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STIMULUS

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I, Karabo Masia, student # 0304109J, am a student registered for the course Master of Architecture (Professional) in the year 2008. I hereby declare the following:

I am aware that plagiarism is wrong. I confirm that the work submitted for assessment for the above course is my own unaided work except where I have stated explicitly otherwise. I have followed the required conventions in referencing thoughts, ideas and visual material of others. For this purpose, I have referred to the Graduate school of Engineering and the Built Environment style guide. I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this work is not my own unaided work or that I have failed to acknowledge the source of ideas or words in my own work.

Acknowledgements

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Prologue

I was born in Mamelodi Township. I spent most of my childhood in the streets of Mamelodi and later Tembisa. I, therefore, have gained an understanding, knowledge and experience of living and growing in spaces that seemed potentially harmful to my physical and mental development. What I mean by this is that these were environments where crime, abuse, single-parent households, child-headed families flourished, causing post traumatic stress disorders. It was, however, these same environments that have shaped who I was then, who I am today and who I will be in the future.

When looking back at the days of my childhood, I am reminded of the lack of facilities and environment that could have possibly facilitated my mental and physical development, hence my poor performance at school and at times adverse behavior in my youth, which I believed was as a result of the stimulus of the environment that I was in or rather the lack thereof.

I am, therefore, passionate about the impact of the environment has on people, children in particular.

I would like to emphasize that this thesis is very personal to me. using my own life as a reference and benchmark, I will making references to my own personal experiences by means of thoughts, ideas and memories of events in a place and time, hence some parts will be written in first person/active voice.

This thesis has helped me to gain a better understanding of my past. The journey has been a healing process. The retrospection has helped me to understand the strength of the built environment and its potential to heal psychological ailments and experiences of the past.

"Heredity nothing. Environment everything." (Head 1995: 11)

This is a statement coined by scientists and philosophers based on the idea that humanity is influenced and affected by their immediate surroundings (or environments) and will adapt to it in order to survive. Genetics play second fiddle to environmental influence on a person. The environment in which one finds themselves, may ultimately determine who they become in life, irrespective of one's genetics.
Through this thesis I want to explore the impact of the natural and man-made environment on the physical and mental development of children. one may argue that the built environment has the same influence on children in their early stages of development as the natural environment, if not more.

This document is a tale of the exploration and adventure I went through in interogating this topic. It also gives a blow by blow account of the processes I went through in researching this topic and concludes by showing the application of these lessons through various media. I hope the readers of this document will join me on this journey and hopefully inspire them to go on a journey of their own to gain a better understanding of their past and perhaps chart a better path for the future.

Through this thesis, I envisage to create a Day Care Centre. Using architecture physical development of children. I am interested in affecting the users of my spaces by elements such as light, colour, shadows, sound, smell and taste and tangible material space.

as a tool, I aim to create space that will evoke emotion and promote mental and the playing on their senses with architecture. I will do this by experimenting with untangible such as texture to create emotional effects that relates a moment in time to the usage of





001
Faces of Kwa Thema
(Author: 2008)

Introduction



001
A Child clutching the column at an old Beer Hall, in Masimini, Kwa Thema.
(Author: 2008)

Research in child and environmental psychology indicates that the physical environment has a psychological effect on children in their early childhood - a phase where children build their own identity and understanding of the world. It is important for environments to facilitate this type of development. Environments that may inhibit such development in children are both physical and psychological. Some examples are child-headed households; single-mother households; crime and violence, mainly happening at schools; which may lead to post-traumatic stress disorder. This may result in adverse behaviour, social segregation, substance abuse and even suicide. Modernity has also brought with it an architecture that is impersonal and repetitive, at times lacking identity. People living within these environments have, however, adapted their spaces and created environments which they can identify with.

"Psychologists agree that we are products of both our inherited genetics and our environment, which involves our personal life experiences in our surroundings. Just as disharmonous environments can cause us physical and mental stress, our surroundings can also encourage relaxation, help us to understand our world and ourselves, promote healing and self expression, community care and participation." Even culture seems to be influenced and changed by the environment. This thesis is interested in the idea of architecture bringing about a holistic renewal and restoration of people, culture and context.

This thesis will begin by looking at the social approach. Part of the study will investigate the current social and cultural climate of the site. The research included interviews of children in foster homes, foster parents, teachers, counsellors and child psychologists about the influence of the environment on the development of children. The characteristics of spaces that can benefit children and individuals undergoing a process of healing will be studied in detail. The design proposal will act as a sensory perceptive day care centre, toy library and child wellness centre that will provide the environment to stimulate the mental, physical and perhaps spiritual development in the children of Kwa Thema.

Chapter 1 gives a brief historic view of the topic. It deals with, what one would call “sense theories”, which is the basis on which this thesis is done. It looks at human behaviour in relation to the environment. Cultural influences on how children and people, in general, perceive the world will also be discussed in this chapter.

Chapter 2 will investigate buildings that embrace an architecture of the senses. It is from these precedence studies that this thesis has derived most of the architectural principles and ideas that will be interogated and perhaps applied to the building. The main purpose of this chapter is to investigate existing structures which are successful in creating emotional effects on people. This thesis has critically looked at these buildings and extracted both positive and negative aspects of these buildings in terms of their social, cultural, economic and technological programs. The outcome of this exercise is to assist in formulating a set of principles and guidelines that will carry out the mandate of this thesis.

Chapter 3 explores children and how they interact with the environment by learning through play. It investigates issues of identity and the role of architecture in supporting the physical, social and mental development of children. The outcomes of this investigation aid in determining the needs of children, therefore outlining the architectural program and accomodation schedule of the building. This has been investigated through the usage of child milestone charts from the age of 0-13.

Chapter 4 deals with the chosen site. It looks at the site analytically through history and makes reference to the current conditions of the site. This process will outline the issues to be dealt with pertaining to the site and its context. It also deals with the design process, i.e. the program, brief, previous design proposals and gives a trail of how the design has reached the final stage of development. All the design principles will be outlined in this chapter and puts forward a proposal of how these principles are to be applied at an urban scale. A comprehensive set of the latest design drawings are presented in this chapter.

Proposal

Touch, smell, taste, hearing and sight; these are the senses through which we experience our immediate external environments. We depend upon our senses for survival. We are warned of any dangers and are able to avoid incidents due to them. As nature acts, we react. The Oxford dictionary describes “stimulus” as something that incites, to action or exertion or quicken action, feeling and thought. This thesis aims to answer the question pertaining to the role of architecture as an element that incites action or exerts or quickens action, feeling and thought. Furthermore, It aims to incite action, provoke feeling and inspire thought, investigating the role of architectural elements in the creation of stimuli. It seeks to find unity between architecture and the body.

The influence of architecture on the physical and mental development of children will be studied in this thesis. It will explore the sensory integration in “disadvantaged” children, who are at times exposed to harmful environments, thereby affecting their cognitive, social and emotional being (Joannou 2003: 5). Further research will be done concerning environments that affect children and how children perceive and use space. The stimulus provided by these environments will be integrated within the design. The day care centre and toy library aim to stimulate the mental and physical development in children.



002
Child playing at
a discarded and
unmantained Beer Hall
(Author: 2008)



003
Barbed Wire Fence surrounding a primary located near the site is unsightly and does not provide appropriate stimulus to children who are susceptible to their immediate surrounding. This is an environment that the children might ultimately identify themselves with. (Author: 2008)



004
Shocking images the thesis site, which is partly used as an illegal dumping site. Children sometimes play in the site next to the dumping which may lead to illnesses. Part of the aim of this thesis is to rehabilitate and stimulate the site. (Author: 2008)

Chapter 1

Brief Historical Overview



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Vision and knowledge

There seems to be a sub-conscious competition amongst the senses. In the past, sight was regarded as the most noble sense in the Western culture. Plato regarded vision as humanity's greatest gift and insisted that ethical universals must be accessible to the "mind's eye". Aristotle also considered sight as the most noble sense as it approximates the intellect most closely by virtue of the relative immateriality of its knowing. That is to say that knowledge is only truth when it is qualified by clear vision. "What you see is what you get..." (Pallasmaa 1996: 6)

The world of perception has made the eye its central focus. One would think that all these senses should be treated as a unit, since they are all significant and their significance cannot be taken forgranted. Technology has, however, separated these senses and given them an order of importance. Vision and hearing are now privileged sociable senses. The other three are considered archaic sensory remnants with a merely private function.(Pallasmaa 1996: 7)

The Western culture is a vision centered society and, therefore, the interpretation of truth and reality is generated by vision.

"Architecture is deeply engaged in the metaphysical questions of the self and the world, interiority, time and duration, life and death." (Pallasmaa 1996: 8)

Architecture is fundamentally confronted with the question of human existence in space and time. It is therefore, important to survey the role of vision in relation to other senses in our understanding and practice of the art of architecture.

In critique of this ocular centric culture, one may ask what role culture plays in the way we perceive the world.

Perception

In this thesis, architecture is seen as a play on human senses. The manner in which people perceive their surroundings is as a result of the stimulus applied to the body. It is this perception that affects the manner in which children interpret and react. Further investigation into how the environment impacts on the physical and mental development of children leads one to explore the relationship between architecture and the body. It is this interface with the body, which

005
Sketches of sensory organs
(Author: 2008)

suggests that given the correct stimuli, architecture may contribute as a healing element to the body, promoting the physical and mental development of an individual.

“Perception is that mental image, or percept of an object or phenomenon that is acquired. This is a process of segregation and unification by which environmental stimuli are organized into specific forms.” (Weber 1995: 52) Perception is the way in which we interpret stimulus. “Sight has been regarded as the noblest of all senses in the Western Culture.” (Pallasmaa 1996 : 6) After all, it is the only sense that is fast enough to keep pace with the increase of speed in the technological world. (Pallasmaa 1996: 13)

One may suggets that contemporary architecture can, at times, be insensitive to human needs. For example, the grand scale of buildings in the city may cause one to almost feel lost when occupying that space, however this insensitivity/inhumanity of contemporary architecture and cities may also be attributed to the consequences of an imbalance in our sensory system. The dominance of the eye has led to the suppression of all other senses, however, in a constantly changing technological world, how much trust can one put on one’s eyes, or even all of one’s senses for that matter. We live in a society where everything we sense, perceive and experience has the ability to be manipulated. (Pallasmaa : 8). Aesthetic and cultural practices are susceptible to changing experiences of space and time - this may be due to construction of spatial representations by human experience.

“Martin Heidegger, Michael Foucalt and Jacques Derrida argue that the thought and culture of modernity has not only continued the historical privileging of sight, but furthered its worst tendencies. They state that hegemony of vision has been reinforced in our time by a multitude of technological inventions and the endless multiplication and production of images (Pallasmaa 1996: 12).

“I exist in life on the condition that I see...” was a statement by Le Corbusier and it expresses his view on sight. (Pallasmaa 1996: 17)

Other modernist architect’s views are:

Mies v.d. Rohe - A frontal perception predominates, but his sense of structure, weight, detail, craft decisively enriches the visual paradigm. (Pallasmaa 1996: 18)

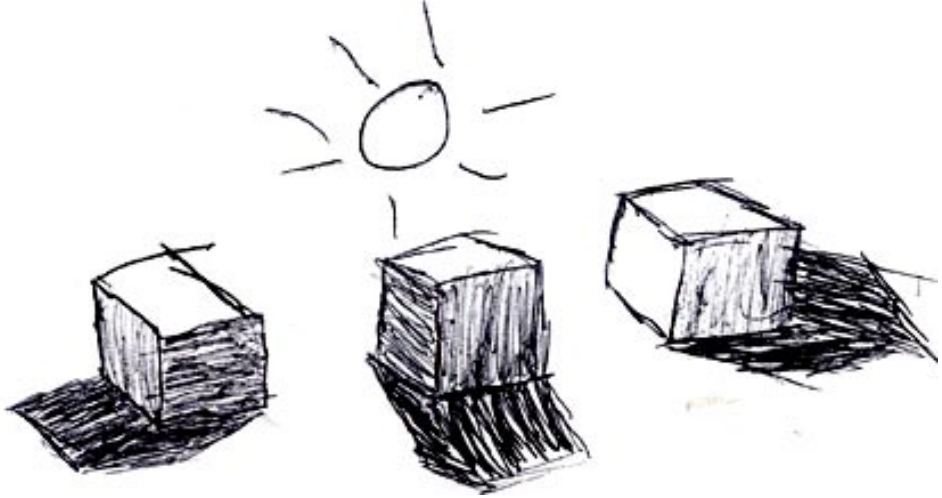
Alvar Aalto - In every case, one must achieve a simultaneous solution of opposites. (Pallasmaa 1996: 19)

A move away from vision orientated culture

Body language is a form of communication. “In numerous cultures, our private senses of smell, taste, and touch continue to have collective importance in behaviour and communication. The philosopher, Descartes stated that even though he regards vision as the most universal and noble sense, the sense of touch, when equated to vision is considered to be more certain and less vulnerable to error than vision. One may suggest that the sense of touch is rather a varifiable confirmation of the visual. The sense of touch contains an unavoidable nearness, intimacy and identification.

“...the task of art and architecture in general is to reconstruct the experience of an undifferentiated interior world, in which we are not mere spectators, but to which we inseparably belong.” (Pallasmaa 1996: 16)

The hierachy of the senses continue to change. In the 20th century, the eye found itself third behind hearing and touch. In his analysis, Walter J. Ong, studies the change from the



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oral culture to a written culture and its impact on human consciousness, memory, and understanding of space.

Motion

By revealing cultural dynamics of movement and sound, one can heighten an awareness of alternative experiences of space. It is thereby important to create or identify some form of visual communication that both the deaf and those who can hear will be able to understand. Dance is a medium in which the body is used as an instrument for communication. Dance is the medium through which a relationship between movement, sound, space, and time are explored. It is for this reason that a connection is proposed with the existing community hall in Kwa Thema. This thesis aims to transcend the fluidity of movement into a play and performance space for the children. (Bostik 2004: 17)

Play on light and shadow

Architecture is a play on light. Light must be reflected off an object for it to be observed. “Architecture is the masterly, correct and magnificent play of masses brought together in light. Our eyes are made to see forms in light; light and shadow reveal these forms.” (Le Corbusier, “Vers une architecture”). As much as architecture is imagined as a physical space of a certain size and dimension - a humanly constructed environment or object, the immaterial properties such as light, shadow, and time are just as important in the construction of space. Shadows cast outlined images or shapes onto a surface or object. A shadow is a play on time and it can reveal an object’s characteristics more distinctively than the object itself. (Lee 2004: 51)
This adds a more metaphysical and sensual dimension to the reading and meaning of that object. This effect of space on to the body is interrogated by this thesis. The possibilities of bringing about equilibrium and healing to the body through spatial effects could produce life prolonging results. Even though, this might not bring total healing to the body, it may however, add to improving the quality of life to those using the space on a regular basis.

Demonstration with boxes

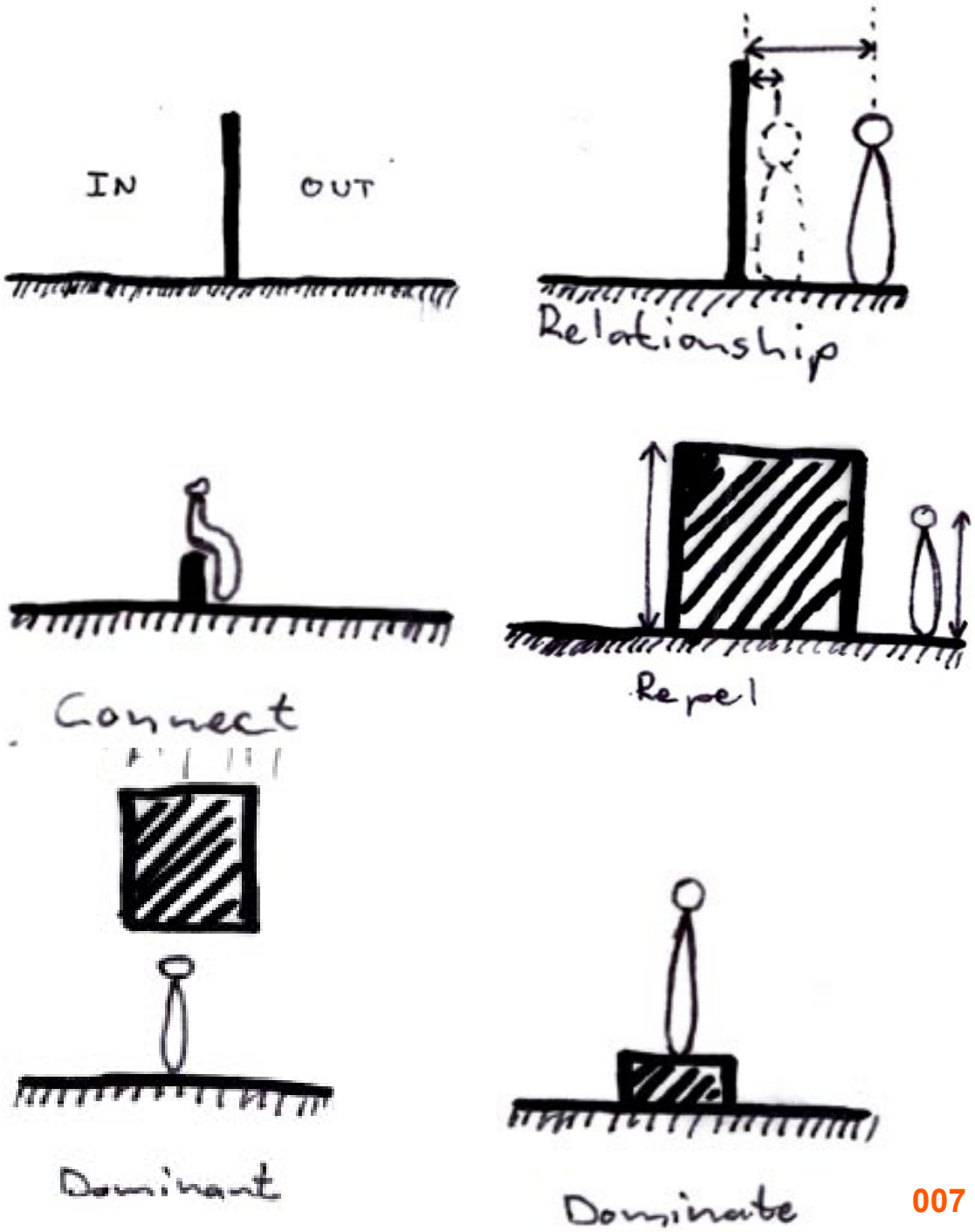
The light and shadow on the boxes not only qualify these objects in terms of size, but their true nature is revealed. i.e. texture, material, feel, etc. Space is constructed in this sense. The physical properties of the space are exposed, together and more importantly with the immaterial properties of that space.

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Cubes demonstrating architecture as a play on light and shadow. (Author: 2008)

Touch

The sense of touch is experienced through the body's largest organ, the skin. It contains a variety of nerve endings that detect touch, pressure, cold, heat or pain. The nerve endings convert sensations into electrical impulses that are sent to the brain. It is in the area named the dermis where the sense of touch takes place. Millions of microscopic receptors are located in this area. (www.overview-of-fives-senses.com)

The body is in constant communication with space. The space or environment provides the body with stimulus and the body reacts and responds in an appropriate way to that stimulus. One may use the paradoxical existence of a wall as an example. It is both a boundary that separates and connects, which makes it a compelling interface. It has the potential to enhance the relationship between the subjects and objects that it separates. It is through this relationship that this thesis will study the potential to recompose space by looking at its effects and the way it relates to the body. The re-composition of body and space is a means of heightening the awareness of self and the other. (Metz 2004: 58).

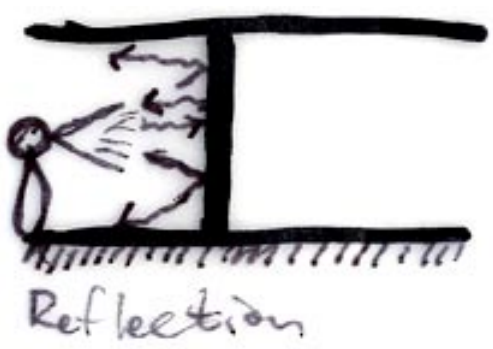


007
Relationship of the body to the wall (architecture) (Author: 2008)

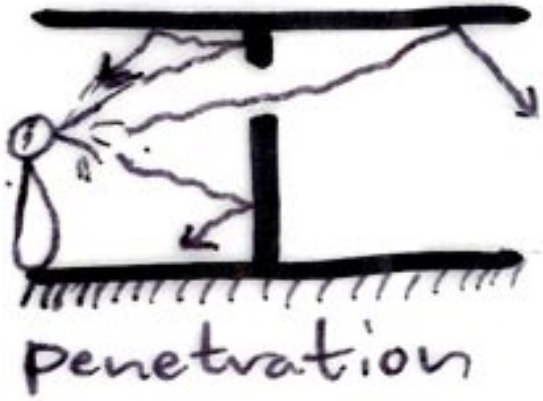
Hearing

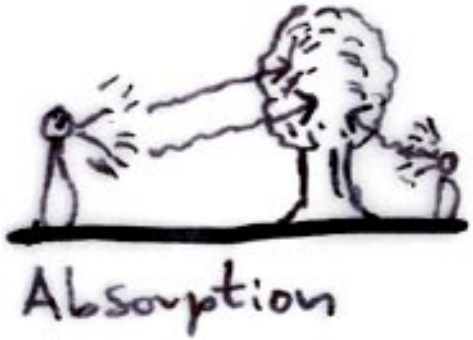
Architecture can be used to play on the human sense of hearing. This thesis will look at the spatial formation of music and sound. Spaces can be molded to produce and reflect certain sound effects that will evoke emotion from the user of the space. The effects of sound on human beings seems inevitable when one looks at effects of movies or screen plays, music and other sounds on people. If such effects can be controlled, that may allow opportunities for one to design spaces that will create predetermined effects on the body. This thesis will study such effects of the integration of architecture with sound to produce an environment conducive to the healing of the body and mind.

