauteng is divided into various wards where Pretoria's CBD falls within wards 3, 58 and 60.

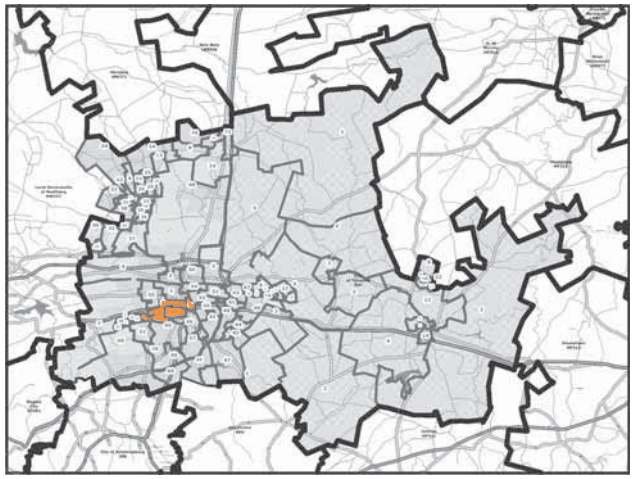

figure 10.1 ward map

ward 3

GENDER BY AGE

Persons	1996	2001	% change
Males - 0 to 4	1091	1122	2.84
Males - 5 to 14	1786	2166	21.28
Males - 15 to 34	11804	12456	5.52
Males - 35 to 64	5803	6432	10.84
Males - Over 65	510	471	-7.65
Females - 0 to 4	1037	1056	1.83
Females - 5 to 14	1736	2208	27.19
Females - 15 to 34	6132	8025	30.87
Females - 35 to 64	3726	4512	21.10
Females - Over 65	732	561	-23.36
Males - Total	20994	22646	7.87
Females - Total	13363	16359	22.42

AGE

Persons	1996	2001	% change
0 to 4	2112	2178	3.13
5 to 14	3551	4371	23.09
15 to 34	18134	20481	12.94
35 to 64	9495	10944	15.26
Over 65	1296	1032	-20.37

MODE OF TRAVEL TO WORK OR SCHOOL

Persons	1996	2001	% change
Bicycle	-	285	-
Bus	-	5001	-
Car driver	-	5601	-
Car passenger	-	4017	-
Minibus/Taxi	-	1875	-
Motorcycle	-	159	-
Train	-	762	-
NA	-	13137	-
Foot	-	7953	-
Other	-	216	-

GENDER BY AGE

Persons	1996	2001	% change
Males - 0 to 4	521	642	23.22
Males - 5 to 14	758	1089	43.67
Males - 15 to 34	5427	7461	37.48
Males - 35 to 64	2334	2862	22.62
Males - Over 65	717	606	-15.48
Females - 0 to 4	566	660	16.61
Females - 5 to 14	733	1062	44.88
Females - 15 to 34	6211	8085	30.17
Females - 35 to 64	2933	3228	10.06
Females - Over 65	1944	1455	-25.15
Males - Total	9757	12662	29.77
Females - Total	12387	14490	16.98

AGE

Persons	1996	2001	% change
0 to 4	1094	1302	19.01
5 to 14	1508	2154	42.84
15 to 34	11627	15546	33.71
35 to 64	5264	6093	15.75
Over 65	2688	2061	-23.33

MODE OF TRAVEL TO WORK OR SCHOOL

Persons	1996	2001	% change
Bicycle	-	222	-
Bus	-	3663	-
Car driver	-	4947	-
Car passenger	-	2289	-
Minibus/Taxi	-	1377	-
Motorcycle	-	132	-
Train	-	387	-
NA	-	7368	-
Foot	-	6648	-
Other	-	120	-

GENDER BY AGE

Persons	1996	2001	% change
Males - 0 to 4	455	441	-3.08
Males - 5 to 14	641	819	27.77
Males - 15 to 34	4029	6690	66.05
Males - 35 to 64	1838	1752	-4.68
Males - Over 65	267	174	-34.83
Females - 0 to 4	466	465	-0.21
Females - 5 to 14	646	813	25.85
Females - 15 to 34	4120	7272	76.50
Females - 35 to 64	1797	1698	-5.51
Females - Over 65	687	426	-37.99
Males - Total	7230	9875	36.58
Females - Total	7716	10670	38.28