The thesis will study the effects of isolating sound in space and time to affect the user of that space. If one was to be momentarily blind, one may discover that “the ability to locate the position of one’s body in space is due to the power of the brain. It calculates the tiny differences or cues in sound intensity and arrival time from both ears. Unlike any other hearing instrument, only one has the digital algorithm that negates its own physical presence in the ear to fully restore those differences. That algorithm is called “saterah””.









008
Sound Study
(Author: 2008)

Smell and Taste

The Tongue:

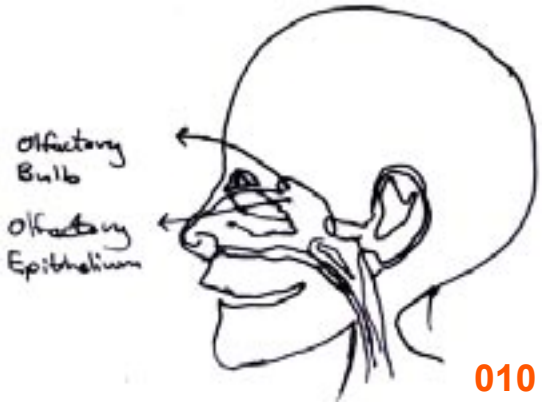
A newborn baby has taste buds all over the inside of the mouth, whilst adults' taste buds are mainly on the surface of the tongue. An adult has as many as 10 000 taste buds. Taste bud cells last only a week before being renewed by the body. (www.overview-of-fives-senses.com)

The sense of taste works in conjunction with the sense of smell to create flavour. The taste of food is a combination of several factors, including feel of the food in the mouth, its smell and its appearance. (www.overview-of-fives-senses.com)



009

The Nose:



010

The olfactory epithelium consists of millions of olfactory sensory cells. When odour molecules dissolve in mucus, they stimulate the receptor cells and generate a signal that moves up the nerve fibres into the olfactory bulb. This is where the signals are sorted and sent to the brain for interpretation. On everage, a human being detects between 2000 and 4000 different smells. The sense of smell wears off more quickly than any other sense. The brain becomes accustomed to a new smell.(www.overview-of-fives-senses.com)

It may be suggested that the subconscience sometimes stores the memory of these smells together with the events when they occur. These memories are triggered later in life when a similar smell occurs.

Smell and Taste versus the experience of space

The senses of smell and taste may be suggested to be the least strong of all other senses, however both of the senses qualify a body's presence within a space. Many times when one visits a place, it is easy to remember the sensual effects of that space upon one's body. Through manipulation of these senses, an emotional effect may be evoked by using materials that give off smell. ie. wet grass, bricks, concrete, paint, timber,etc. "Architecture can promote potent memories, which in turn improve an individual's experience in a place or space. The impression (and the sensual effects) stays with a person much longer than the time spent in the space itself and has the ability to grow into something completely different" (Miller 2006: 9). Everything that we are today is as a result of our influences in the past. The spaces we create today are a result of the images that are banked in our sub-conscious and our experience thereof. By focusing on one's senses of smell and taste, a vivid image of the space may be created in one's mind and the space will evoke an emotion pertaining to that space. Children learnt to appreciate materials and space through smell and taste.

009
The tongue
(After Internet: 2008)

010
The nose
(After Internet: 2008)

Environmental Psychology And Architecture

"…man's dwelling place in every land reflects the socio-cultural values of his time and place, expressing needs that go beyond those of physical shelter and comfort – psychological needs of identity, creativeness and harmony with the world." (Ittelson 1974: 1)

"…Architecture of Psychology…"

Architecture can never negate the influence of the natural environment on its users. One may argue the natural environment has more influence on people than architecture, if one looks at architecture as an object. People, like animals, are part and parcel of the environment and therefore flourish in that habitat. Architecture can be seen as an attempt to replicate this environment because "architects and designers have long known that form and appearance of a building influence certain behaviour" (Ittelson 1974: 1). When we build homes, we don't only build a physical environment but a psychological environment of meanings. It's a symbolic world that reinforces particular cultural beliefs, tastes and values. There seems to be a relationship between the psychological and physical needs of man. This can be attributed to the idea that the physical environment can provide a therapeutic setting, however, the exact opposite of this could also be achieved if careful study and research of the physical environment conveyed through architecture is misappropriated. An example of this can be looked at through factors such as inner city decay, overpopulation, and pollution, which are results of lack or mismanagement of planning in city infrastructure and services, urban sprawl and urbanization to name a few. These "environmental stresses" are man-made and unnatural, thereby are contrary to the modus operandi of the natural world. The environmental stresses continue to have adverse psychological effects on man. This leaves questions of possibilities of finding an equilibrium between the human and natural environment. "What we properly seek today, therefore, is a relationship with the environment that not only preserves what we have, but indeed, may help to recapture what has been lost." (Ittelson 1974: 2)

Reason and the natural

Looking back in history during the late 17th and 18th century, reason and nature worked hand-in-hand to philosophers and educators. It was believed that since nature conveyed characteristics of order, proportion, and harmony, any man-made environment that was congruent with these characteristics was deemed natural. Since towns and cities are products of reason and of nature, do they qualify as natural environments? It may be concluded that this is not the case. It was only in the 19th century that the man-made and natural environments were considered irreconcilable. The reason for this is that cities grew rapidly and sprawled over the countryside, some were badly polluted by new industries (Altman 1978: 6).

Man versus Environment

"Environmentalism is the belief that nature affects human beings and their institutions." (Altman 1978: 7)

For far too long, man has looked at nature as the enemy. This thesis would like to embrace the idea of "man in nature", rather than "man against nature". The environment only needs to be modified to serve human needs. Numerous questions arise related to the psychological effects of the natural environment on children.

- How does the natural environment affect children?
- How do children perceive nature?
- What aspects of the natural environment do they respond to and how do they adapt to it in feeling, ideas and outward behaviour?

When Psychologists speak of a child's "natural environment," they are not necessarily speaking of trees and grass, but rather an everyday environment such as a classroom, rather than an experimental lab. This thesis will further study children's milestones and how their natural environments affect them. "Children's health depends more on the quality of parental care, nutrition, medical services and the socio-economic environment in which they are raised rather than on whether they live surrounded by buildings or woods." (Altman 1978: 7) However, there seems to be a sympathetic bond between children and nature (Altman 1978: 7). Perhaps this may be attributed to their sensitivity and susceptibility to change, particularly in early childhood. A child has very few survival instincts in early childhood. At birth, the child is exposed to values and practices of a human group, usually his/her family. Very early in life, the child already becomes a cultural being by learning the ways of his/her people. Culture affects a young child's perception, values and behaviours. This however, in no way affects the natural process or stages of maturation of children.

"There is a special period, the little understood, pre-pubertal, halcyon, middle age of childhood, approximately from five or six to eleven or twelve – between the strivings of animal infancy and the storms of adolescence – when the natural world is experienced in some highly evocative way, producing in the child a sense of some profound continuity with natural processes and presenting overt evidence of a biological basis of intuition." (Cobb 1969: 123-124)

In order for children to develop mentally and physically, they need to be nurtured and allowed to play freely in a stimulating physical environment. The notion of playing is one critical to their development. Through play, they imitate adult behaviour, they organize games, invent stories thereby broadening their world. (Altman 1978: 12-13)

Notion of the Street

"For the street is human movement institutionalized. An individual may clear or mark out a path in the wilderness, but unless he is followed by others, his path never becomes a road or street because the road and street are social institutions and it is their acceptance by the community that gives them the name and function…" (Anderson 1991: 15)



011

Hypothesis of the street

- *Street*
- *Memory*
- *Human Experience*

The idea of the street as a social institution has been conveyed as a means of understanding the city. The relationship between the body and architecture can be investigated by using the street as a medium of facilitating this connection. For one to understand the street as a social entity, it seems important to observe its use throughout history.



012

Notion of the street

Historically, the street suggests an area set apart for public use. The notion of street is embedded in human experience. This suggests that it has reference to ideas and patterns of behaviour. (Anderson 1991: 15) Children have always treated the street as a space of play and this is normally followed by elementary forms of shelter aligning it. In the 70's and 80's school dropouts and hippies organized themselves into various subcultures limited to city areas based on the streets. This is an old tradition which still prevails even today, particularly in the townships. (Anderson 1991: 16)

Road: this suggests movement to a destination. It facilitates the transporting of people and commodities on foot, by pack animal or vehicle.
Alley: A narrow passage.
Avenue: a wide street with one or more lines of trees.
Boulevard: A tree-lined street.

Street Elements (Anderson 1991: 16):

• Terrace, row, arcade, embankment or gallery display the way in which the street is physically constituted by its context.
• Path, track, parade, promenade and mall are ways of proceeding on foot from picking a route of totally unmarked ground, to sauntering along a well-defined, marked way suggested by the word "promenade".
• It relates to vehicular traffic and to the legal and engineering matters.

011
Creation of a path (After Anderson 1991: 16)

012
Idea of a path (Author: 2008)

"I believe that the use of the street as locus of personal exchange and communication can be promoted and that it is the business, as well as the interest of public authority to promote such use, to which its more obvious functions, the carrying of traffic and the exchange of goods should, at any rate conceptually, be subordinated. Failure to do this will not result in the death of a city - the large complexes of buildings will not be abandoned in a hurry, even if all services fail. Rather, if no major intervention occurs, the growing alienation of the city dweller from his physical environment – entailing all too farmiliar social problems may well produce declining services and currently incalculable hazards." (Anderson 1991: 23)

Pedestrianization

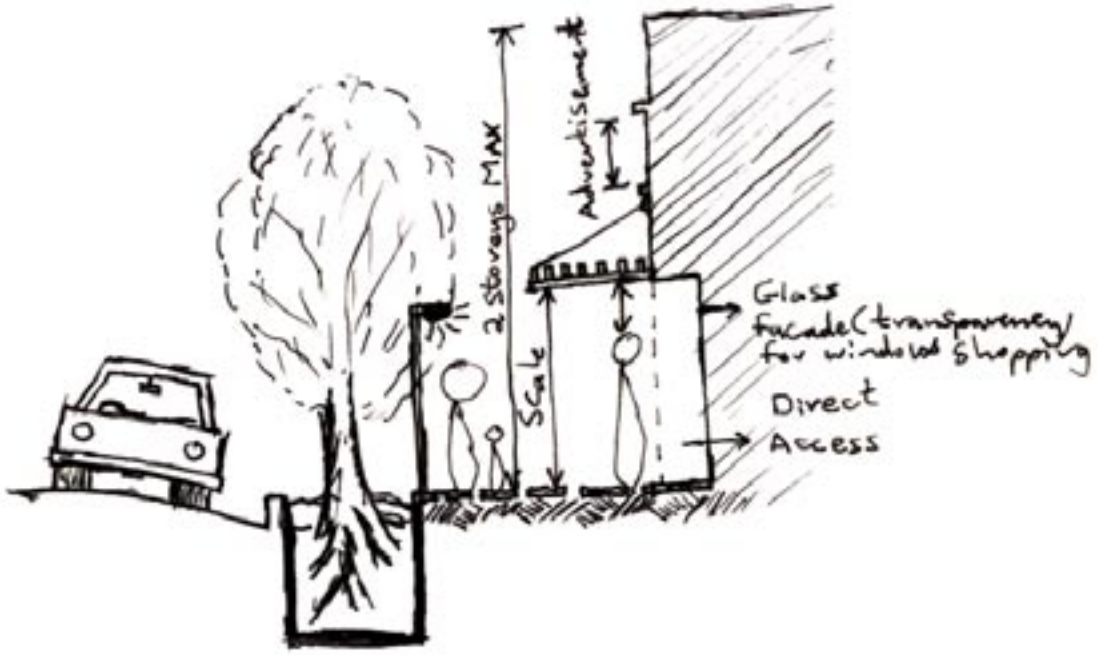
Central to the notion of the street is the user, in this case, the pedestrian. Several questions arise in support of this notion:

- Why do people walk or chair-wheel?
- What effect has transportation done to the idea of street as a social institution?
- What constitutes a good pedestrian environment?

Daily activities involve mainly walking. This includes those on a wheel chair. We walk to clean our houses, mow the lawn, shop for groceries, get to



013



014

013
Ideas of dealing with the street edge activity.
(Author: 2008)

014
Dealing with the street edge through scale.
(Author: 2008)



015



016

our workplaces, even car trips involve walking. Since we walk so much, one would expect that facilities for pedestrians would be well-designed and maintained. This, however, is not the case. Pedestrian safety, comfort and convenience have been seriously neglected and the problem seems to be perpetuating, even in Kwa Thema. Since the automobile has been so dominant, planning for the pedestrian has decreased resulting in delays, congestion, discomfort, poor or no accessibility, poor visibility and accident danger. Areas for safe and pleasurable walking or chair-wheeling have slowly diminished with pedestrians being relegated to narrower and narrower channels. (Utterman 1984: 1)

Pedestrians only interact with the street at the crosswalk. Areas where pedestrians are more comfortable are private gardens, parks, college campuses and shopping centres; however, these places are separated from the street where the real activity takes place. (Utterman 1984: 1)

Why do people walk or chair-wheel?

Walking or char-wheeling increases socialization, enhances health, contributes to recreation, relaxation and allows independence. Social

015
Nkosi street section
(Author: 2008)

016
Job Maseko Street Section
(Author: 2008)

interaction between people on foot or bicycles is easy and enjoyable. People also enjoy walking or chair-wheeling, sitting, watching over people, thereby offering passive surveillance, and talking as opportunities for leisure time. An environment which is filled with walking or chair-wheeling people helps to create an ever-changing scene that's exciting. (Utterman 1984: 1)

Pedestrians help to make a neighbourhood more livable, safe, and comfortable to be in. They often recognize outsiders and detect irregularities such as vandalism, burglary and mugging. The prescence of pedestrians on the street makes outsiders feel uncomfortable. Pedestrians can automatically be part of community policing forums by keeping an eye on their neighbourhoods. Children can also be watched over as they play in the street. This cultivates a sense of community. Walking or chair-wheeling has economic advantages and can increase the micro-economy of the community by increasing potential areas where formal and informal markets may be located. Children who can walk, chair-wheel or bicycle to school could reduce the cost of vehicular transportation.

What effect has transportation done to the idea of street as a social institution?

Transportation has caused roads to be constructed quickly without much planning and with little integration and less thought about the impact on nearby residents or pedestrians.

What constitutes a good pedestrian environment?

- Reduced travel distances.
- Increasing in land-use flexibility.
- Eliminating pedestrian barriers.
- Levelled walking or chair-wheeling routes
- Provision of weather protection.
- Elimination of conflict.
- Increase in spatial character.
- Pedestrian loading and drop-off zones
- Integration of transport by cars, bicycles and public transit







017
Informal market along Moshoeshoe Street (Author: 2007)

018
Street vendor selling from his bicycle (Author: 2007)

019
Informal retail at the end of a month along Moshoeshoe Street (Author: 2007)

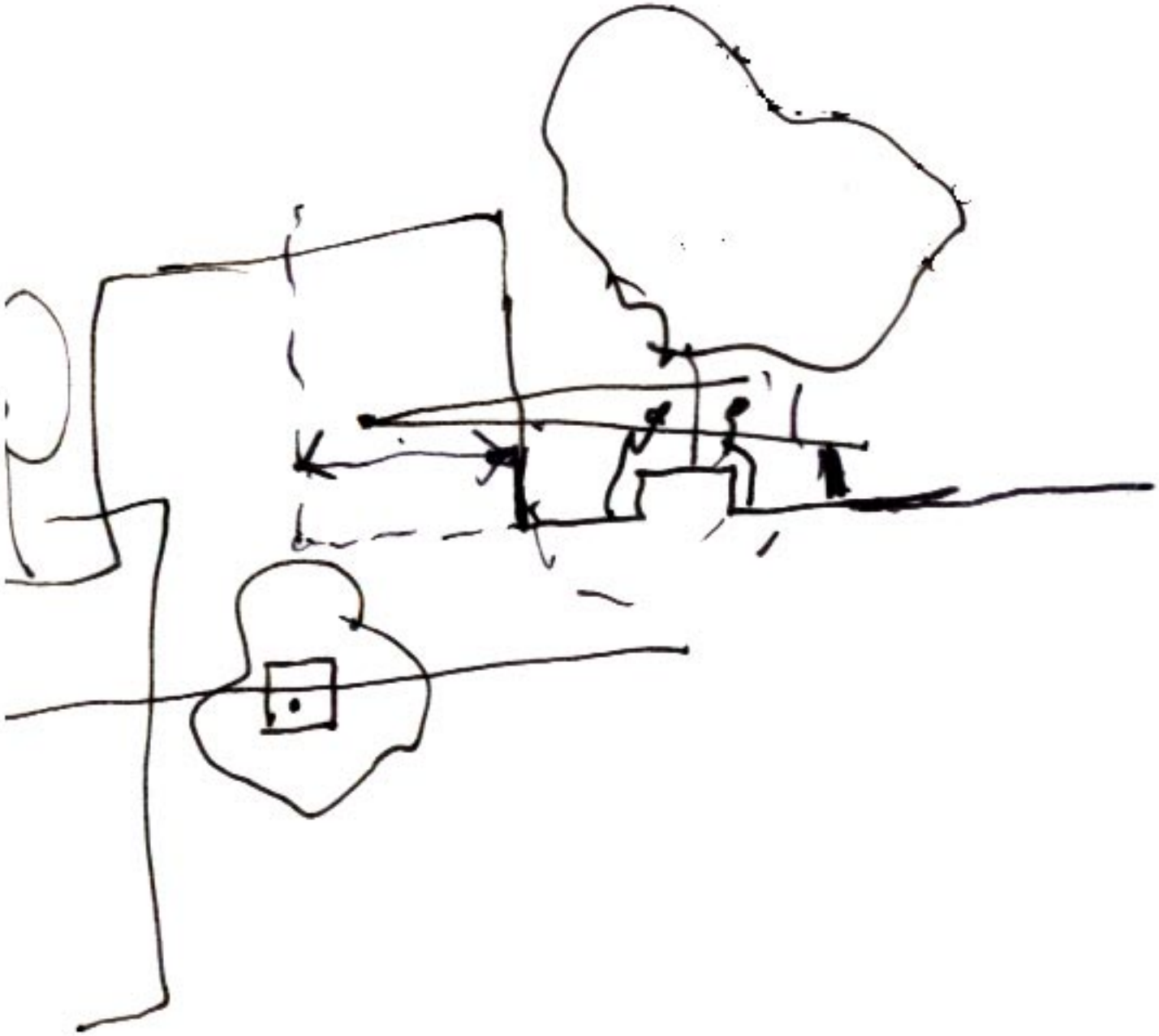


Mechanisms of Defensible Space

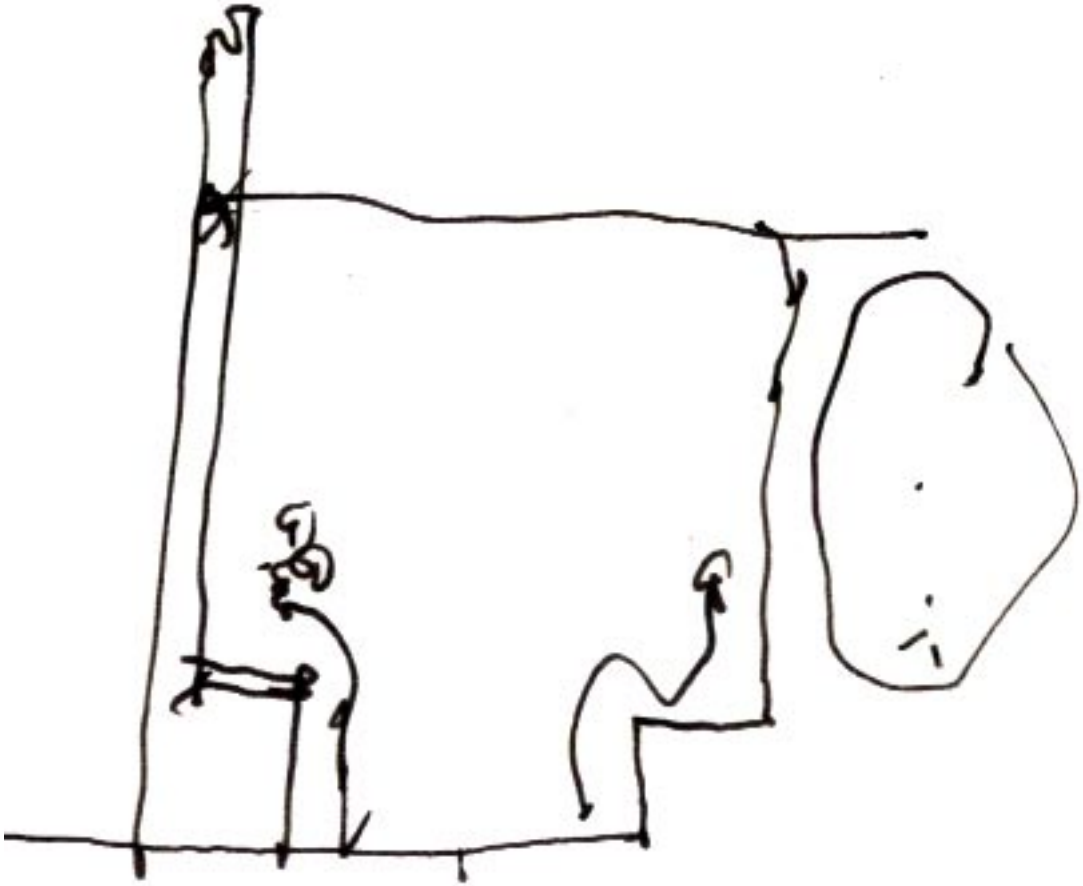


“Defensible Space is a term used to describe a residential environment whose physical characteristics (building layout and site plan) function to allow inhabitants themselves to become the key agents in ensuring their own security. However, a housing development is defensible only when residents choose to adopt this intended role - a choice that is facilitated by the development’s design.”(Niemeyer 1976: 4)

020
Cheetah street in Mamelodi where I spent part of my childhood. (Author: 2008)



021
Concept of passive surveillence in an urban environment. (Author: 2008)



022
Notion of sitting as an act of interaction.
(Author: 2008)

When one looks at Kwa Thema with a critical eye, one can see that it is a closely knit community. This thesis would like to propose mechanisms in which the centre may do away with fences through design by encouraging ownership of space. The physical elements and environment that will be created by the proposed intervention will aim to provide a sense of territoriality and community. One must mention that some of these elements already exist in Kwa Thema such as the transparency of the fences and usage of the street as a social institution, which allow for social interaction and passive surveillance. The following questions arise from this:

- How does the current physical environment affect the children of Kwa Thema?
- How can this socio-physical phenomenon encourage mental and physical development in children?

It is important to also understand the characteristics of defensible space which are as follows (Niemeyer 1976: 5):

• Small, defined areas controlled by specific groups of residents (refer to sketch of Mamelodi East-Khutsong layout at the beginning of chapter).
• This provides for easy recognition or identification of occupants of the space.
• Designing dwelling units, which are grouped together to facilitate associations of mutual benefit.
• Defining certain areas for particular functions.
• Defining paths of movement.
• Defining outdoor areas for particular users through their juxtaposition with interior living areas.
• Providing inhabitants with natural opportunities for the continued visual surveillance of these public areas, in buildings and outside them.

Some design mechanisms that this thesis aims to implement in order to create defensible space (Niemeyer 1976: 6) are as follows:

• To manipulate and intentionally create environments in specific areas that will be best utilized and controlled according to age, lifestyle, backgrounds, and family structures. This is important due to the fact that this thesis is targeted towards a very young age group, thus spaces need to be age appropriate, while keeping other users in mind. This type of approach to design can also be seen in Aldo van Ycke's Orphanage where the design of spaces relates to and is determined by specific users of the space.
• The spaces in the day care centre will be divided into zones, and this will allow the territorial definition of space. This helps in reinforcing a sense of security and decreases fear, which is important for the creation of an environment that is rehabilitative to children who had been abused. This is because a smaller defined space gives a sense of ownership and control to the users of the space. It also creates an environment that can be fully utilized and monitored by the inhabitants. It may be suggested that anyone that is unwelcome walks into the space, they will get the sense that they are trespassing or walking in someone's territory.
• The juxtaposition of dwelling interiors and exteriors is important in creating a privacy gradient and transitional space. One may propose that this may be achieved through changes of material, lighting and sound. The insertion of windows looking onto the street allows occupants to naturally survey the exterior and interior public areas of their living environments.
• Seating and gathering spaces will also be provided externally to promote the idea of seating, viewing and enjoyment of the urban environment.
• The juxtaposition of the buildings (their thresholds and amenities) with the streets so as to incorporate the streets within the sphere of influence of the environment.
• The adoption of building forms that prevent a perception of vulnerability and isolation of a group of inhabitants.



023



024

Current physical environment of Kwa Thema

Upon assessing Kwa Thema's physical environment, the thesis may conclude that based on mechanisms and characteristics of a defensible space, Kwa Thema lacks the physical elements that embrace this concept. When one compares the street layout of Kwa Thema Township to that of Mamelodi Township, where one spent most of one's teen years, one seems to see many differences. The street layout of Kwa Thema is similar to that of the Johannesburg CBD. It is modern, linear and orthogonal. The street acts as a central passage that everyone can pass through and connect with. In this case, it may be suggested that the street is for motor vehicles and the sidewalk for pedestrians. The two never interact with one another. Even though the sidewalk is for the pedestrian, it lacks identity, definition and ownership for a particular group of users, hence the congestion, vandalism and lack of maintenance of sidewalks.

The next space is the external garden, usually outside the fence - a transitional zone between the public and semi-public space. Under normal circumstances, this would be the space where trees, seating, gathering and children's play space would be, however, this is not the case. At times this space has been fenced in as part of the yard, or no public amenities have been allocated to suggest sitting, gathering nor interaction. According to interviews conducted, it seems that there is a general fear of promoting crime if this space is given to the community as an interactive space. Beyond this space is the fence, which is usually low, transparent and allows some sense of community interaction. The front garden is the semi-private space, followed by the house that is private space and the most private space being the back of the house.



025

023
Normal rectangular grid of the city of Johannesburg is used as a street layout in Kwa Thema.
(Author: 2008)

024
Zooming into an intersection. Proposed usage of three corners for purposes of revenue and a single corner for social interaction.
(Author: 2008)

025
Ideas of street furniture
(Author: 2008)

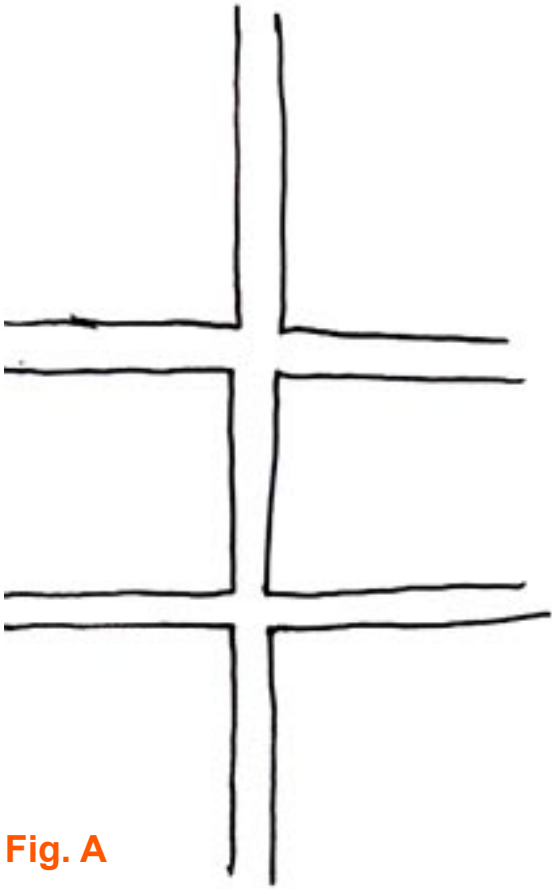


Fig. A

In comparison to the layout, in Mamelodi East, in an area called Khutsong, one has found that the circular layout of the streets, as per figure C - 023, connected by the main street that acts as a passage or connection route. The circular layout of the street is where living and life takes place. The only change that has taken place is that the community has decided to put up fences but similar to those found Kwa Thema, which are very transparent and allow some community interaction to take place.

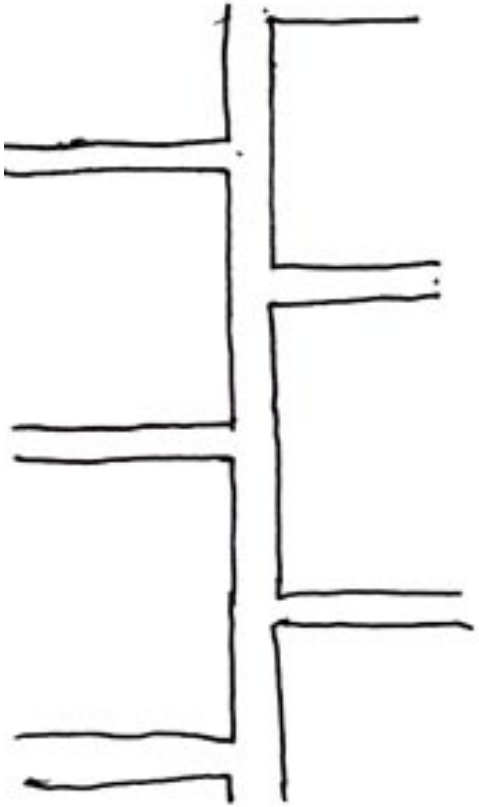


Fig. B

This action has, however, decreased the size of communal space, where communal cookouts, meetings, weddings, guy fox, games and other activities took place. Vehicles are secondary in this space and the pedestrian, mainly children dominated it. If one looks at the privacy gradient, one may assess it in the following form. The circular central space is public space. This is bordered by the space in front of the fence, which is semi-private. Behind the transparent fence is the semi-private front garden,

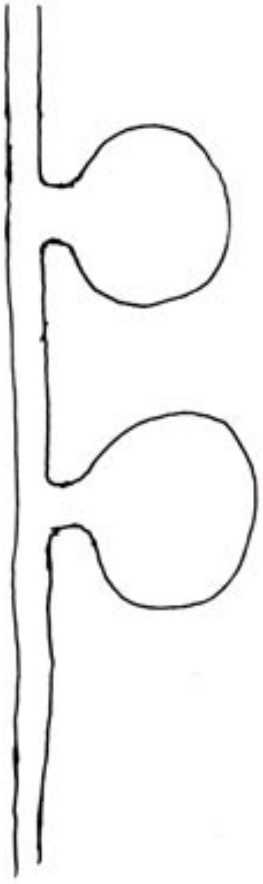
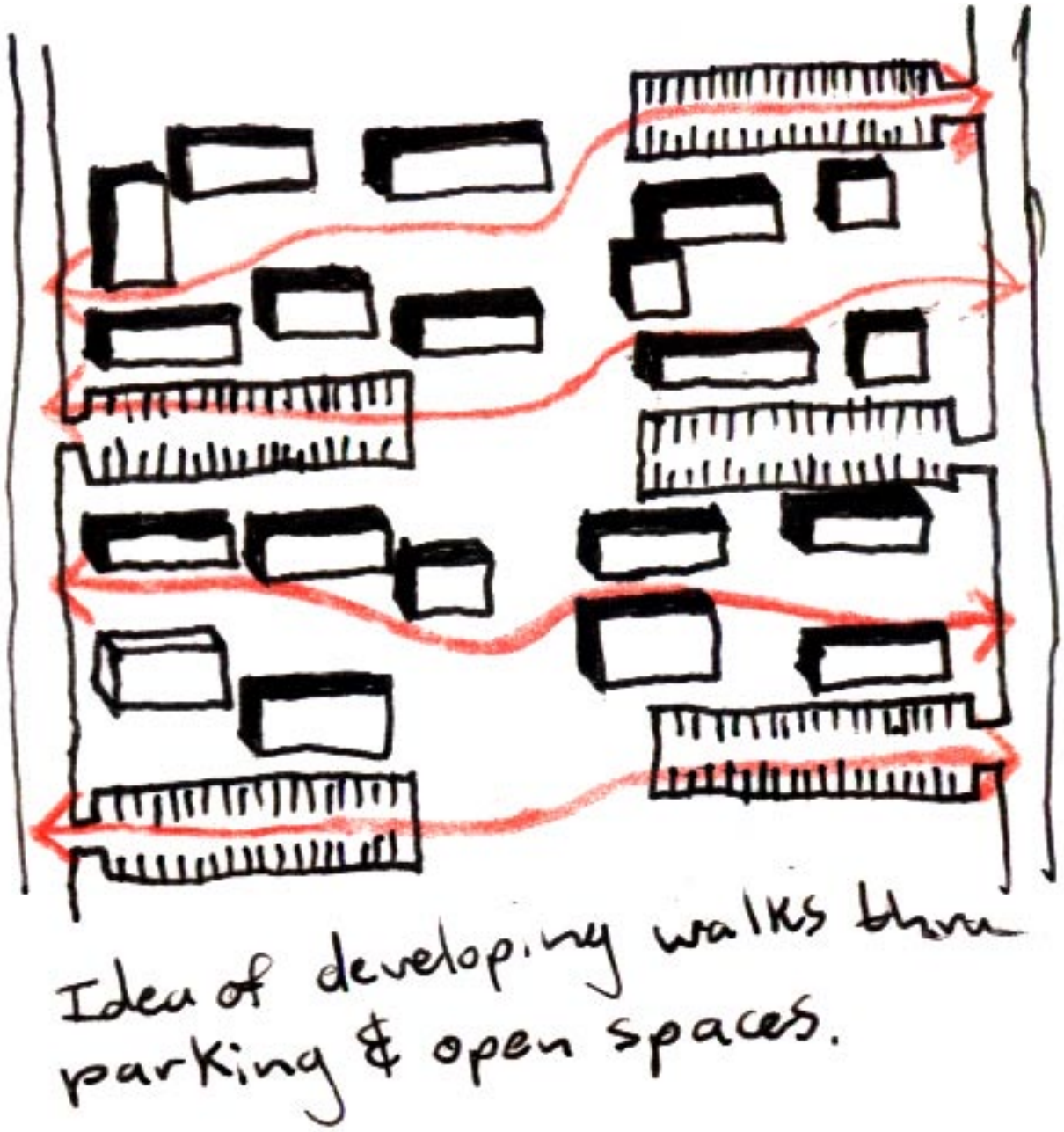


Fig. C

followed by the house that is a private space and the highly private space at the back.

One gets the sense that the layout in Mamelodi is more successful in promoting the idea of defensible space. The circular pattern of street embraces concepts of control and maintenance. In smaller groups, each family feels free to use the collective space for a wider range of activities (Niemeyer 1976: 6).

026
Comparison of street layout in terms of defensible space. Fig. A. Rectangular grid street layout. Fig. B. Alternating street layout Fig. C. Street layout used in Mamelodi East that makes use of principles of defensible space (Author: 2008)



027
Idea of developing walks through parking and open spaces.
(After Anderson: 1991)

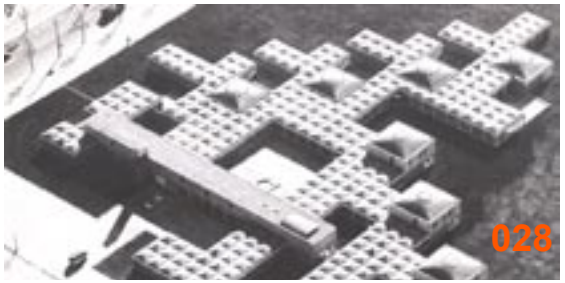
Chapter 2

Precedence Studies

These are the buildings that this thesis has selected to expand on my topic of stimulus. The buildings have been chosen as the basis of architectural exploration, not only on their ability to conjure human emotion, but to also study their social programs, which in my view is important given the mandate of my thesis. Through these studies, this thesis aims to get a better understanding of the design intention, daily operation and functionality of the buildings in accomodating the social programs that they incorporate. The outcome of this exercise will assist in gaining knowlege as to the manner in which these buildings induce emotion and to obtain a set of design principles that may guide the design of the day care centre and toy Library.

1. Aldo van Eyck's Orphanage

Aldo van Eyck, 1957, Amsterdam



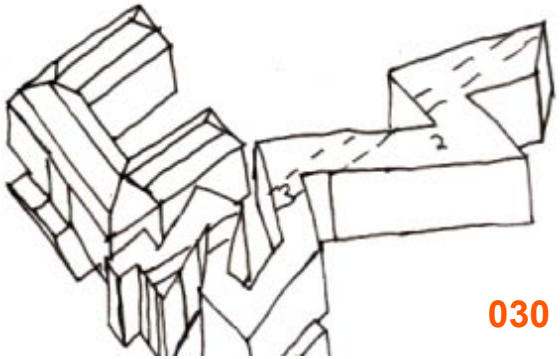
2. Kensal Rise Nursery School

Maxwell Fry, 1937, London



3. Jewish museum

Daniel Liebeskind, Berlin



4. Delft Day Care Centres

Neoro Wolff Architectures



028
Aerial view of Aldo van Eyck's Orphanage. (Strauven 1942: 29)

029
Kensal Rise Nursery School (Internet: 2008)

030
Sketch of perspective of the Jewish Museum (After Russel, 1999: 87)

031
Delft day Care Centre (Deckler 2006: 86)

4. Titan Township

Charles Correa , 1992, Bangalore



Fulbe Tribe, 1996, Dwelling in Lobali

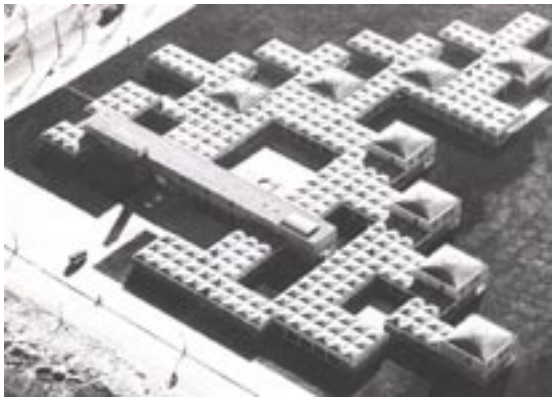
5. Soninke Dwellings



032
3d model of Titan Township showing its courtyard spaces (Correa 1996:159)

033
North African housing with multi-purpose spaces (Bourdier 1996: 87)

Aldo van Eyck's Orphanage



034



035



036

The orphanage is located on the Ijbaanpad in Amsterdam. It was designed by Aldo van Eyck and built between 1957 and 1960. The focus of the design was on the occupiers of the space. The built form is a perception of an interweaving of competence and performance. The building currently houses the Berlage Institute which is an international seat of learning for young architects. (Strauven 1942: 3)

The orphanage conveys some ideas that one would like to incorporate within this thesis. The strongest of which is the idea of home. The director of the orphanage didn't want a boarding school but a home, hence he wanted to move the orphanage away from the hustle and bustle of the inner city to a small ideal world bathed in healthy air, sunshine, and greenery. "A home where orphans could enjoy a more complete upbringing than ordinary children (Strauven 1942: 4)." It is in this small world that the children would be able to grow in sports, play, handicraft, music, theatre, and all kinds of visual expression.

The orphanage housed 120 children from the age of 0-18 years of age. These children were then divided into eight groups, where each enjoyed a certain amount of independence. A "horizontal"arrangement according to age was chosen (0-2; 2-4; 4-6; 6-10 years) with four groups of larger children (twice two groups of boys and girls of 10-14 and 14-18). Each group had its own needs and wishes necessitating appropriate facilities.

Residential units were not conceived as identical, neutral rooms but more like dwellings, attuned to the characteristic lifestyle of each group. Although, they all needed the same basic equipment such as a kitchen, dining room, living or play area, cloakroom and sanitation, each group was to have its own atmosphere and organization.

034
Aldo van Eyck's Orphanage. Large dome-shaped space for children aged 2-4 (Strauven 1942: 29)

035
Reading Area (Strauven 1942: 30)

036
Aldo van Eyck's Orphanage. Large dome-shaped space for children aged 2-4 (Strauven 1942: 29)

Organization:

The dormitories for smaller children were to be on the ground floor, not in a communal hall but divided among boxes of three or four beds. Older children had their own bedrooms, grouped on the upper level. Residential units for younger ones needed a spacious interior square where they could take an afternoon nap or play games tirelessly as it rains.

Living rooms were to be equipped with playhouses and multi-purpose furniture. The living room for the 6-10 year olds had a raised platform which functioned as an internal theatre so that the children should be able to express their fantasy in play-acting. The living room of the schoolgirls, aged 10-14 needed to be the most elegant of them all. It required space where seats can have varying arrangements. Its kitchen had to offer the opportunity to cook fancy things, something girls of this age need to do. The living room of their male counterparts required some area where they can work, knock things together and mess about without restriction.

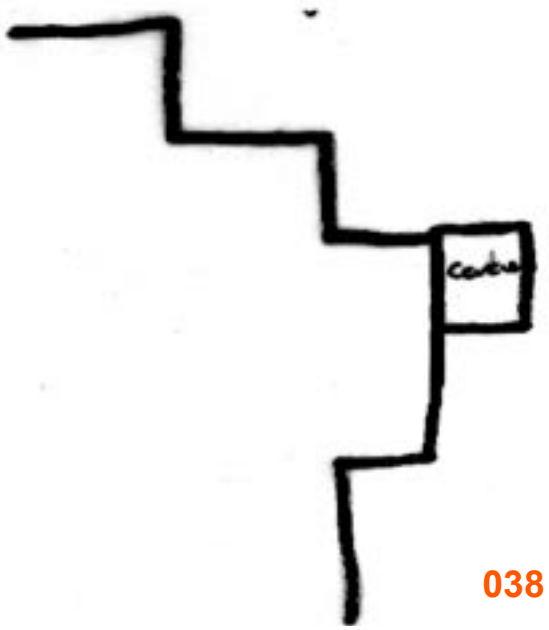
The heights of windows were to be such that the children can have glimpses of the outside when seated. Dimensions of the sanitary units had to be scaled to the size according to age.



037

The enlarged entrance hall allowed for group games.