AGE

Persons	1996	2001	% change
0 to 4	927	906	-2.27
5 to 14	1303	1629	25.02
15 to 34	8175	13959	70.75
35 to 64	3647	3450	-5.40
Over 65	1004	600	-40.24

MODE OF TRAVEL TO WORK OR SCHOOL

Persons	1996	2001	% change
Bicycle	-	102	-
Bus	-	2781	-
Car driver	-	1446	-
Car passenger	-	819	-
Minibus/Taxi	-	1440	-
Motorcycle	-	45	-
Train	-	819	-
NA	-	5298	-
Foot	-	7701	-
Other	-	93	-

The following excerpts from the Early Childhood Development [ECD] Strategy were chosen for being most applicable to the pre-school proposal.

Introduction and Background

The early years of a child's growth and development are crucial for health, well being and success in later life. Government policy recognises this, and also recognises that the socioeconomic context of many South African children militates against their adequate development in childhood. A concerted effort by government is needed to combat the
adverse factors that arise from historical race-based discrimination and related poverty. Currently, however, different government structures, including provincial departments and municipalities, have dispersed responsibilities with regard to the well being and development of children in the province. A primary purpose of the Gauteng ECD Strategy is to ensure that these diverse services are experienced on the ground as an integrated package of comprehensive, efficiently delivered support. This package includes services related to education, social development, health and nutrition, sport, arts, recreation and culture, and community safety.

Situation Analysis

Access to such ECD services is still very uneven as a result of historical race-based discrimination. The Gauteng Department of Education has made considerable progress in phasing in Grade R at public schools in the province, but much still needs to be doneto redress the imbalances in ECD provision,.and to ensure that the 1.1 million children who are not enrolled in any programme prior to Grade R receive the support they need. The quality of this support is also a serious concern, as ECD sites in informal urban areas score markedly lower on measures of infrastructure, quality of programme and training and experience of educators. Home-based ECD sites, which account for 42% of ECD enrolment, are also a concern in terms of quality of provision. As we work towards our target of subsidising 25% of children by 2010-11, we must take account of these quantitative and qualitative discrepancies in provision.

The Demographics of ECD Provision in Gauteng

In the implementation of this strategy it will be important to understand the demographic profile of children in Gauteng, and in particular the number and distribution of children that require targeted interventions in the form of subsidies, nutritional programmes and other interventions. However, it must be noted that different structures of government currently collect data for different purposes and in different formats. Also, data discrepancies arise as a result of the different definitions of ECD and ECD sites that are currently in use – for example, the distinction between a 'community-based' site and a 'privately funded' site, or the classification of sites that are largely privately funded as 'public' because they receive some support from public funds. Nevertheless, it is possible to provide an indicative picture of current ECD activities and the challenges in terms of attaining effective provision of ECD services in the future. Gauteng had 236,523 learners enrolled in ECD centres in 2000, which amounted to 24% of the child population aged 0 to 6 years. Most of these children are poor, and mothers and grandmothers are often the caregivers, with many households headed by children.

The largest proportion of learners in ECD (47%) is enrolled in community-based sites, although these sites make up only 32% of all sites. While the majority of ECD centres are home-based sites, only 42% of ECD learners attend these sites. Eleven percent of learners attend school-based ECD centres; most of the learners in school-based sites are enrolled in Grade R.

The National Policies and Programmes [NPA] Framework emphasises the following policy priorities:

_nutrition, child and maternal health
_water and sanitation
_early childhood education and basic education
_social welfare development [family environment, out-of-home-care and social security]
_leisure and cultural activities
_child protection measures
_general measures for implementing and sustaining commitment to the national programme of action.

The guiding principles outlined in the document are as follows:

▪Put children first. In all actions related to children, the best interests of the child shall be a primary consideration.

• Leave no child behind. Each girl and boy is born free and equal in dignity and rights: therefore, all forms of discrimination affecting children must end

•Listen to children and ensure their participation. Children and adolescents are resourceful citizens, capable of helping to build a better future for all. We must respect their right to express themselves and to participate in all matters affecting them, in accordance with their age and maturity.