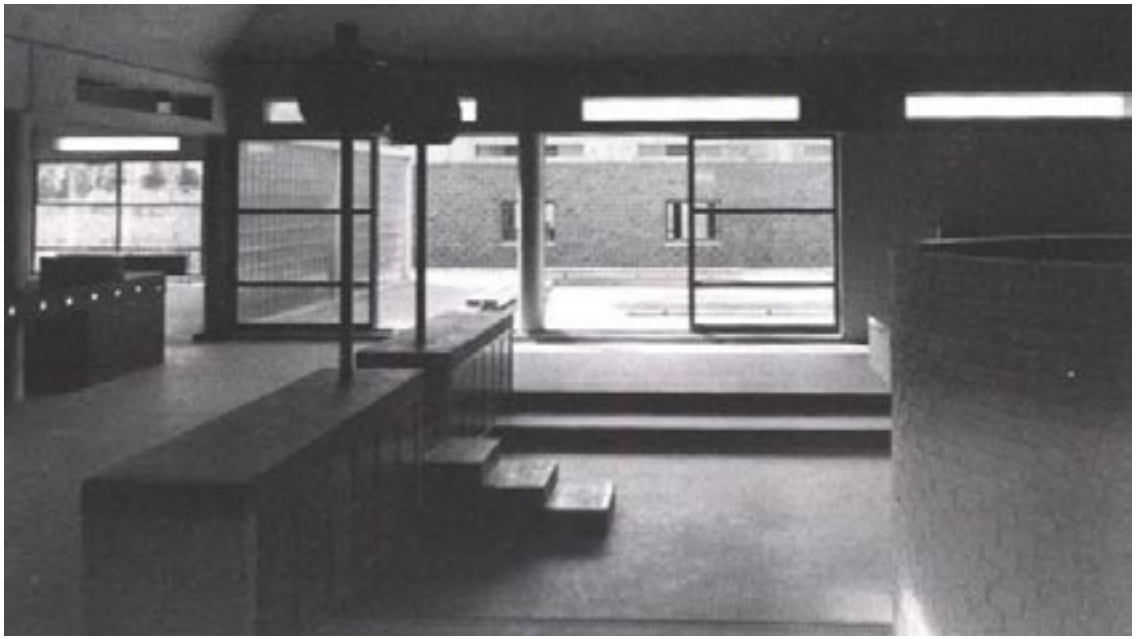
The orphanage is a good example of a house as a tiny city (Strauven 1942: 5-6). The dwelling houses had a variety of individual interiors and layouts, numerous playhouses, little kitchens, cosy corners which inspired linking of units, not by corridors but by “meandering streets”.



038

037
Analysis of spatial organization of the orphanage.
(After Strauven 1942: 21)

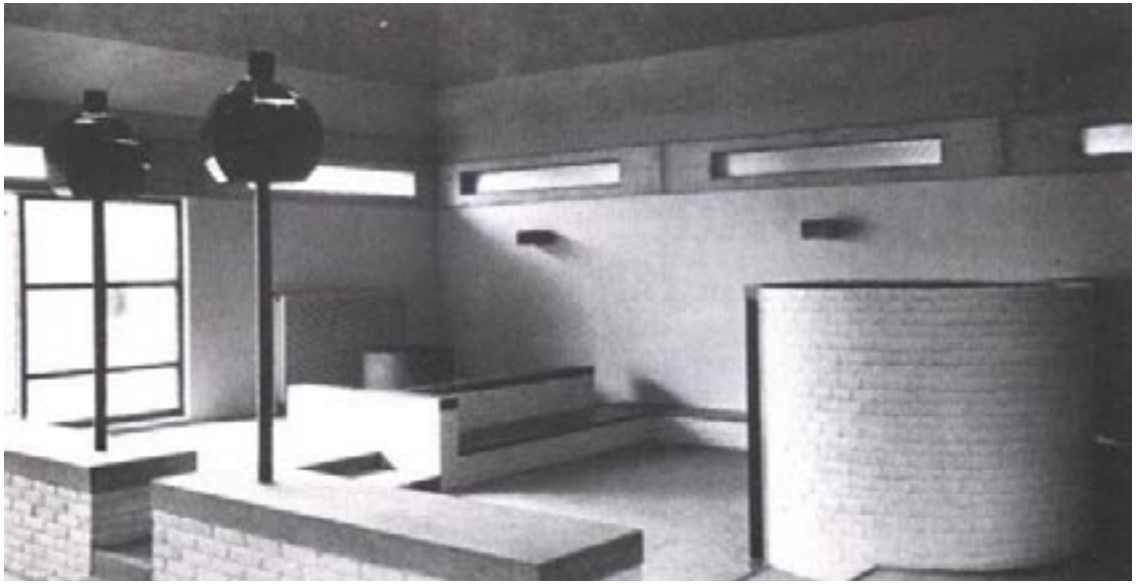
038
Meandering Streets
(Author: 2008)



039



041



040

039
Furniture made to accomodate the scale of the children using it. (Strauven 1942: 21)

040
Permanent furniture in the orphanage (Strauven 1942: 22)

041
Reading Area (After Strauven 1942: 30)

Kensal Rise Nursery School



042

Kensal nursery school: Maxwell Fry and Elizabeth Denby, 1937, London.

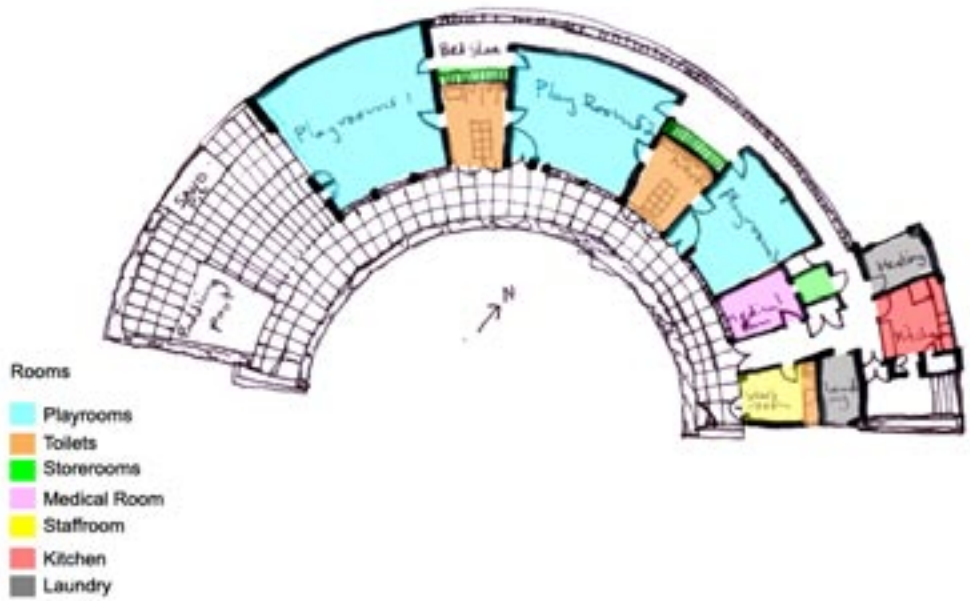
This was the period in which architects such as Walter Gropius, Le Corbusier and other well-known architects were at the frontier. The era of the 19th century saw concepts such as the machine aesthetic come alive as they portrayed images of the future. In the same period, two houses were displayed at the Weissenhof Housing Exhibition in Stuttgart (1927) that were designed by Walter Gropius. The houses made use of unit construction as a prototype for mass produced housing. In the following years, a number of modernist child care buildings followed these new technological principles, taking the home as their social model and often using the new technology. (www.bdonline.co.uk)

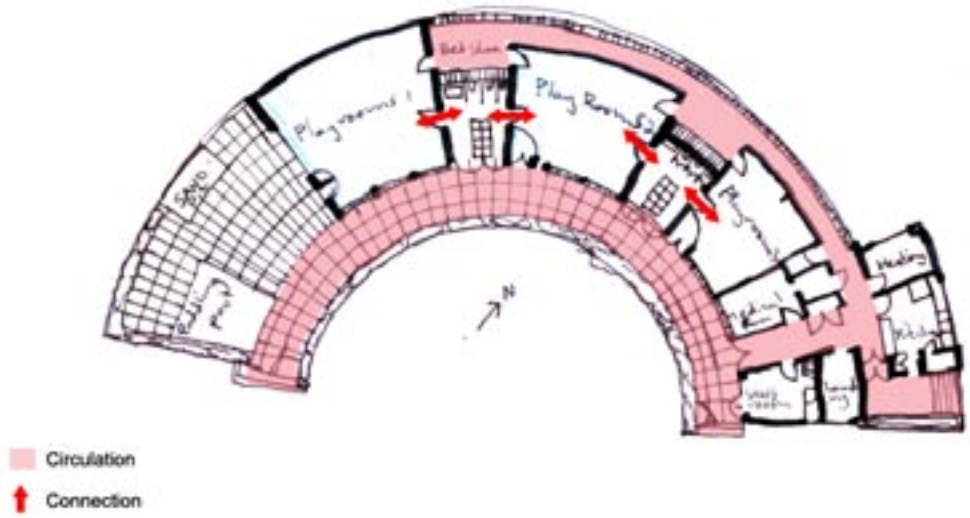
The Kensal House (1937) was designed by Maxwell fry and Elizabeth Denby. It is a social housing scheme located in northwest London. It included an elegant semi-circular nursery school, which was in the backdrop of the housing block. It followed European social patterns of maintaining closer contact between the home environment and the child's first school. The whole scheme shows the modernist influence of Walter Gropius.

The plan of the building allows for a variety of playroom sizes with good separation or rather connections by means of well-placed lavatories (Wright 1938: 22). This allows the groups of children to change from time to time. Some of the positive aspects that one has observed from this design is the varying sizes of playrooms. The semi-circular form of the design makes it quite interesting and gives the notion of a centralized safe and secure play space for the children. The toilets in between each classroom not only act as connections between them but also as sound barriers. Some principles that can be seen which are attributed to principles of designing a nursery school, can be seen and learnt from in this design.

The zoning within the design is critical. I observed that there are three different zones within this design.

042
Image of Kensal Rise nursery(Internet: 2008)





043
Plan of Kensal Rise Nursery School showing zoning. (After Wright 1938: 22)

044
Plan of Kensal Rise Nursery School showing Circulation and Connections (After Wright 1938: 22)

The most private zone are the playrooms and toilets. This may well have been different if the rooms were made to open out directly onto the terrace. There is a smooth transition into this space leading from the passage along the northern side, which first leads the children into the threshold in which bed stores are located.

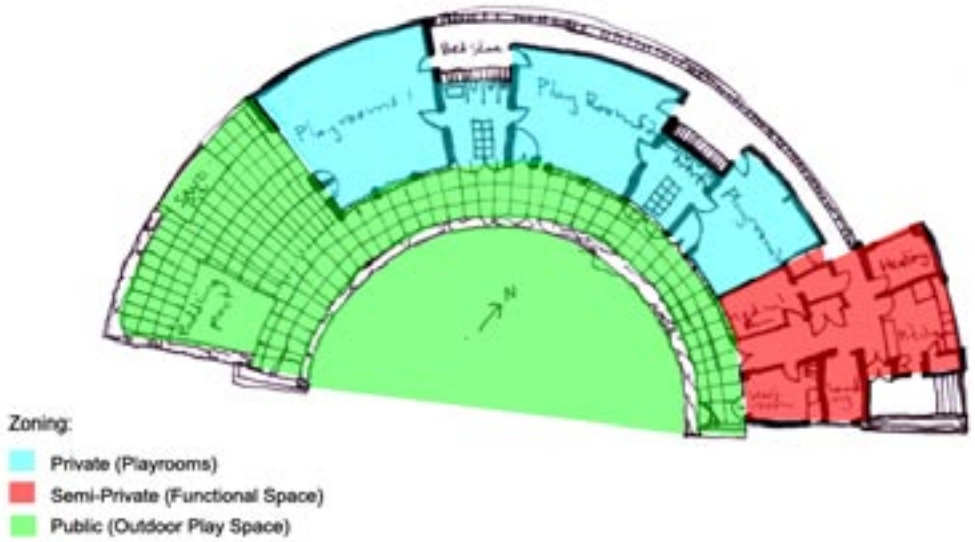
The semi-private zone is located at the edge of the building as indicated by the red, this is where the offices and other services are located, which facilitate the daily running of the kindergarten. The main entrance is also locate in this zone, giving a sense of access control and safety.

043

The last zone is broken up into two components. i.e. the hard play space (terrace) and the Grass play lawn, which is surrounded by the terrace allowing for passive surveillance of those locate in the playrooms.

The nursery school seems to be a good design but there are numerous reservations about it. The terrace is insufficiently enclosed and doesn't connect with the playrooms fluidly. The terrace roof should extend such that the external space will be able to be used even in bad weather, or even to be enclosed. It should be noted that the weather in London is almost

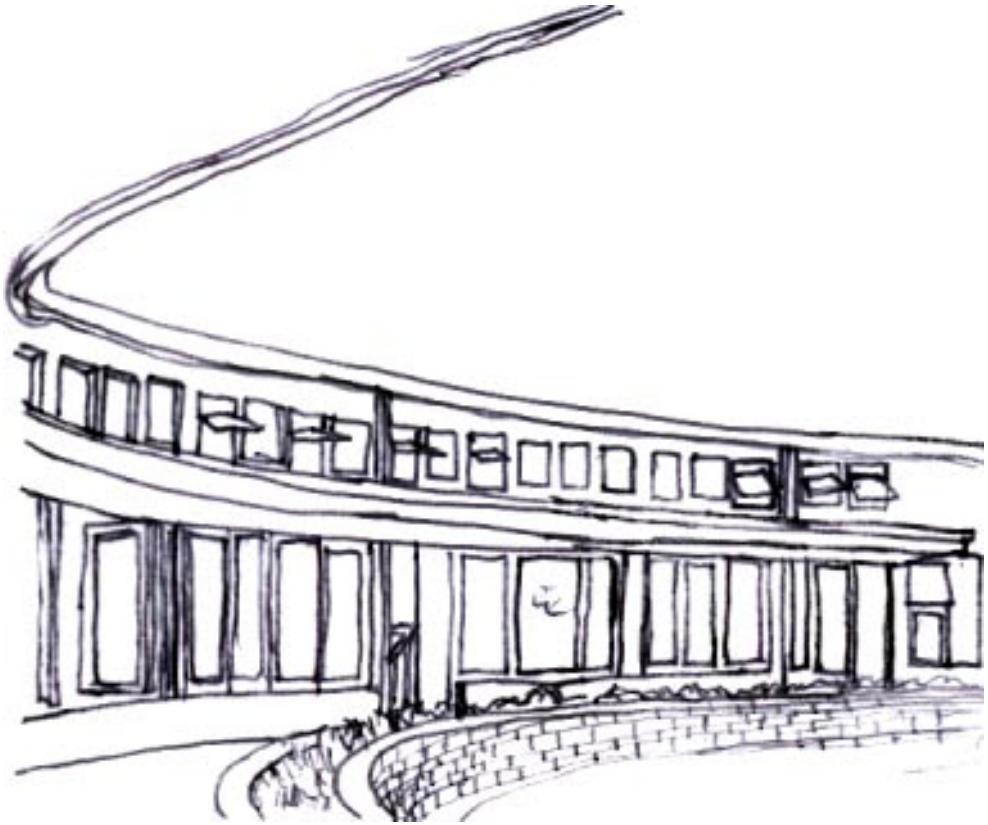
044



always terrible. There are very few days in the year where the weather is appropriate for allowing internal spaces to be entirely opened to the outside. This calls for enclosed spaces. Some of these observations and principles would be highly appropriate for the weather in our country, which allows spaces to be entirely opened allowing free play for the children. The outdoor space should also be able to be extended as an extra sleeping or teaching space thereby promoting multi-use of spaces.

045

The toilets act as sound buffers to the playrooms. The playrooms are, however, unable to expand into one another. The medical room also requires a bathroom in which the children can be inspected and treated.



046

045
Plan of Kensal Rise Nursery School showing zoning. (After Wright 1938: 22)

046
Perspective of south side of Kensal Rise Nursery School (After Wright 1938: 22)

Jewish Museum



047

The Jewish museum depends entirely on its success of conjuring emotion from its occupants. Through its unusual form, the museum is able to portray information in a non-literal sense. (Joannou 2003: 46)

One may suggest that a museum is a narrative for history and art. Daniel Liebeskind has successfully allowed the building not only to be a learning experience, but for the user to have an emotional experience like non-other. This is a paradigm for buildings that allow one's perception and emotions to be evoked.

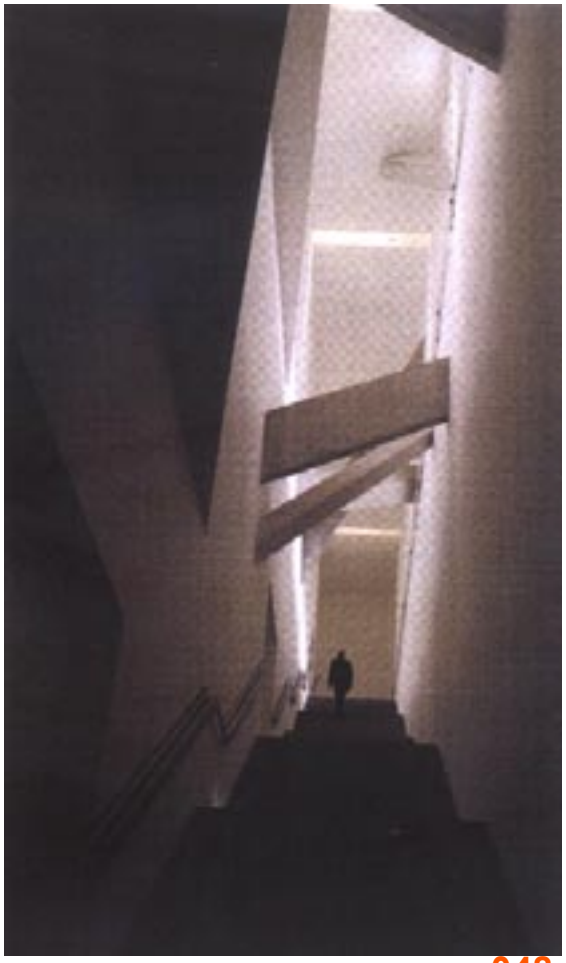
The zigzag form of the building, inspired by the star of David, speaks about a path - a journey from a start to a finishing point, with the entrance to the building being facilitated by the existing museum. The Jewish museum brings people in via an underground connection. One may identify this part of the journey as a depression.The straight line that slashes across the building is a line of raw concrete. The building is lit by thin, slash-like windows which capture the slices of light. The use of the dim light primarily works to create an emotional effect. The brutal material helps to create a sense of recollection. This would be a sense that the recreational centre would need to capture in some areas in order to allow the children an opportunity to contemplate their emotional status and events that may have occurred in the past. This space gives the visitor an opportunity to think about the Jews that lost their lives during the holocaust. (Joannou 2003: 46)

An intruiging feature of the museum is the single stair run which ascends through the museum. It is symbolic of the psychophysical co-ordinate of aspiration for reconciliation. Another axial corridor leads to a heavy metal door that opens to a base of a dark, echoing tower representing the "end of Berlin as we knew it" and is termed the apocalyptic void by Liebeskind.

The constant change in passage sizes and observation of impenetrable voids is a constant reminder of the holocaust.

When arriving at the end of the journey, the visitor is given a choice to, either leave the way that they came in or through the garden. This acts as a transitional space from a highly emotively charged experience to one that is calmer and full of memories.

047
Plan of Jewish Museum. The pattern of the recessedceiling light tracks and terrazo floors echo the criss crossing glazed slits (After Russel 1999: 88)



048



049



050

Outcome

The idea of an emotional, stimulating journey is something that seems intriquing. In this thesis design proposal, one has proposed ways and means of approach and entry to create an emotional experience whilst still maintaining the theme of play. One of the challenges presented when creating such a building is the manner in which those who might not identify with the storyline and function of the building also engage and enjoy the experience of the journey? One may suggest that as architects, one has the responsibility of the telling the story as known by the community that has been affected. It, however, seems impossible to tell a story that everybody may agree with. One may conclude that the building is therefore an attempt to record history as it occurred. The success or failure of which may be determined by the user - this may be recognised as part of the experience of the journey through the building.

Lessons about light and shadow (creating the mood), materiality, path and form (the building itself needs to tell the story) have been learnt.

048
Staircase leading to all levels of museum. (Russel, 1999: 87)

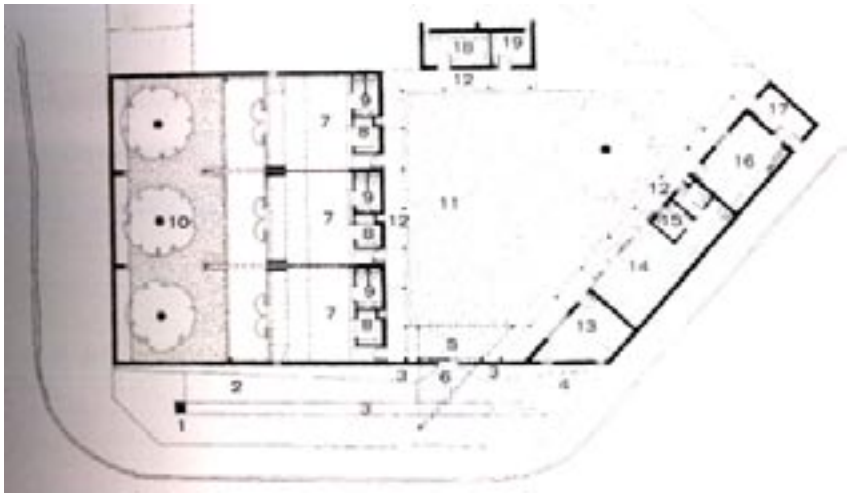
049
Light dappled void (Russell 1999:...)

050
Exterior view of Jewish museum. (www.danda.be/gallery/jewish_museum)

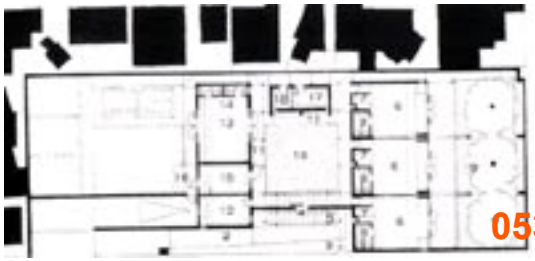
Delft Day Care Centre



051
Delft day Care Centre
(Deckler 2006: 84)



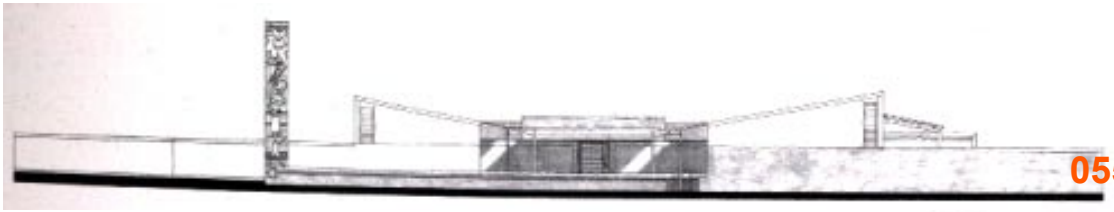
052



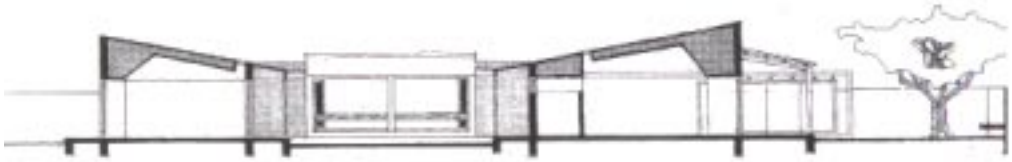
053



054



055



056

Delft is located by the Cape Flats. The design for two day care centres, which seek to connect buildings, landscape and the city together. (Deckler 2003: 85)
The day care centre is successful in its approach to simplicity. i.e. The straight thin lines give it a sense of lightness. The use of simple materials has helped the designer in being creative in the way he accomplishes his details and still achieve a good result at the end of it. The wall has only been plastered to a height of 1.5m, creating a continuous line that wraps around the buildings at eye level. The green and blue paint are reminescent of the land and sea. Above this, the bagged surface is painted white in contrast with the sky.

The building announces its prescence in the community with a vertical pylon, which extends hirozontally into a seat. This also highlights the path to the entrance, thus marking out a route.

The building ties in well with its context, however, one may feel that the building doesn't engage sufficiently with the users, which are the children. The open air playrooms don't connect with one another, which one feels is a lost opportunity.

052
Plan 1
(Deckler 2006: 85)

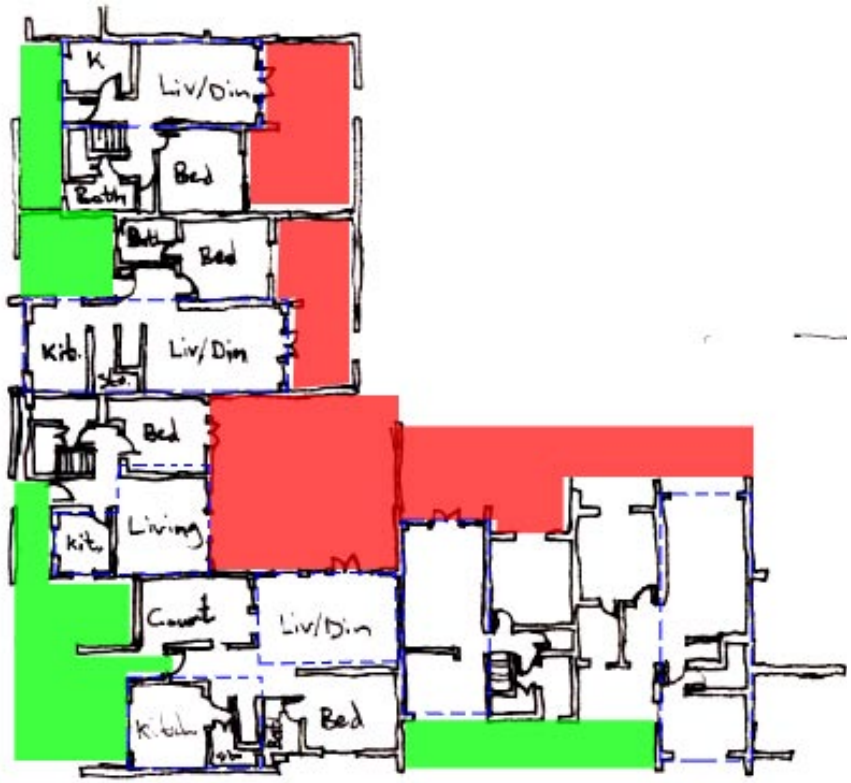
053
Site Plan showing context (Deckler 2006: 85)

054
Elevation 1
(Deckler 2006: 87)

055
Elevation 2
(Deckler 2006: 87)

056
Section
(Deckler 2006: 85

Titan Township





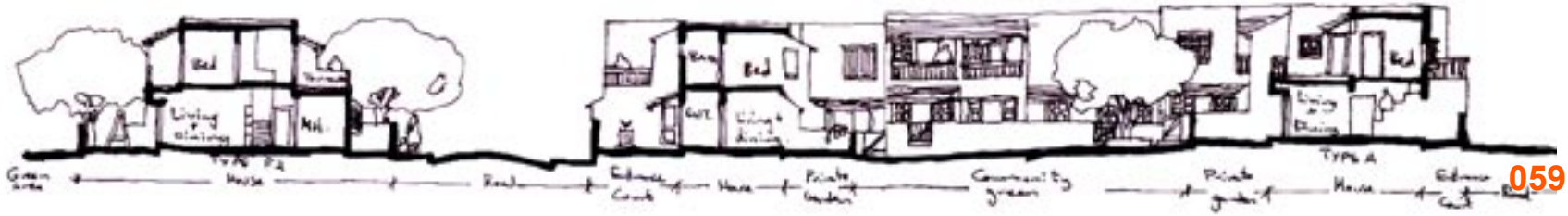
Kitchen & Living Rm

Entrance Court

Private Courtyard

057

058



059

057
Ground Floor Plan
(After Correa 1996:157)

058
First Floor Plan
(After Correa 1996:157)

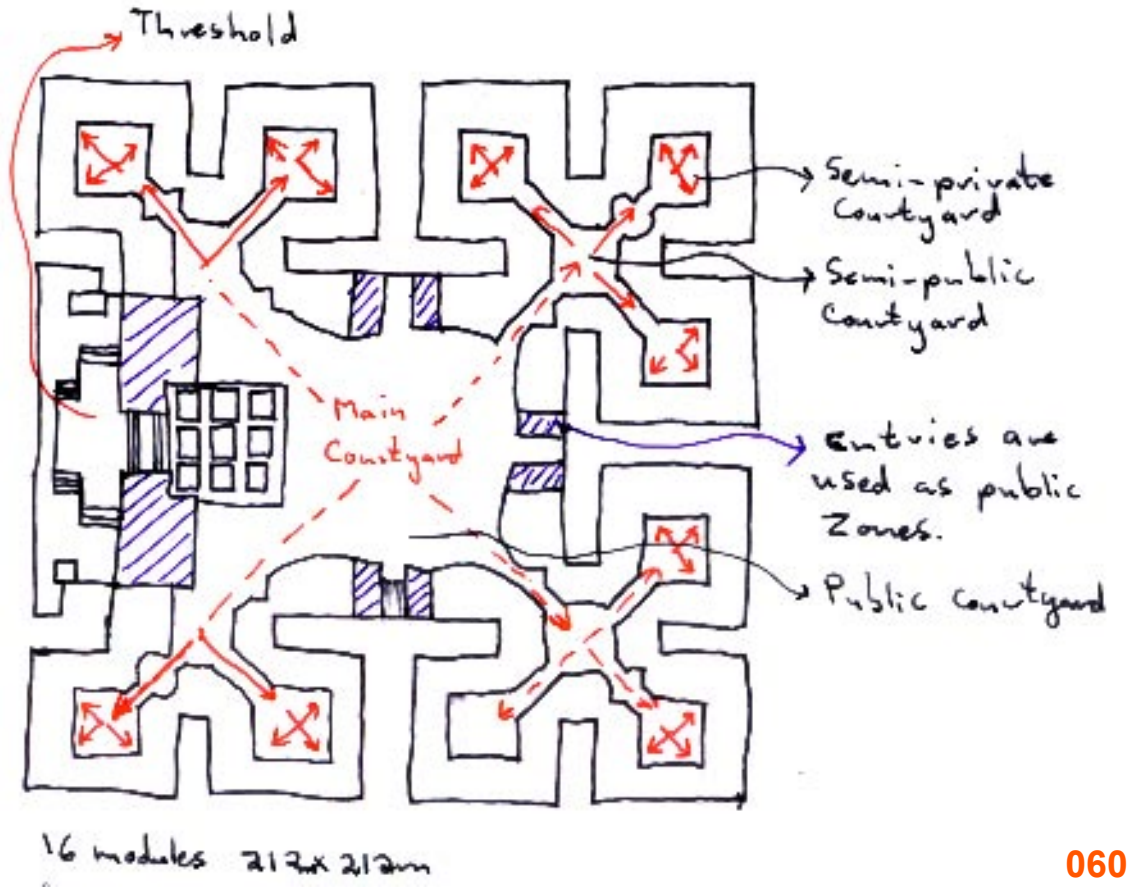
059
Section
(After Correa 1996:158)

Titan Township was set up as housing for workers. It was designed as an integral part of the new urbanisation taking place outside the small town of hosur, near Bangalore.

Some of the 1500 housing units were sold to outsiders in order to allow a natural mix in the population. The plan is very organised in order to prevent chaos that occurs in the Indian urban environment. The design was fitted into an existing Municipal Master Plan that had existing roads and services, regulated in a square grid. (Correa 1996: 158)

The basic square modules are 48mx48m and combine to form clusters of 16 modules. The roads servicing these modules were kept to very short cul-de-sacs, which carried service infrastructure such as underground electric lines and cable television. (Correa 1996: 158)

By interrogating the plan in its urban context, this thesis has learnt numerous lessons from it. Each of the housing units is a module that seems to have been repeated regularly throughout the site with minor changes occurring depending on the direction in which the unit faces. Each house is directly connected to the public roads at one end and to the community back-garden at the other. One may suggest



060

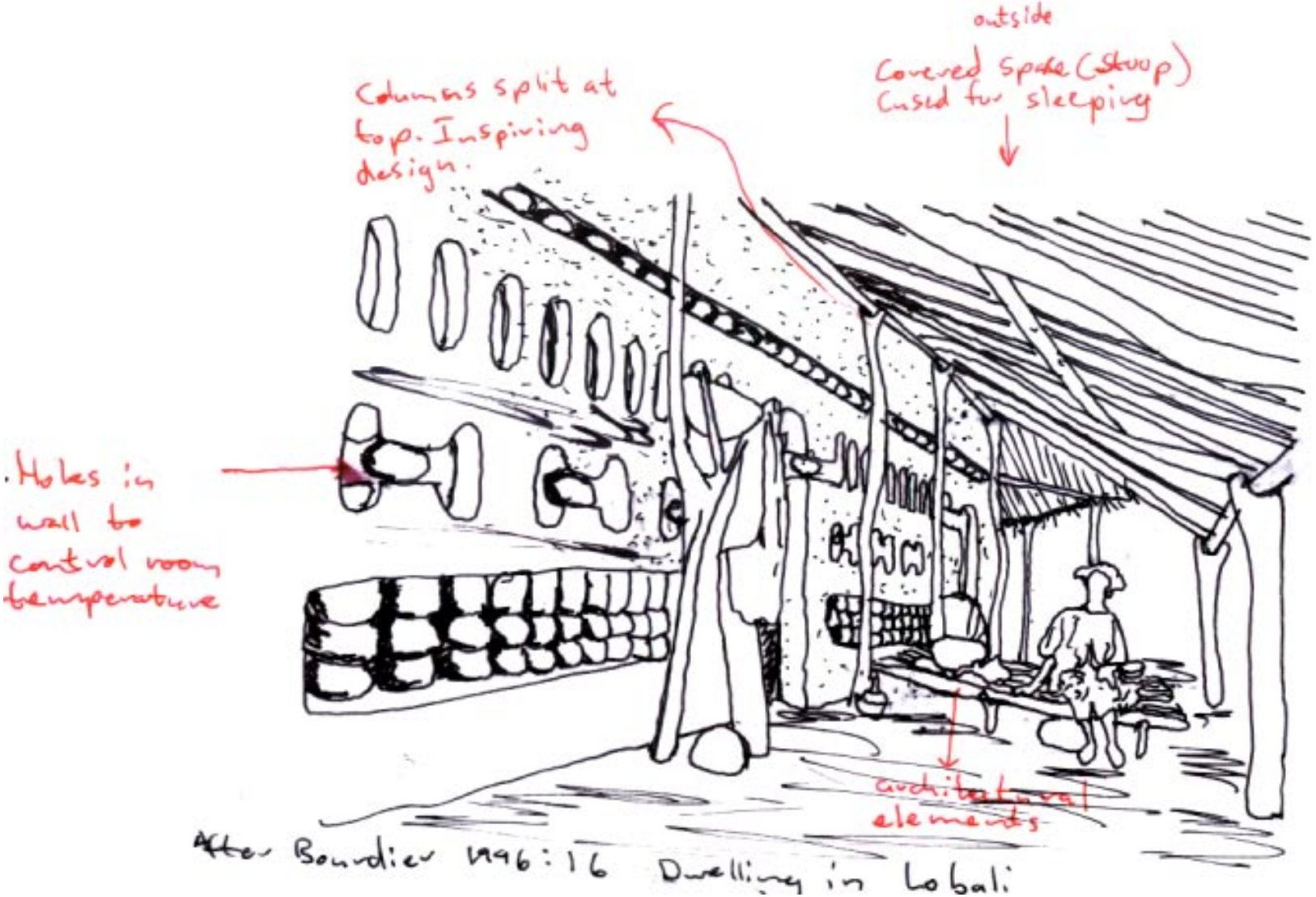
that this allows for a more safer environment where the community can engage with one another more intimately. Access to the back gardens is possible only at the gateway entrance, where public amenities are located such as kidergartens, community centres, and retail, thereby providing easy and informal control.

Another interesting observation is the transition of spaces by the use of courtyards, form more public spaces where the community gathers to private back gardens. The large main courtyard that receives users allows for effective passive surveillence.

It seems that concepts found in this design are congruent to those found in African cultures, where there is a strong usage of courtyards. The thesis would like to interrogate courtyards as a principle to be applied in the day care centre.

060
Site Plan showing organization of units. (After Correa 1996:155

African Dwellings



061
Woman seated under the roof overhang of a Fulbe house. (After Bourdier 1996:28)

One believes that there are lessons to be learnt from the architecture of the north. It has, therefore, investigated the Fulbe people from Senegal.
The Fulbe people are located in a arid region and one may find it quite valuable to investigate on how they survive and deal with various architectural principles such as entry, keeping the elements out, circulation, light and shadow, etc. in the simplest of ways.

The Fulbe cultural group have a pastoral life. They hold human beings, animals and things in esteem. (Bourdier 1996: 28) Each homestead comprises of a dwelling of a single household and an additional dwelling for either the second wife or a close relative. The homesteads are small, thus allowing only the conjugal family to remain the vital unit of social life.

Types of dwellings

There are two types of dwellings:

-The Fulbe of Ferlo Desert, which are dome-shaped.
-Tunnel-shaped dwelling (waalwaaldu).

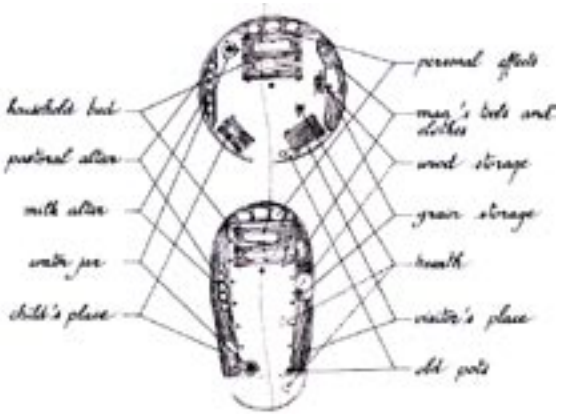
Variations in the form and structure are the most visible from the outside. The shell shape has a perculiar system of entry and a varied location of the entrance doorway. (Bourdier 1996: 36)

Outcome

The shapes of the structures give attention to the Fulbe tradition of buildings with semi-open space, which are transitional spaces, whose multi-purpose function sustains a bond of coming and going of daily movement and rythm. There's high usage of multiple function space. The entrance is always low and wounded. The antechamber is not only a transitional space but a place for cooking and sleeping space. (Bourdier 1996: 36)

When one enters the unit, one steps into a womb-like interior with all fixtures and objects kept agains the wall. This is a similar principle applied to the day care centre in this thesis, where entrance into the playrooms is via an entrance chamber, which acts as a transitional space. (Bourdier 1996: 36)

The houses open to the south. To the west is the woman's storage, the east is the man's storage, which is raised on short posts driven into the sand. The objects that are personal to both are located to the north. In the middle is the couple's bed. (Bourdier 1996: 36)



062



063

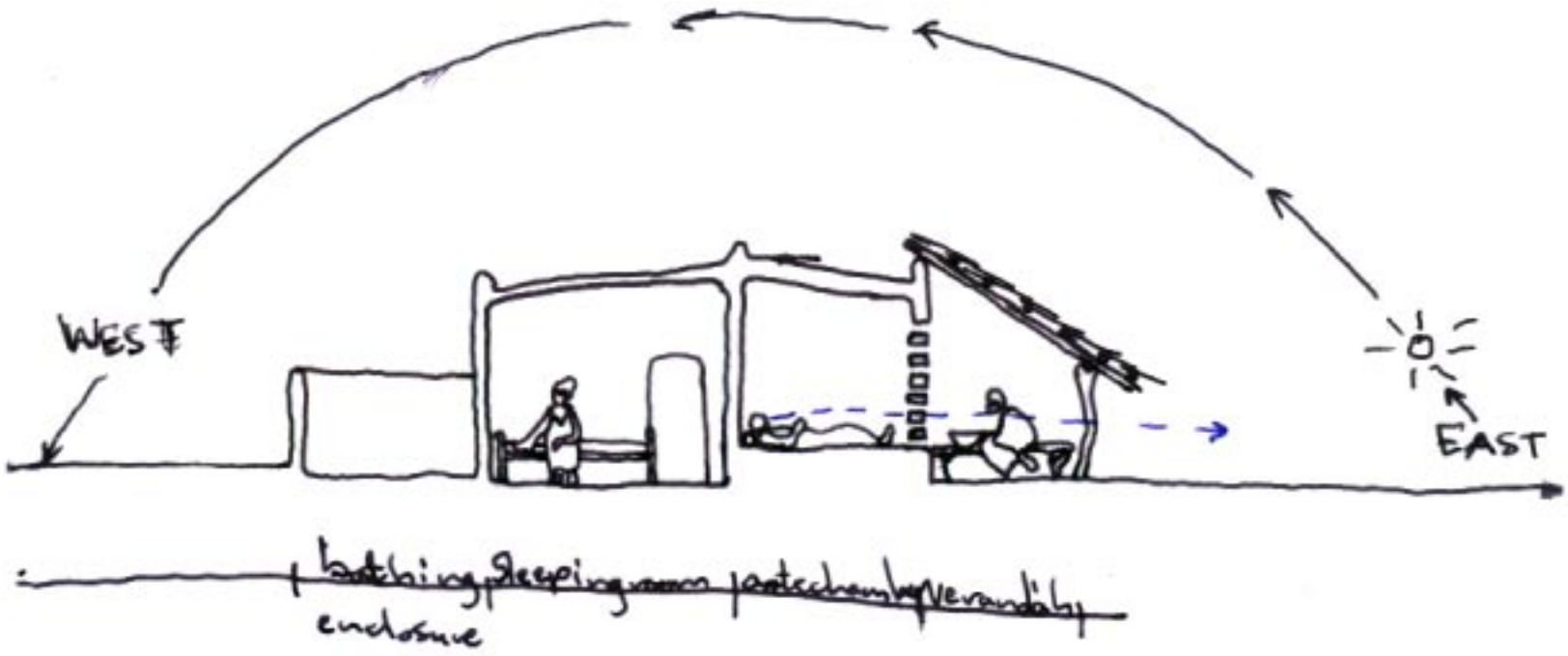


064

062
Gendered interior spatial ordering of the two main types of Fulbe dwellings in northern Senegal (Bourdier 1996: 43)

063
Entrance to a dwellings in Nenet (Bourdier 1996: 44)

064
Central structural support of dwelling (Bourdier 1996: 38)



065

The central pillar on which the main beam rests can be read in its ascending movement towards the ceiling and its concave two branced or forked head shape as being a feminine counterpart to the beam, which remains in its convex single shape and downward curve, the masculine conveyor of the celestial force.

When one looks at a typical section through a dwelling, one can pick up the transition of space from the verandah, which looks onto a public space. These zones primarily correspond to the variations in climatic conditions. The house offers three living areas, which are the veranda, antechamber and sleeping room. Sleeping and cooking normally takes place in the antechamber or veranda.

The dwellings are made out of adobe, which makes them appear homogenous. The facades are protected by a thatched roof and a stoop - the latter seems to be a feature quite common in Kwa Thema.

Some of the lessons learnt from this simple form of construction, perhaps even the construction techniques may be borrowed in this thesis. The play on light, shadow and materials is significant in this architectural form.


066


067

065
Section through dwelling (After Bourdier 1996:38)

066
Interior of dwelling in Nenet showing the play on light and shadow. (Bourdier 1996: 46)

067
Interior of dwelling in Lobali with similar play on light and shadow. (Bourdier 1996: 12)

Visiting the SOS Village



068

Upon visiting the the SOS Children's village in Mamelodi, one is greeted by a pool of water. The water gave a wonderful, light welcome effect. Contrasted by the solid structures positioned all around it, the water feature and greenery around it help in breaking the monotony and solidity. It must stated that the village was too solid and that a bit of contrast in materials and colour among the various building would add variation. One gets the sense of being in an institution on arrival.