The objectives outlined in the document are the following:

•Eradicate poverty: invest in children. We reaffirm our vow to break the cycle of poverty within a single generation, united in the conviction that investments in children and the realisation of their rights are among the most effective ways to eradicate poverty. Immediate action must be taken to eliminate the worst forms of child labour.

•Care for every child. Children must get the best possible start in life. Their survival, protection, growth and development in good health and with proper nutrition are the essential foundation of human development. We will make concerted efforts to fight infectious diseases, tackle major causes of malnutrition and nurture children in a safe environment that enables them to be physically healthy, mentally alert, emotionally secure, socially competent and able to learn.

•Educate every child. All girls and boys must have access to and complete primary education that is free, compulsory and of good quality as a cornerstone of an inclusive basic education. Gender disparities in primary and secondary education must be eliminated.

•Protect children from harm and exploitation. Children must be protected against any acts of violence, abuse, exploitation and discrimination, as well as forms of terrorism and hostage taking.

•Protect children from war. Children must be protected from the horrors of armed conflict. Children under foreign occupation must also be protected, in accordance with the provisions of international humanitarian law.

•Protect the earth for children. We must safeguard our natural environment, with its diversity of life, its beauty and its resources, all of which enhance the quality of life, for present and future generations. We will give every assistance to protect children and minimise the impact of natural disasters and environmental degradation on them.

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CONSOLIDATED TITLE DIAGRAM

S.G. No. A 901/78

SIDES Metres		ANGLES ~~OF DIRECTION~~	
AB	36,84	A	90·00·00
BC	69,27	B	90·00·00
CD	55,33	C	90·00·00
DE	37,58	D	90·15·00
EF	18,65	E	89·59·30
FA	31,61	F	179·45·30 / 269

Approved

for Surveyor General.

20-3-1978

NO.	FIGURE	DESCRIPTION	DIAGRAM S.G. NO.	TRANSFER NO.
1.	A.B.b.a.	PORTION 3 OF ERF NO. 852	A 479/13	1815/1913
2.	a.b.g.d.	REMAINDER OF ERF NO. 852		200/1878
3.	f.g.C.h.	REMAINDER OF PORTION 2 OF ERF NO. 852		2652/1889
4.	e.f.h.i.	PORTION 4 OF ERF NO. 852		1125/1895
5.	d.e.i.k.	PORTION 1 OF ERF NO. 852		2693/1888
6.	E.F.k.D.	PORTION 1 OF ERF NO. 876		295/1889

THIS DIAGRAM CONSISTS OF 2 SHEETS
SHEET NO: 1:

SCALE 1:1000

The figure A. B. C. D. E. F.

represents 3250 SQUARE METRES of land being
ERF NO. 3216 COMPRISING AS STATED ABOVE
PRETORIA TOWNSHIP. DISTRICT PRETORIA.

Province of Transvaal
~~Surveyed in~~ COMPILED IN FEBRUARY 1978.

by me H.C. Frank-Schultz.
H.C. FRANK-SCHULTZ. Land Surveyor.

CITY OF TSHWANE METROPOLITAN MUNICIPALITY
CITY PLANNING
2010-00-04
GEOMATICS

This diagram is annexed to	The original diagram is ~~are~~	General Plan S.G. No.A
No. T27679/1979.	~~No.~~ as stated above	File
d.d.		S.R. No.
l.f.o.		Comp. JR 5C-24/D2 TP 629
Registrar of Deeds	~~Transfer~~ ~~Grant~~	

CONSOLIDATED TITLE DIAGRAM

S.G. No. A 901/78

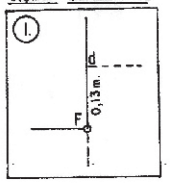
Approved

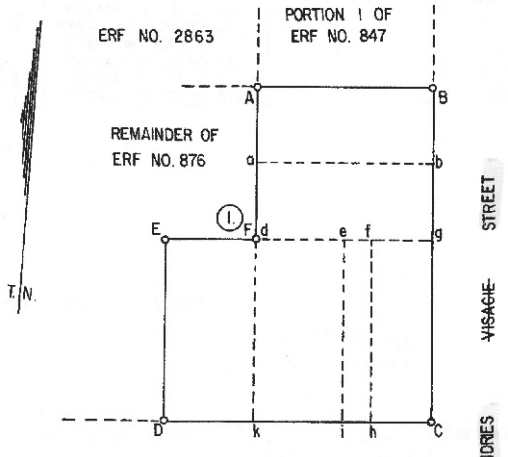
Surveyor-General.