069

Sam, the Village Co-ordinator, revealed various spaces and buildings on the campus through a grand tour of the premises. It contains numerous buildings such as a day care centre (ages 0-6), 4 Housing units (catered for 10 children each varying from the age of 0-15), an administration block, computer centre and sewing centre. Each household has a foster mother and a helper.



070

Housing Units

The housing units were single-parent households without a father. Each family has its own budget. Each house has five to six bedrooms that cater for minimum 3 children each. The families are of mixed gender and each child has a chore and a role to play in the family. The children go to public schools for schooling, thus integrating with society.



071

The journey was certainly a learning experience with the outcome being that this thesis extracted elements of village as part of my design principles. e.g. scale of objects, the idea of family units and how to group them, the architectural language one use, making the place more accessible to the community, the spaces required for housing the children and spaces required for the kindergarten.

068
Water feature at entrance.
(Author: 2008)

069
External play space.
(Author: 2008)

070
Mixed Toilet at the kindergarten found on campus of the children's village.
(Author: 2008)

071
Lounge
(Author: 2008)



A playroom with a niche(level drop)



Niches in the wall



Computer Centre



Kindergarten kitchen



Chores and responsibility



Sewing training centre



Kindergarten courtyard



Boys bedroom at housing unit



Playground with play things

072 073 074

072
Elements of the kindergarten
(Author: 2008)

073
Elements of housing unit
(Author: 2008)

074
Other programs of the children's village
(Author: 2008)

Chapter 3

Children and the environment



075
Children of Kwa Thema playing on open day of the Masimini Beer Hall. (Author: 2008)

Infants: early days

Children in their infancy are at the most vulnerable phase in their lives. This is a time when they experience direct interaction with the environment. What I find interesting is how children from different backgrounds and environments experience similar growth patterns and milestones. The only thing that makes a difference is the amount and type of stimulus that they receive from the environment. To children, the natural environment is both animated and inanimated. Little children, however, don't distinguish the natural environment and man-made objects. To them, it's all the same. (Altman 1978: 14)

It is believed that from the first day, infants are able to distinguish between the living and non-living matter. The body, as a living matter, is part of nature and is the first avenue of exploration for infants. At, first though, the baby is not aware of its own body make-up. In the same way that a baby clutches its mother's breast, a baby may grasp and play with its own feet. The baby only becomes fully aware of its body in its 6th month. (Altman 1978: 15)

The French philosopher, Maurice Merleau-Ponty stated: At six months, at last, the child looks the other child in the face and one has the impression that here, for the first time, he is

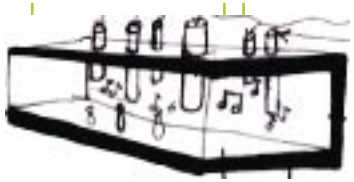
AGE	CHILD DEVELOPMENT CHART	ARCHITECTURAL RESPONSE	CHILD'S NEEDS	PROGRAM	SENSES	BUILDING COMPONENTS	MATERIALS	STIMULUS	OUTCOME
0-6 Weeks	Social Behaviour & Play -watches mother in feeding -reacts to voices by smiling and noises -everything goes to mouth -shakes rattle -holds -reaches out to grasp spoon when feeding (Health department: 2007)	-interactive space space between mother & child -high level of privacy	Social interaction	-foster mother & child interactive space	Touch	-walls/floors/ ceiling	-carpet -Tiles	-cold vs hot, big vs small, rough & smooth	-use of contrasts as a stimulating element develops the childs ability to differentiate
				Relaxation/ Seating area	Hearing	-sound booth	-brick or concrete -trees and water	-reflection/ Deflection of sound	-Babies will look towards where sound comes from.
			Play	-sensory studio	Sight	-Colour Charts	-brick or concrete -trees and water -stainless steel sunscreens -Stainless steel tubes	-use of shadows to play on the idea of time	-Children are stimulated, even though they might not understand, to know times of the day and seasons by watching the movement of shadows
				toy-library (Morrison 2007: 6)	Smell	-stack effect: to allow smells that may be deemed unsafe to be removed by wind channelling			
	Vision & Fine Movement -Hands closed thumbs in -Shuts eyes tightly to light -follows objects slowly from side to side -hands loosely open -finger play -eyes move together, squinting abnormal (Health Department: 2007) -palmer grasp -picks up objects but can't build tower	-screening from light -low intensity Lighting	Teach/Learn	Interactive Space	Taste	-Cradle room (www.pbs.org)	-Steel wind tubes	-sound effects -Air conditioning ducts	-Infants are sensitive to smells and tastes.
		low lighting	Growth & Development	Stimulating Environment		-home -open plan internal & external play area (garden) (Morrison 2007: 13)	(Author: 2008)		
	Hearing & Speech -stops crying when spoken to -startled by sudden noise -gets excited when hearing footsteps -back straight -recognizes mother's voice -responds to hearing test (Health Department: 2007)	-screening from light -low intensity Lighting	Support	Sensory Perceptive Studio	Touch	-walls/floors -Greenery	-Comportable surfaces, i.e. carpet (Wright 1938: 25)	-Walls become floors and roof	-Play on visual perception which is a stimulant on its own (Altman 1978: 35)
				-Interpreta-tion Centre	Hearing	-sound reduction using building elements	-brick or concrete -trees and water	-Walls become floors & roof	
	Gross Motor -Grasp sucking reflexes sometimes still present -slight head lag -head control for a few seconds -rolls over -kicks with alternative legs -sits alone for 10-15 min -starts crawling (Health Department: 2007)		Food	Eating/ Feeding Space	Sight	-play on lighting and shadows - colours	-brick or concrete -trees and water -stainless steel sunscreens	-The rainbow colours & different shades of materials are very stimulating to babies.	
				-Baby Rooms -Play Rooms					
		-child surveillence	Shelter	Building	Smell	Some smells may be traumatic to the child, which may have effects on the baby as he/she grows.	-glass (curtain wall) -dry wall partitioning	-The changes in smells and taste as they grow up acts as a stimulant.	
				-Storage/toy racks -Change Rooms with nappy changing	Taste				
		Continuous Surveillence of Children							
		(Author: 2008)							

AGE	CHILD DEVELOPMENT CHART	ARCHITECTURAL RESPONSE	CHILD'S NEEDS	PROGRAM	SENSES	BUILDING COMPONENTS	MATERIALS	STIMULUS	OUTCOME
12 - 18 Months	Social Behaviour & Play -claps hands -waves goodbye -drinks from cup -helps with dressing -intensely curious -throws and picks up objects -may indicate if wet or soiled -Walk backwards -Place rings on a peg (Health Department: 2007)	-allow plenty of transparency -dark spaces for exploration -interactive wall (texture, painting, drawing, etc.) -space to provide integrated jungle gym within building	Social interaction (Morrison 2007: 41) Play	-Multi-purpose furniture which aids in play. -Other Children -sensory studio	- Play Benches -Bouncing chairs -Musical/ Voice cube	Touch -Materials Hearing -materials: reaction to sound Sight -darkened spaces Smell -memory. -Transitional areas Taste - memory	Brick/ Concrete walls -rocks/stones -brick or concrete -Steel/ Corrugated sheeting Womb shaped sleeping/ Eating areas -wet brick or concrete -trees and water -stainless steel sunscreens	-Relationship to the body (www.overviewoffivesenses.com) -Reflect/ Absorb sound -straight/bent -hard/soft -Melleable/ Rigid -wet/dry -Smell and taste of water as vapour cools (Altman 1938: 14) down space through ventilation	-Response of the body to objects. -Stimulation by direction & redirection to create a certain reaction. - Soothing/harsh sound Use of contrasts as stimulus -Hazardous or unpleasant smells can cause Sick Building Syndrome (www.raven-partners.de/la_smell) . Control over smells in a space will influence the experience of that space.
	Vision & Fine Movement -grasps objects between thumb and forefinger -points with finger to object -builds tower of two blocks -look at picture and pats page -Scribbles on any surface they can find (Health Department: 2007)	-screening from light -low intensity lighting	Teach/Learn	-Play Houses -darkened spaces -Play house					
	Hearing & Speech -knows and reacts immediately to name -says mommy and daddy -speaks 2-20 recognisable words -understands and obeys simple instructions -Attempts to sing -Points to own hair, nose, eyes, etc. -Nod and shake their heads to indicate yes or no (Health Department: 2007)	-child surveillance through transparency -noise room where sing-along songs play -open plan small space for playing	Growth & Development Support	-Shared Spaces -Scale: Window Height	Common areas: -kitchen -Intimate Eating -Living/play area (internal and external) -Sanitation -Low positioned windows	Touch -walls/floors -Greenery Hearing -sound reduction	(Author: 2008) -tiles -Water -rocks/stones -Insulation panels	location of wall relative to body -Reflect/ Absorb sound	-use of contrasts is used stimulating element -this develops the childs ability to differentiate
	Gross Motor -crawls -stands up against furniture -starts walking -Step off a low surface and still maintain balance (Health Department: 2007)	-low, dark spaces, small enough for child to crawl -provision of climbing wall & physically challenging elements within the building to develop child's motor co-ordination.	Food Shelter	-Eating Space - space for prams & cradles. - Capacious interior square where napping may take place.	Common areas: -kitchen -Dining area -Sleeping cubes where beds are carved into wall (idea of womb) -Spacious interior square	Sight -Reflection -Use of Colour Smell -Taste sensation is congruent with smell. It mainly depends on mouthfeel, temperature, and spiciness. It is also age-related. (www.cababstractsplus.org) Taste	-brick or concrete -Glass -brick or concrete -trees bark -wood/timber resin -Water -plants	-straight/bent light -Hard/soft light -wet/dry -smell and taste of water as vapour cools down space through ventilation -smell of trees in play area	-Light Spectrum - The infant uses smell and taste as a means of obtaining information outside it's body. Almost all objects that an infant encounters will go to the mouth as in the child's early stage, the smell and taste sensations are the most important.

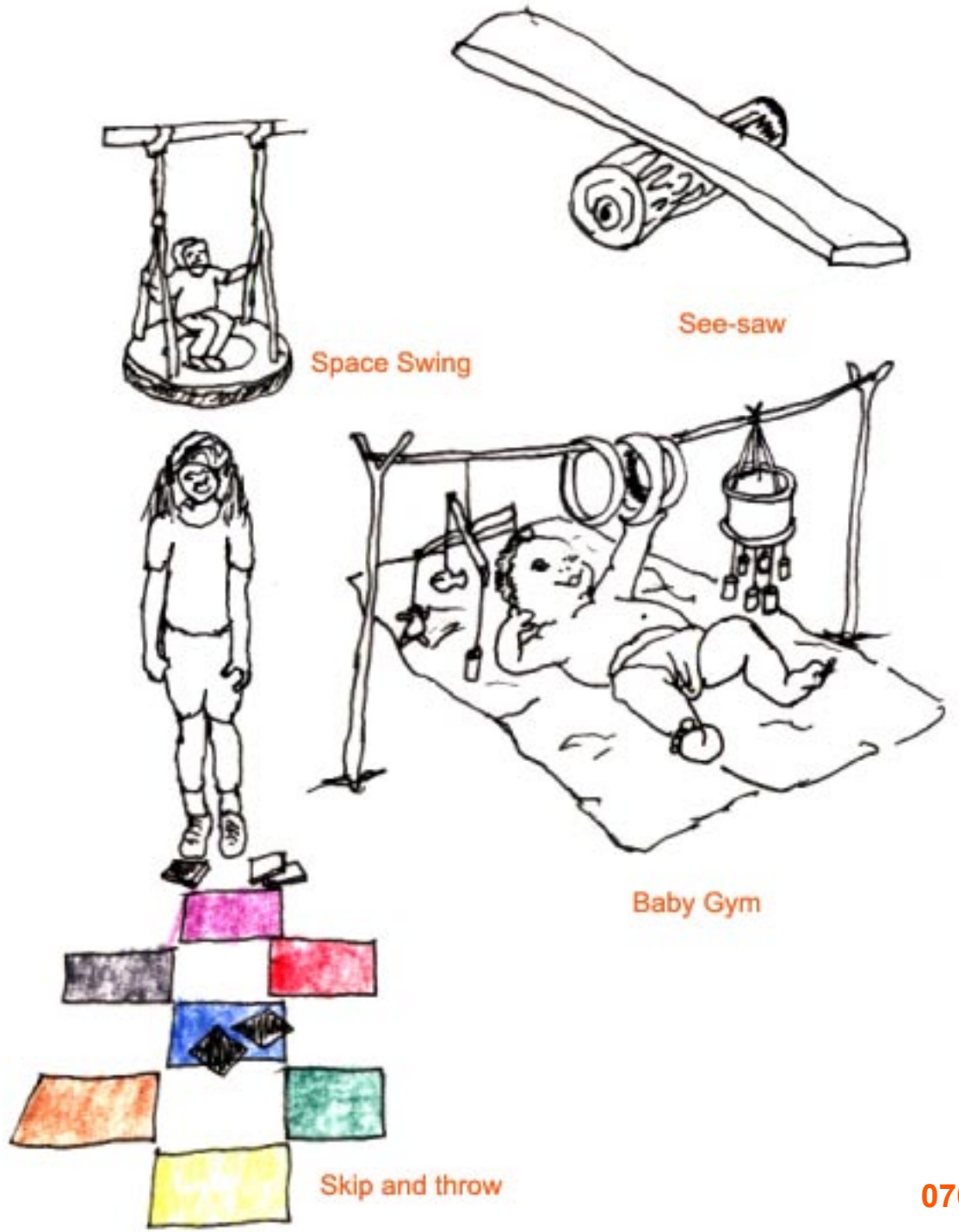
AGE	CHILD DEVELOPMENT CHART	ARCHITECTURAL RESPONSE	CHILD'S NEEDS	PROGRAM	SENSES	BUILDING COMPONENTS	MATERIALS	STIMULUS	OUTCOME
24 Months	Social Behaviour & Play -turns door handles -defends possessions -no idea yet of sharing -Can take of his/her clothes -Tries to tie shoe lace -can play alone and independently -initiate their own play -starts with imaginative play -imitate parent's actions -show affection -Enjoy exploring new spaces	-pay attention in detailing door handles, support structures to respond to movement of the body, i.e. Hand, foot - Multi-purpose space for contemplation or where child can be alone	Social interaction	-Enjoys playing alone	Therapy/ Rehabilitation Centre -Interpretive Centre	Touch	-Materials	-Conrete chairs -Kitchen Units	-Concrete -Marble	-Communication with the body. -Perception
						Hearing	-Sound Cubicle	-Insulation-. -Wall partitioning	-Harsh/Soft Sound. -Fast/Slow -Reflect/ Absorb	-Different sound pitches will influence the child's behaviour, i.e. Calm & irritable
						Sight	-Colourful spaces -Primary colours	-Plastered & painted walls	-colourful walls	-Primary colours stimulate cognitive process.
	Vision & Fine Movement -builds tower of 6-7 blocks -turns 2-3 pages at a time -hand preference becomes evident -feed themselves using a spoon. (Health Department: 2007)	-provide interactive wall with push-pull elements -child is provoked by moving elements and building needs to respond to this need by allowing panels dividing space to be moveable (Altman 1938: 25)	Play	-sensory studio	-Toy Library					
			Teach/Learn	-Toddlers like sharing spaces with other toddlers but will not share play things. -Love climbing objects. (Morrison 2007: 15)	-Open plan play area with objects that can be climbed	Smell	-smell and taste senses to create memory & give a further description of the space. (Altman 1938: 30)	-brick or concrete -trees bark -wood/timber resin -water -plants	-wet/dry -smell and taste of water as vapour cools down space through ventilation -smell of trees in play area	- The infant uses smell and taste as a means of obtaining information outside it's body.
						Taste				
	Hearing & Speech -talks to himself -understands 50 and more words -refers to self by name -Follow a series of two simple, related instructions -Identifies body parts by pointing, i.e. hair, nose (Health Department: 2007)	-contemplation space	Growth & Development	-Stimulating Environment	-Open plan play area (www.pbs.org)				- Door and window frame profiles to be detailed either to challenge and stimulate toddler.	-Similar to Santiago Calatrava's designs which expresses joints and movements of the body. Such components work harmoniously with the human body.
			Support	-Scale of furniture	-Multi-purpose furniture	Touch	-walls -greenery -Mild Steel window edge	-Steel profile of windows	-sound to provide toddlers with stimulus encouraging dancing, thereby developing the child's motor coordination	-The idea is to create a world for the toddlers to experience an architecture that magnifies the expressive dimensions of music and sound - Elizabeth Martin
		(Author: 2008)				Hearing	-sound reduction	-Insulation panels		
	Gross Motor -runs safely -kicks ball -throws small ball overhead -can jump -climbs on large objects -walks up and down stairs using alternative feet	-mini running track in building. -Interactive wall developing the child's sense of hand-eye co-ordination	Food	Eating/ Feeding Space	Common areas: -Kitchen -Intimate dining	Sight	-Reflection -Colour	-glass brick -Glass	-rainbow colours from natural light -Silhouettes	-Light spectrum. -Sillouettes of people passing will stimulate toddlers to turn around and look at the dark frame passing.
			Shelter	-Baby Rooms	-Colourful decorated rooms with a focus on themes.	Smell	-Taste sensation is congruent with smell. It mainly depends on mouthfeel, temperature, and spiciness. It is also age-related. (www.cababstractsplus.org)	-brick or concrete -trees bark -wood/timber resin -water -plants	-smell and taste of water as vapour cools down space through ventilation -smell of trees in play area	smell and taste sensations are the most important.
						Taste				

(Morrison 2007: 188)

AGE	CHILD DEVELOPMENT CHART	ARCHITECTURAL RESPONSE	CHILD'S NEEDS	PROGRAM	SENSES	BUILDING COMPONENTS	MATERIALS	STIMULUS	OUTCOME
3-5 Years	Social Behaviour & Play	-wash hand fountain. Water fountain spraying water from bottom upwards.	Social interaction	-Encouraged to play with other children	Touch	-Materials: durability	-Conrete chairs Public amenities	-Wood -Concrete -Steel	-The changes of material stimulates the child's senses -i.e. rough to smooth, cold to hot, etc.
	-Eats with fork and spoon -Washes hands -can easily place small objects in small opening -has longer attention span -acts out social encounters through play activities -imitates adults and play mates -shows affection for farmiliar play mates (Health Department: 2007)			-Public/ Private Interactive space	Hearing	-materials: how sound reacts to objects	-Therapeutic sound (water)	-High/Low Sound -Therapeutic/ non-therapeutic sound	"Sound is invisible but has the power to change the character of the space we occupy." (Julia Schulz-Dornburg)
	(Health Dept.: 2007)		Play	-Participate in and learn rules of sporting activities -Reading - Chores such as picking up his/her toys and cleaning up his/her room.	Sight	-Colourful spaces & themes.	-Plastered and painted	-colourful walls	
	Vision & Fine Movement	-Interactive wall. This is for purposes of painting on. The cubes in the wall can be pushed inwardly and be pulled outwards.	Teach/Learn	-Safety & security -Space for physical activity -Encourage creative play	Smell	-Links spaces & experiences tin the Recreational Centre.	-trees bark -wood/timber -water -plants	-smell and taste of water as vapour cools down space through ventilation	-Stimulates the creative ability of toddlers.
	-builds tower of 9 cubes -cuts with scissors -matches 2 or 3 primary colours -screws and unscrews jar lids, nuts and bolts -makes mechanical toys work (Health department: 2007)			-Open plan play area with objects that can be climbed.	Taste				- Smells and tastes capture memories based in time and experience
		(Health Dept.: 2007)	Growth & Development	-Stimulating Environment -Visiting local areas of interest					
				-Routes or paths connecting the stimulus centre to other places of interest in and around		Play Houses and Nooks (Author: 2008)			
	Hearing & Speech	-Learning Library -Story Library	Support	-Limit TV -Allow time for emotional support and affection	Touch	-Paving -Textures	-Brick paving -Timber -Sand	- By touching and feeling textures of objects, the toddler gets the essence of the material properties (Miller 2006: 9)	-The toddler learns the feel, quality and value of the material as compared to others.
	-gives full name, age -asks many questions -listens eagerly to stories demand over/over (Health department: 2007)			-Therapy Centre	Hearing	-sound rehabilitation studio.	-Insulation panels -Sound tunnel	-Sound to be used for rehabilitation and therapy.	-The spatial formation of music and sound will be used to evoke the emotions of the user/occupier of the space.
	(Health Dept.: 2007)	(Author: 2008)	Food	-requires a variety of foods -Child must eat by themselves - Mealtimes should be enjoyable and pleasant	Sight	-Visual manipulation & perception	-concrete & glass	-Shadows and lighting -Spatial organization	- One can manipulate spaces visually using lighting and shadows to induce certain reactions from the body. It is this stimulus that will conjure emotions from the toddler' that will create a desired effect on the toddler, be it healing or rehabilitation or cognitive response.
	Gross Motor	-Internal/ External play area.		Common areas: -kitchen -Dining	Smell	"Architecture can promote potent memories, which in turn can improve an individual's experience in a place or space. (Miller 2006: 9)	-brick or concrete -trees bark -wood/timber resin -water -plants -fabric	-smell and taste quantify and qualify the experience of the space. (www.overviewofthefivesenses.com)	
	-can walk on tiptoe -jumps from steps two feet together -rides a tricycle with agility -can walk upstairs with alternating feet (Health Department: 2007)		Shelter	-Toddler Rooms/ Sleeping facilities	Taste				
				-Colourful decorated rooms with a focus on themes -Climbing stairs -Multi-purpose furniture					

AGE	CHILD DEVELOPMENT CHART	ARCHITECTURAL RESPONSE	CHILD'S NEEDS	PROGRAM	SENSES	BUILDING COMPONENTS	MATERIALS	STIMULUS	OUTCOME
6-9 years	 (Author: 2008) -cooperative & competitive -the child may believe that objects have feelings -child begins to measure his/her performance by grades & sports results. -Idea of home is very important and becomes the foundation for the child to become independent (Health Department: 2007)	-Open plan play area which is in close contact with the street or public -Indoor and outdoor sports facilities. (www.parenting.ivillage.com)	Social interaction -Child needs to interact with adults, i.e. parents, teacher	-Public/ Private Interactive space - Shared play area	Touch	-materials: lighter, movable	-Sensitive & lightweight - Multi-purpose	-Wood -Steel -Plastic	-The furniture needs to be able to be rearranged and must also accomodate a change in function.
					Hearing	-Architecture of sound	-Ceilings to project sound.	-Plaster -Laminated timber	-"Sound exists as a phenomenal presence involved in and determining the shape of the world." (Brendan la Belle) Children's world is shaped by what they hear.
Social Behaviour & Play			Play -Provide activities related to child's particular interest	-Theatre with performance stage -Telephone tubes -TV room	Sight	-"...Our eyes are meant to see forms in light..." (Le Corbusier)	-Lightweight stainless steel panels	-Stainless Steel	
 (Health Dept.: 2008)					Smell	-Capturing the memory and experience of the space.	-Nature	-Four seasons of the year	-Panels for projecting, deflecting & reflecting light
Vision & Fine Movement	-draws peole, houses and trees with more detail -knows full name, age and address. (Health Department: 2007)	-Classrooms and sensory studios	Teach/Learn -Safe play environment - Enough space for activity -Involvement in sport	-Open plan play area with objects that can be climbed, skipped, skated or slid on. (www.howkidsdevelop.com)	Taste				
 (Health Dept.: 2008)	 (Author: 2008)					 (Author: 2008)			-Temperature as source of stimulus
Hearing & Speech	-able to recognize opposites -defines objects by their use -the child is able to understand the rules of conversation, is able to talk and listen -able to communicate well with others (Health Department: 2007)	-Landscaped Grandstand/ embankment	Growth & Development -Stimulating Environment		Touch	-Sensorial Material	-Moveable Building Blocks.	- Exploring the physical and psychological effects of touching objects.	-Stimulates the children to develop a sense of reality and fantasy.
			Support -Parental Support (foster parents)	-Classrooms, -Computer centre	Hearing	-Musical Architecture	-Sheets of stainless steel	-Physiological and psychological implications of sound.	-Density of music in relation to the movement of the body.
			Food -Activities in the kitchen should be supervised	-Therapy Centre: Communica-tion room	Sight	-Darkness inducing emotion	-Playhouse	-Moveable Timber/ Stainless steel screens.	-The dark is where their fantasies prevail.
Gross Motor	-can swim, jump rope, swing and skip -developed visual-motor coordination -catch bounced or thrown balls more easily (Health department: 2007)	-Water features, play equipment, interactive wall.	Shelter -Separate accomodation with performance stage	-Food Garden -Kitchenette	Smell Taste	-"Its kitchen had to offer the opportunity to cook fancy things, something girls of this age need to do."	-Brick -Concrete -Timber -other kitchen components	-The stimulus comes from the experience of cooking with components that are scaled & designed for the particular age group.	-This will develop the children's visual-motor coordination.

Chapter 4



Learning through Play

perceiving another." (Altman 1978: 16)

Learning through play

What is play?
When is work play and when is play work?
How do children in Kwa Thema play?
How can the children of Kwa Thema develop through play?
What are play things?

What is play?

"Play is an action we choose to do to entertain ourselves. It is a spontaneous reaction guided by instinct." (Morrison 2007: 6)

When is work, play and when is play, work?

It is important to differentiate between the two as the outcomes of these two activities are also different. If time is spent on teaching the child what to do, then it is work, rather than play. The child will only want to do the activity when it looks like fun and when he/she is in control. (Morrison 2007: 6)

076
Games providing stimulus for children (Morrison 2007: 41)

How do the children in Kwa Thema play?

The type of play we choose reflects what we are interested in. This, however, depends on the level of development and cultural background of the child. For example, Children in Kwa Thema play with inanimate objects due to the lack of natural elements such as trees and other plantations. The children therefore have resorted to their own creativity. Most games that the children of Kwa Thema play are group orientated, such as cycling, soccer, cricket and marbles. On a more individual basis the children make cars out of wire, climbing trees, water games, mud pies and make-belief.

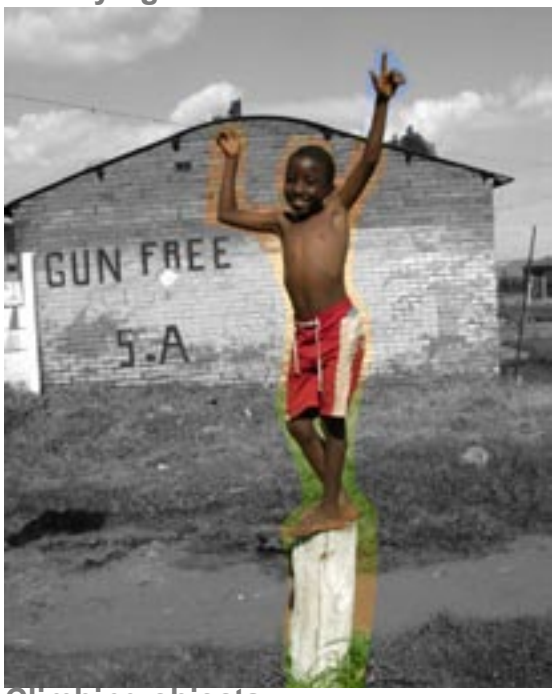
These games begin spontaneously. They are fun and interactive. Upon spending time in Kwa Thema, one may find that games are mostly played on the street, any open pieces of land and in the front gardens. Kwa Thema Central has large pieces of open land ear-marked for development, however these open pieces of land are sometimes high crime spots and are vulnerable to dumping from the public. This thesis hopes to stimulate some form of development on these open sites.



Soccer



Kite flying



Climbing objects



Tree Climbing



Volleyball

077
Different types of play in Kwa Thema
(Author: 2007-2008)


Chess


Exercising


Skipping


Cycling


Make-belief


Basketball


Racing with old tires


Dancing


Running

078
Different types of play
in Kwa Thema
(Author: 2007-2008)

Play and Play Things

Natural and artificial environments differ in the kinds of play things they offer to children. There is a belief that natural play things are far superior to artificial play things. In nature, we can find several play toys such as water, sand, clay and mud. Children are drawn to water. Robert Kates and Cindy Katz observed: “Water is a special part of the play of the world of the child.” From this, one may discern that water is an object of curiosity, exploration, appraisal and use. In Kwa Thema, one finds children playing in the rivers of water along the road edge, pretending to be on a journey to another part of this world. This is an experience that takes them beyond the borders of their small world and environment of the township. This may also be seen as an opportunity to escape from all negative elements that they may be facing. (Altman 1978: 18)

Children also love to imitate adults and recreate (make-belief) worlds of kitchens, nature and home situations so as to understand them. Children are creative and enjoy the process of making. In the same scenario of a rainy day, some children in Kwa Thema take advantage of the wet muddy surface and make “mud-pies” with it. This stimulates their minds and bodies in such a manner that it provides the platform from which they can learn more about themselves and others. (Altman 1978: 19)

Climbing Trees

Children love climbing trees. They take part in highly active postural acrobatics in order to use their muscles and feel the thrill of temporary disorientation. This is also an opportunity to interact with nature by coming into contact with the tree. This seems to be a regular activity in Kwa Thema amongst the children, even though there is serious lack of trees. Where there is one and is located next to a playground or gathering space, a child is bound to be found climbing it.



079
Boy climbing a tree in Kwa Thema.
(Author: 2008)

Sliding

Every modern playground for children has a slide. It seems that children in all parts of the world appear to enjoy rolling or sliding down a slope. Where a man-made surface is not available for this, children find themselves other means. When I was young and growing up in Tembisa, my friends and I used to take old cardboard boxes and use them as seating whilst sliding down a heap of soil. Apart from the trouble that I would get into with my mother who would have to wash my dirty clothes, that activity of sliding was fun, stimulating and encouraged social interactivity.



080
Sliding
(Morrison 2007: 41)

Nooks and playhouses

A child likes to get into small spaces such as corners and shelters their own size. This is where they feel in control and can free their imaginations. It is in the small dark spaces that children get up to mischief and explore. These spaces seem safe and secure, almost womblike. Children like these small spaces where the play of light and shadow is prominent. They find the images that are cast onto the surfaces intruiging. Infants tend to explore the shadow under the chair. In the past, I used to play games in such spaces, where I would crouch behind sofa's and created the roof with the cushions. The idea of the tree house is fascinating as the child experiences an adventure where he/she climbs up to a world that adults can't reach. (Altman 1978: 21)



Mimicry

Children are talented mimics. They learn to mimic the behaviour and sounds of animals and thus feel a closeness to them- an unsentimental intimacy with animate nature. This is an experience foreign to city children. (Altman 1978: 22)

Outcomes of play activities

From the activities listed above, one may deduce that they are all, even if not intentional, programs of learning. It is in these games where children develop their motor coordination; language and social skills that will benefit them as adults. Children love them because it challenges and stimulates their abilities. Irrespective of Kwa Thema being a township that lacks many facilities that one may find in a suburb or highly developed area, it seems that the children of Kwa Thema and those all around the world from different cultural backgrounds play in similar ways. The way they play follows the same pattern of development, even though the levels of stimulation may vary. "A child's development is stimulated by a variety of play activities to help them learn skills required in being able to cope in our highly technical world." (Morrison 2007: 1)

Learning about the natural environment

"The natural environment, however varied and stimulating, does not in itself inspire the children to learn. Nature is an inarticulate teacher… Children have to be taught by adult human beings. They show a natural curiosity about the world." (Altman 1978: 25) Learning occurs at different levels. From observation, mimicry, to explicit teaching of useful knowledge in the field. Traditions are transferred from generation to generation. Certain views about nature and the way the world is viewed are passed though this lineage. Symbolisms obtain meaning and worth through this transfer of values. Childhood freedom may be signified by water. Observing the streets of Kwa Thema after rainfall, one will find cues of children finding adventure in the flow of water along the street edges and crevices. This is an opportunity for the mid to run wild in a world of fantacy-a world different from their own. This is the kind of intimacy that the children of Kwa Thema have with nature, when opportunity presents itself.

It seems that a natural setting can affect the perceptual and conceptual development of a child. As human beings, we are part of nature. When we embrace nature, we return to where we belong.

081
Nooks and Playhouses
(Morrison 2007: 188)

Children's home environment

Idea of Home
Home as a source of stimulation

When I think of home, what comes to mind is a place of rest, place of peace and contemplation. It is a safe and secure environment where my immediate needs can be met. It is also a place of interaction, family- a place where I belong. The home environment is also a source of stimulation.

The home environment remains an important setting in which the child's early social and cognitive development takes place. "Heredity nothing, environment everything" is a significant term coined by psychologists. This is to say that no matter what sort of family you originate from nor the genes that you possess, the environment in which you live and grow will ultimately determine who you become. The early social and physical environment that the home provides for the child has a marked impact on his later social and cognitive development. (Altman 1978: 35)

Parent as Direct Stimulator

A typical home in Kwa Thema will consist of two children and a single parent who heads the home. There are numerous situations in which one finds that a child may head a household while looking after one or two siblings.

The social environment at home has an impact on the child's cognitive and social development. "The amount, type, and timing of the social stimulation provided by the social agents in a child's home are important determinants of his later development (Clarke-Stewart 1978; Friedlander, Sterrit and Kirk 1975; Lewis 1976). There are two types of stimulation- direct and indirect. The direct stimulation is stimulation through toys, books and other physical objects. Indirect stimulation is where the social and physical environments are mediated by the action of another social agent or physical environment and is the catalyst for the amount and type of social stimulation.

The different types of social stimulation in infants is visual, auditory, tactile, kinesthetic stimulation and maternal responsiveness. Tactile and kinesthetic stimulation relate to infant cognitive development. Kinesthetic stimulation is stimulation via rocking and holding the infant in an upright or vertical position, which both have specific effects on the child. It also has the following functions: Social responsiveness, fine motor development, goal orientatedness, proble solving and object permanence (Altman 1978: 36). Tactile stimulation includes patting, stroking or caressing the child. Visual and auditory stimulation, also known as distance receptor stimulation, plays a major role in early development and relates to the infants social responsiveness and the amount of vocalization (Altman 1978: 36). It was concluded that the level (frequency and intensity of the mother's stimulation) and variety (richness and diversity of mother's input) of social stimulation was related to the infants development.

In Kwa Thema, I have found that communication between the child and the parent is quite rich-in cases where the parent is available. Culturally and traditionally, younger children have always been taught to have respect for their elders. This however, supports auditory stimulation. The visual stimulation which relates more to social responsiveness is in question. The environment in the township of Kwa Thema, in my opinion, rather affects the early development of children negatively. This is an environment of poverty, lack in facilities, dumping sites next to playgrounds, little or no greenery - all of which impacts on a child's cognitive and social behaviour. This may have an effect on the child's perception of life, which will contribute to the child's life as an adult.

Chapter 4

Site

Historical Background of the site

Kwa Thema is a black township approximately 45km east of Johannesburg which was a model for a future modern township.The designer, Douglas Calderwood wanted Kwa Thema to be an ideal social microcosm for urban black living. He envisaged to optimise levels of social services and wanted the houses to be appropriately sized.The houses are equally spaced so that the inhabitants may benefit from the land through fresh produce. Children would gain access to outdoor play spaces. This idea was however not implemented which ommitted many of the social proposals. As a result this caused spatial and social segregation. The green belts that were supposed to be areas of social interaction and nature conservation instead acted as a means of enhancing the segregation.

Streetscape

The street is a landscape for social interaction in the township. The thesis will study how the street can be integrated as an architectural element that will promote the mental and physical development of children. The borders in Kwa Thema enhance the idea of social interaction throught the transparency of fences. The thesis will apply some of these existing elements in enhancing children's development.

Landscape

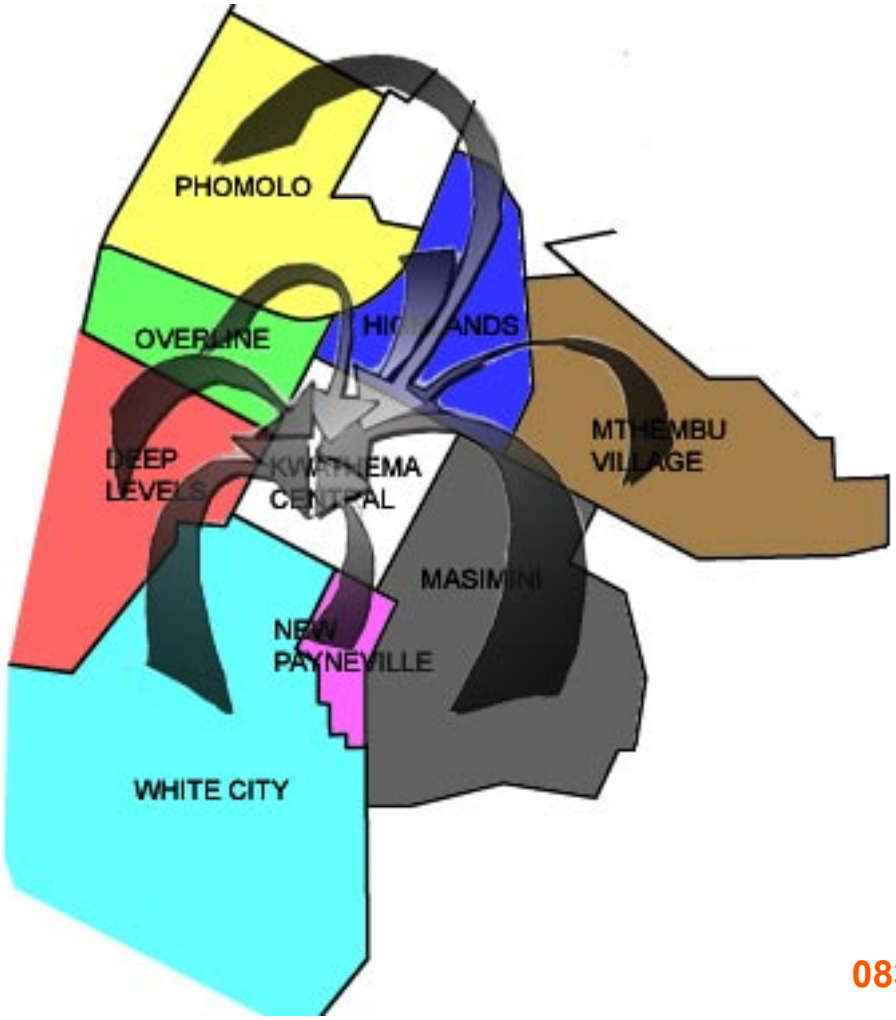
The landscape is an element that unites us all. The landscape in the township of Kwa Thema contains scars of the past, either physically or metaphorically. The thesis will bring healing to the land through landscaping interventions which will provide stimuli that may enhance children's mental and physical development.



082

The site is located at the entrance to Kwa Thema by Moshoeshoe Street adjacent to the public library and community hall. Job Maseko Street is well-known for its historical importance. It is derived from the story about a man, Job Maseko who single-handedly destroyed one of the German u-boats during the Second World War and thus the street was named after him.

Moshoeshoe Street is busy seasonally, particularly towards the end of each month when pensions are paid out. It is filled with retail and has the potential to increase in activity. I would like to explore this potential in my thesis. The thesis needs to stimulate activity around the site and to rehabilitate the landscape as the landscape is something that unites us all.



083

082
Map showing Kwa Thema in relation to Johannesburg CBD. (www.googlemaps.co.za)

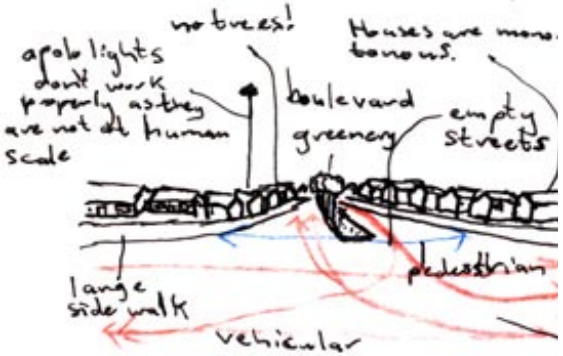
083
Map of Kwa Thema illustrating the idea of accessibility (Author: 2008)



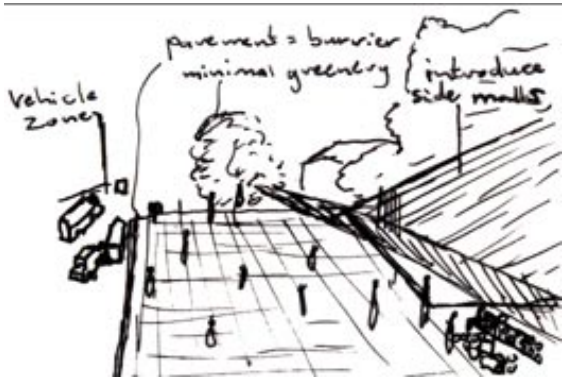
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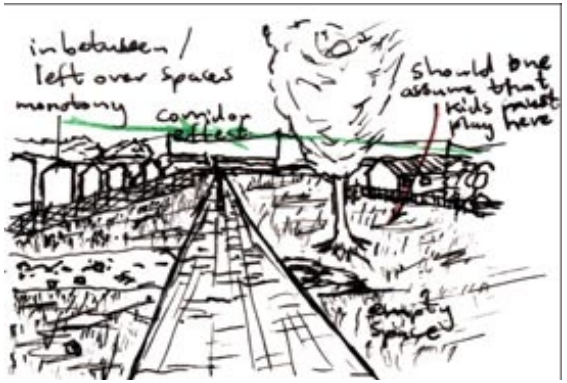
085



086



087



088

Positive Factors of the site

• Medium to small Informal market, but high retail presence adjacent to it.
• High visibility and transparency
• High sense of safety and security due to large numbers of people at certain times of the day.
• Historical and significant street connecting to it.
• Facilities available close to the site: Municipality, Petrol Station, Retail, Steers, Primary School, Public library and community hall.
• Well-defined street edge and large pavements
•High Accessibility to transport and other facilities

Negative factors of the site

- High vehicular traffic which can be dangerous for children
- Lack of hygiene in informal market
- Lack of trees and greenery
- No sense of ownership
- Dumping has begun due to lack of usage.
-Insufficient lighting
-Little or no maintenance of sidewalks