20-3-1978

THIS DIAGRAM CONSISTS OF 2 SHEETS
SHEET NO. 2.

INSET. SCALE 1:10





CITY OF TSHWANE METROPOLITAN MUNICIPALITY
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2010-00-04
GEOMATICS

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by me H.C. Frank-Schultz.
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figure 10.2

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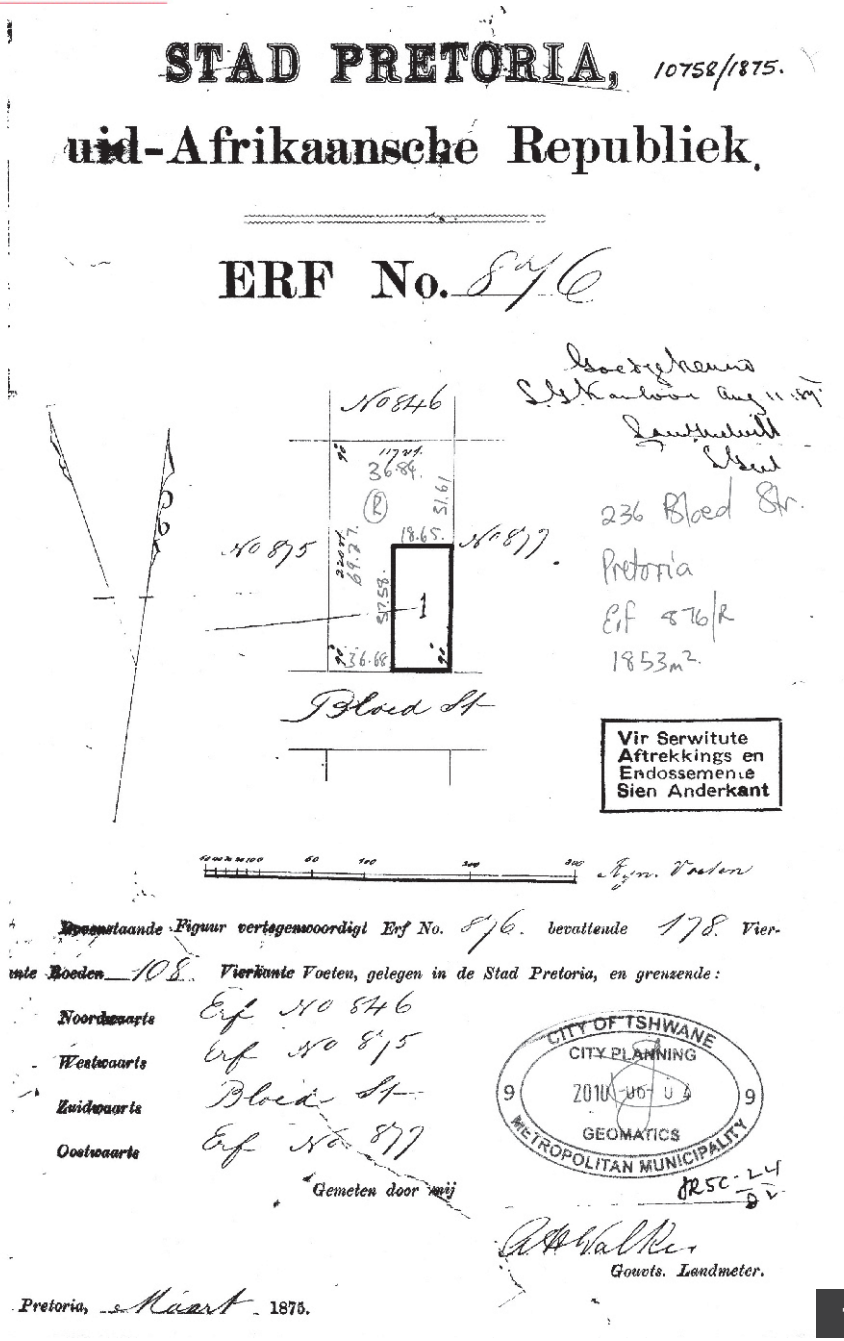

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