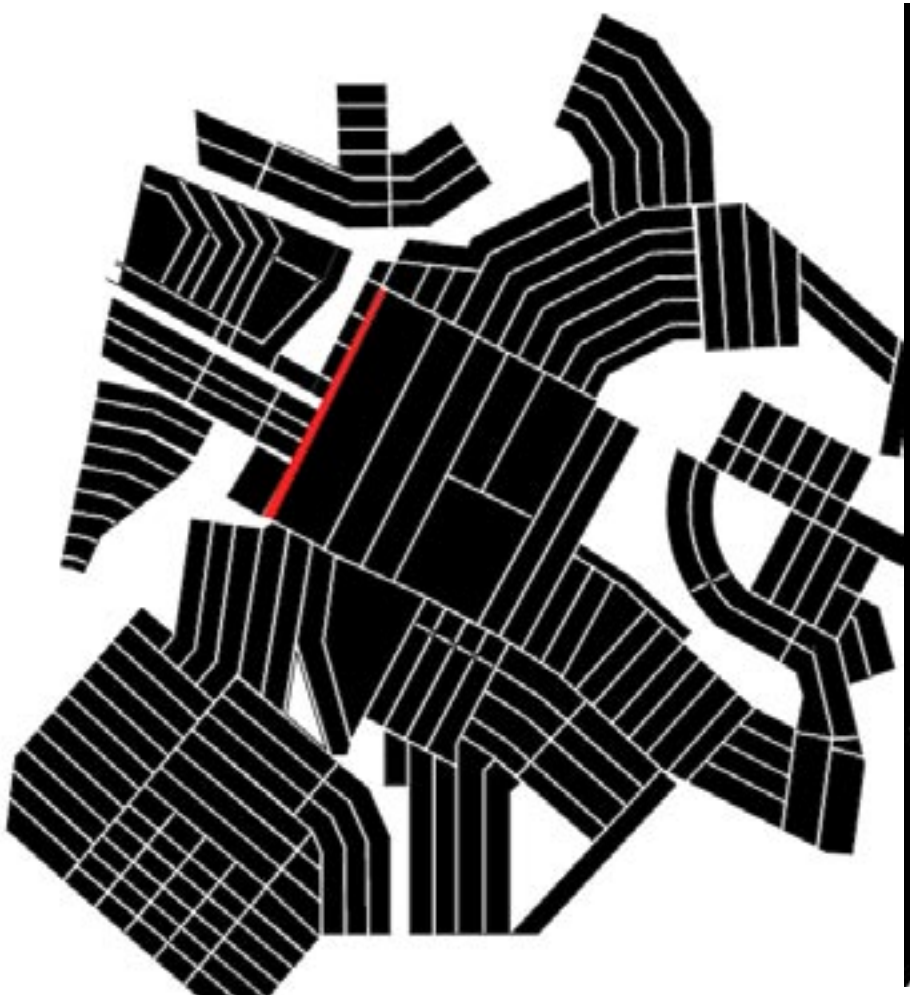
084
Sketch demonstrating vehicle domination in Kwa Thema (Author: 2008)

085
Lack of sidewalk maintenace (Author: 2008)

086
Busy intersection where Nkosi Street and Job Maseko Street meet. (Author: 2008)

087
Wide sidewalks as a social space. (Author: 2008)

088
Left-over space along Nkosi Street. (Author: 2008)





089
Inverted map indicating Nkosi Street.
(Author: 2008)

090
Map of Kwa Thema illustrating main streets.
(Author: 2008)



091
Site indicating taxi route (red) and pedestrian movement (yellow)
(Author: 2008)





092

092
Panoramic View of
Nkosi Street.
(Author: 2008)





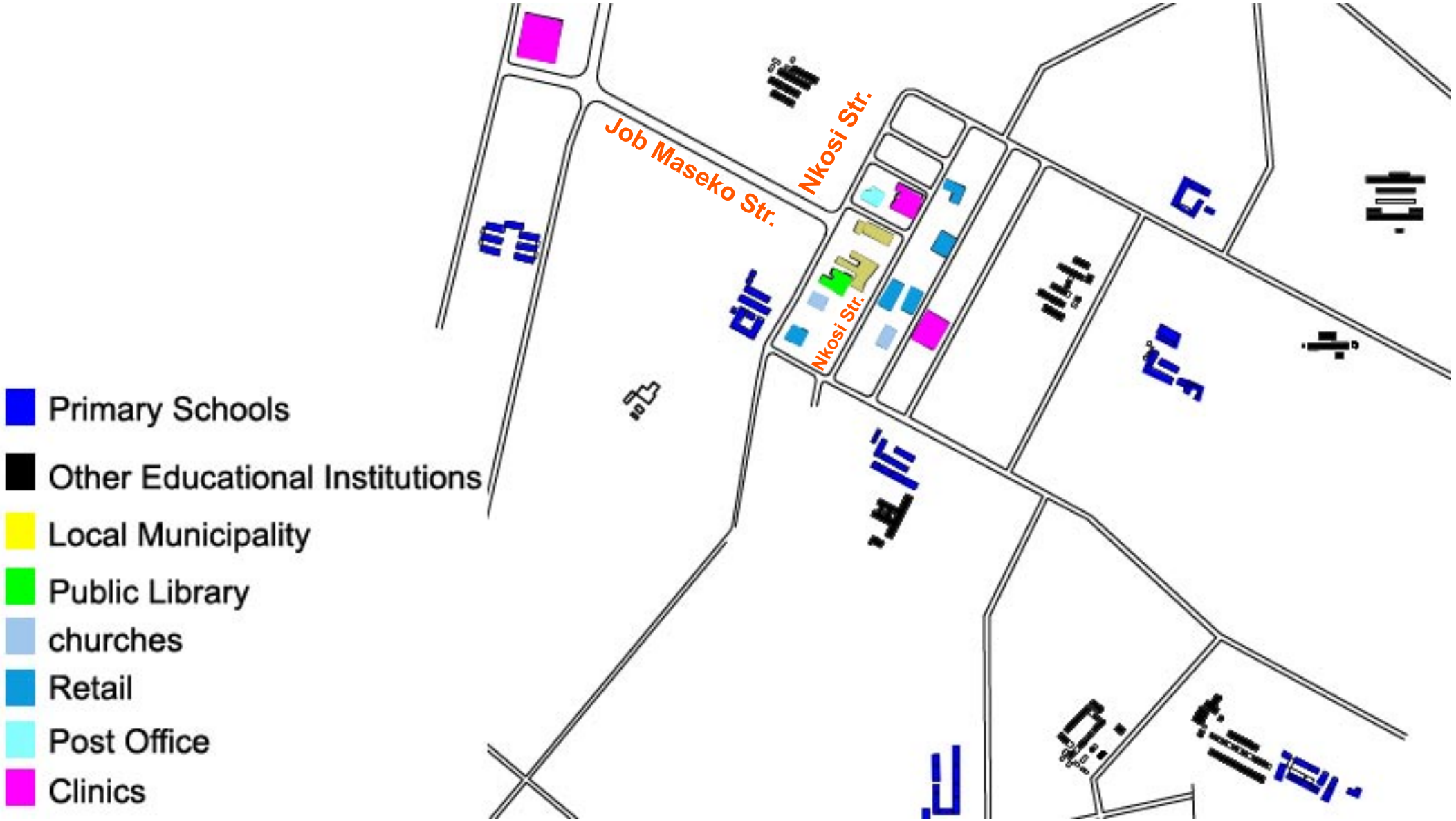
093

093
Panoramic View of
Moshoeshoe street
(Author: 2008)

Location



094
Map indicating position of the site.
(Author: 2008)



095

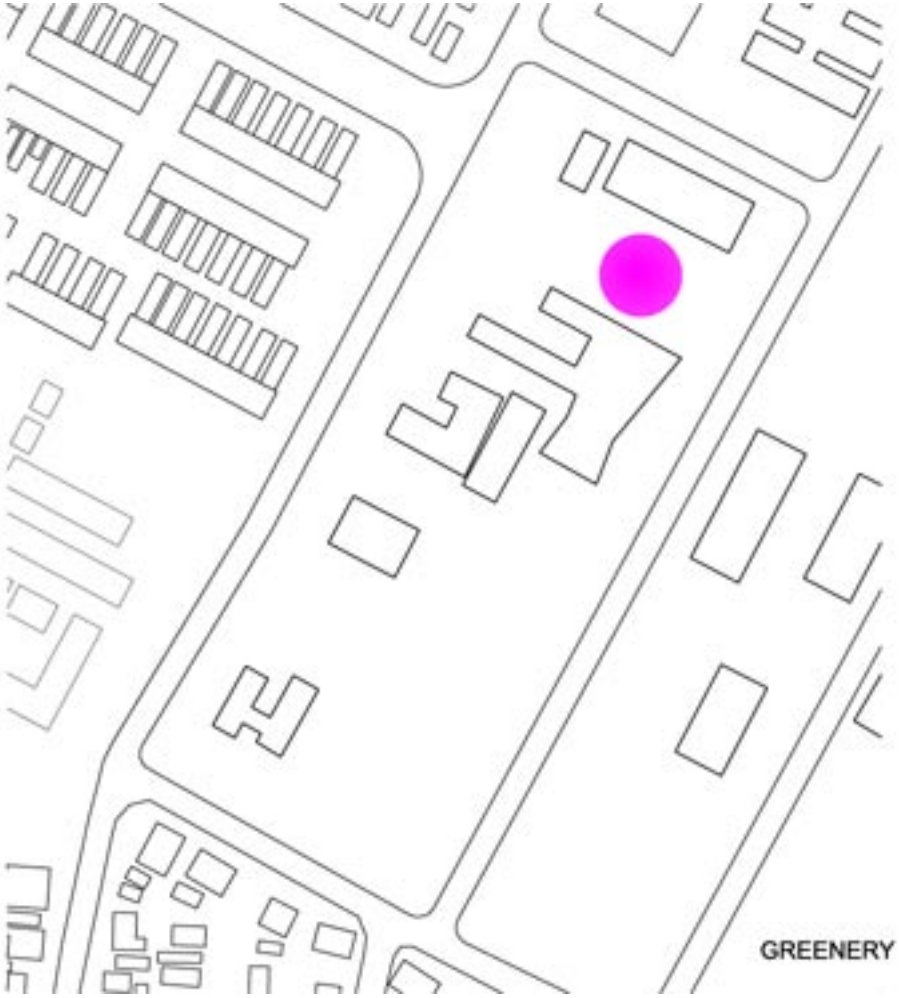
095
Mapping
(Author: 2008)





096
Mapping: High Activity zone
(Author: 2008)

097
Mapping: Gathering Spaces
(Author: 2008)





098
Mapping: greenery
(Author: 2008)

099
Mapping: Informal Markets
(Author: 2008)



A-Back of community hall



D-Wide sidewalk



G-Entrance to library



B-Southern perspective of



E-Entrance to municipality



H-View of church



C-Looking towards Job Maseko Street



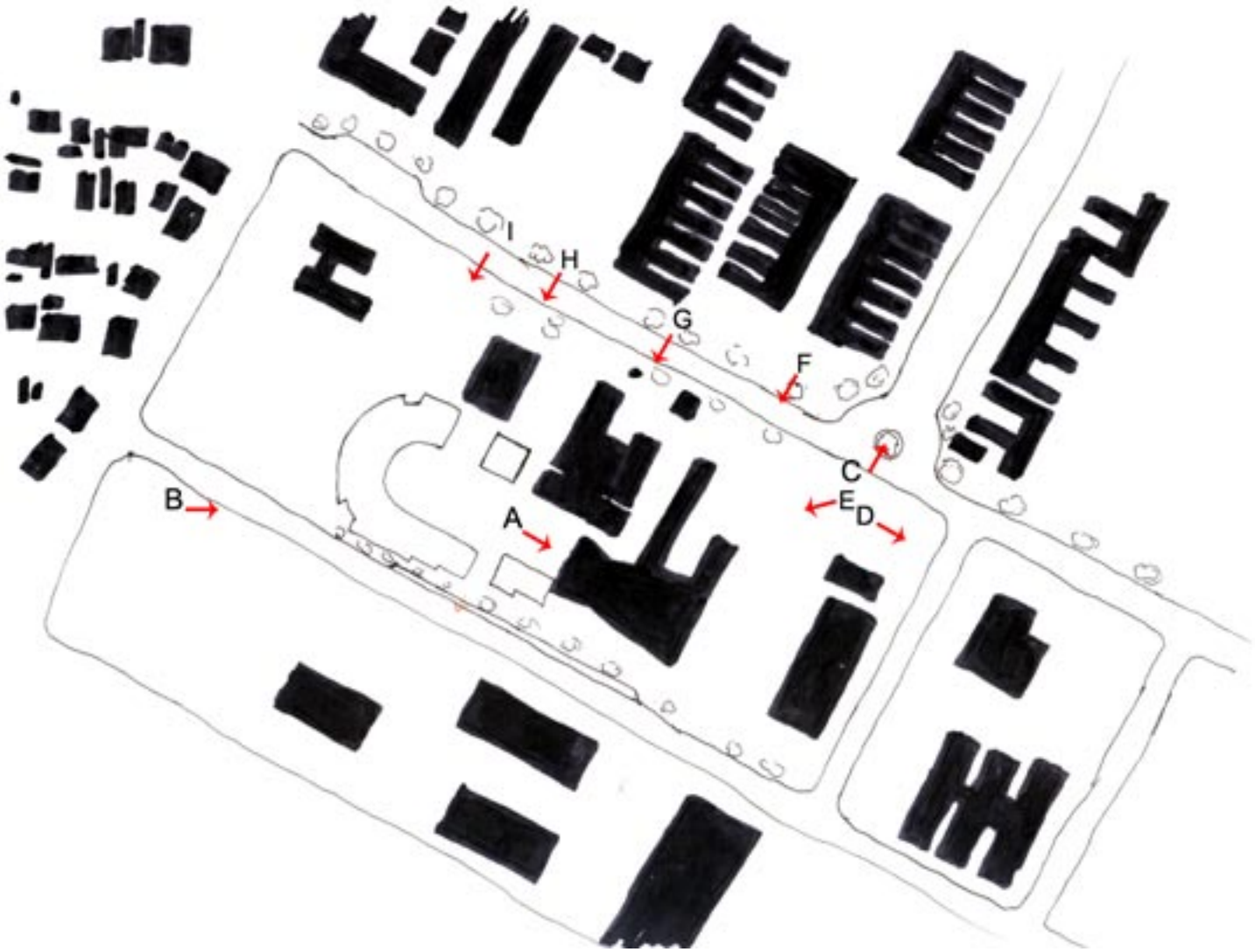
F-Side of community hall



I-Walking path

100
Photos of surrounding context
(Author: 2008)

Images of site and surrounding Context



101
Map highlighting points from which photos were taken. (Author: 2008)

Chapter 5

I went on a journey of discovery to try and obtain a greater understanding of the operations of a day care centre as it is the main vehicle of my thesis. This led me to perform a research about the SOS Childrens Village in Mamelodi. I was fascinated by the way in which the village is operated and have extracted some of the ways in which they deal with private and public life. The idea is to make my building a safe and secure environment for the children, yet allow interaction with the community, without institutionalizing it. Some of these concepts are established in the objectives and policies of a day care centre, and mostly in the design principles that have contributed to the outcome of the design.

Objectives and policies of a Day Care Centre

Objectives

The objective of a day care centre is to guide the development of children whose parents cannot give them all the care necessary from a few weeks of age, until they go to school at the age of six. Day care centres take children from 1-6 years old. This helps to facilitate children from early childhood to the stage where they will be ready for formal education at the age of six (Wright 1938: 10).



102

Policies

-Light open-air classrooms.
-Physical activity of all kinds and practical work as opposed to book work for half the time that the children are at school.
-The assembly hall and library should be given dominance:

Assembly hall: The best way to prepare children for being intelligent adults is to interest them in some of the pursuits of intelligent adults. The school hall or assembly hall becomes an important feature in education (Wright 1938: 12). In Kwa Thema, the community hall will work mainly for this function. The children will be able to make use of it daily as a place where all the children can meet for formal address, or even be used for nursery school plays. For this purpose, the assembly hall should be equipped for music, drama, cinema and radio. The community hall in Kwa Thema also

Design Development

works as a self-contained unit capable of serving the local community, not only the children. One may also proposing that the community hall be renovated in such a way that it would be able to cater for indoor sports activities such as indoor soccer, basketball, etc. and a gym which will only operate after hours. This is due to the fact that poor national standards of physique should now be of public concern. The gym would create a platform for dealing with such concerns in the township giving older children extra-mural activities, whilst bringing in revenue for the recreational centre as a whole.

Existing Public and new toy library:
The libraries are intended to be used as reading and play rooms rather than book and toy stores. This is to encourage the children to make use of them. The libraries cater for both kindergarten children and children in the community up to the age of thirteen. In my thesis, the idea of school as a social, cultural and recreational centre for all the local community is to be highlighted (Wright 1938: 14).

102
Garden play in a nursery school in Chelsea
(Wright 1938: 14)







Principles on playrooms and daily activities:

-Looser groupings of the units of buildings, with playrooms, rather than classrooms capable of being thrown almost entirely open.
-Playrooms must be on the ground floor.
-Book-learning at desks should be considered less important than before.
-Active work should be incorporated, such as handcrafts, drawing, gardening, science (mix of mud and water), domestic training (children should be given chores and responsibilities).

Movable and multi-purpose furniture:

- Light chairs and tables.
- Attention is to be given to form, design and colour in school surroundings.
-The buildings should be light, in reality and effect and easily altered or extended.
-The ideal kindergarten is one that will be efficient for 30-40 years; be proportionally cheaper to erect and easier to remove; have high demolition value and cost little to nothing for maintenance.
-Offices and staffrooms can be located on the first floor, however, in Kwa Thema, this would not be necessary as it is in an urban setting and should also be on the ground.

Site Requirements

Easy Access:

-Nursery schools should be placed within easy walking distance for the children who attend.
-They must be more closely spaced than other schools and must be smaller in size.
-A moderate nearby site is better than a good distant one (Wright 1938: 20).

Separation

-A nursery school must be placed away from traffic and noise.
-Children shouldn't have to cross main or secondary traffic routes on their way to school. This sort of site may, however, not be readily available in existing urban areas (Wright 1938: 21).
• Currently in Kwa Thema nursery schools are scattered and mostly run in private houses of the residents.

Space:

-A very generous amount of space should be allowed around a nursery school.
-Almost any piece of ground, provided it's large enough, can be made into an exciting garden for young children, especially where there is one or two trees existing.
-A gross site of 9 square meters per child should be the minimum space for a 90-110 group school (Wright 1938: 21).
• Nursery schools in Kwa Thema lack space. Sometimes the nursery

103
Open-air playrooms at a private Nursery School at Dulwich (Wright 1938: 19)

104
Nursery school playroom in Kwa Thema. (Author: 2008)

105
Nursery school playroom at the SOS Children's Village in mamelodi. (Author: 2008)

schools are run from four-roomed houses, which get extended over time, however the gross size of the site remains the same. This in turn eliminates the external play spaces in the yard, which is where most activities in a kindergarten should occur. The sizes of the yards are not large enough to accomodate the proper services of an efficient kindergarten with elements that provide a varying range of stimulus.

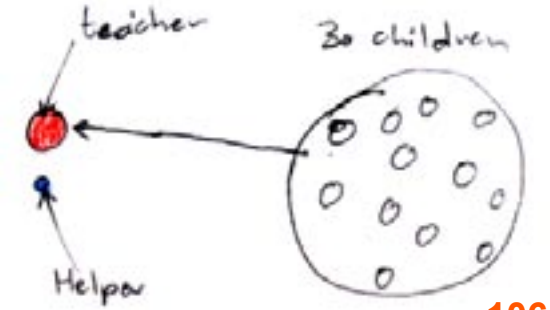
Sizes and Groups

Kindergartens should not be too large in size. The maximum number of children from 1-6 years of age that should be take into a kindergarten is 180, which allows six groups of 30 children.

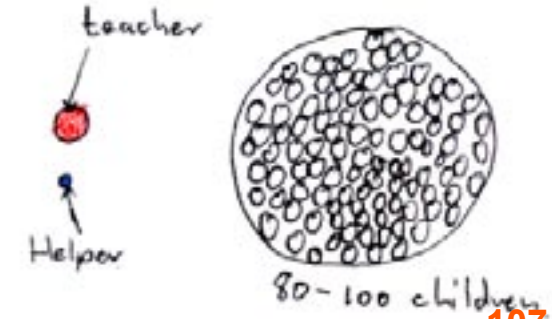
Why 30 children per group?

The average of 30 children per group with one teacher and a helper allows the children to have a more intimate relationship with the teacher. Helpers may be volunteers, student girls from the age of 16, who may be interested in undergoing nursing training.

Classes should be changed from time to time. This allows variety in the size of playrooms. Children must also be given the opportunity to sort themselves, spontaneously or by suggestion, into smaller groups or families for various games of mixed age (Wright 1938: 21). One must also be weary that often the various age groups may need to be separated according to ages, depending on which games are being played. You may refer to child milestone charts to check which age groups are able to share and play with one another. It might also be necessary to separate some of the younger children for extra sleep or while others are being told a story. This is where an expandable playroom will be at an advantage - a section of the playroom may be separated by folding doors.



106



107

View on Kwa Thema's kindergartens?

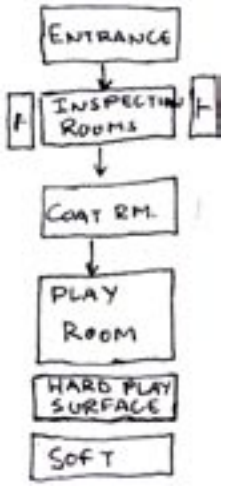
Without necessarily badly classifying the kindergartens in Kwa Thema, the ones that I have come across seemed to be too small to be able to successfully accommodate the large numbers of children. Just this, on its own, tells me that there is a serious need for more kindergartens, which take principles of this type of service into consideration. The kindergartens usually cater for more than 80 children with their ages ranging from 2-7 years. The children are looked after by a single teacher, who usually is the owner of the kindergarten, accompanied by two helpers and one kitchen staffmember. Occassionally, the owner's children may assist when they return from school. As a result of such ratios between the teacher and the children, there is a lack of intimacy in the way they relate to one another.

All the rooms of the nursery schools are usually on the ground floor. The lack of space inhibits creativity and activity. Inspite of all of these factors that face these kindergartens, the teachers should be commended in their creative efforts to provide the children with as much stimulus as possible. The kindergartens in Kwa Thema have attempted to make use of what they have and have become creative in the way they go about performing their activities.

106
Situation where teacher should handle a maximum of 30 children per playroom. (Author: 2008)

107
Situation found at nursery schools in Kwa Thema where teacher handles more than 80 children at a time. (Author: 2008)

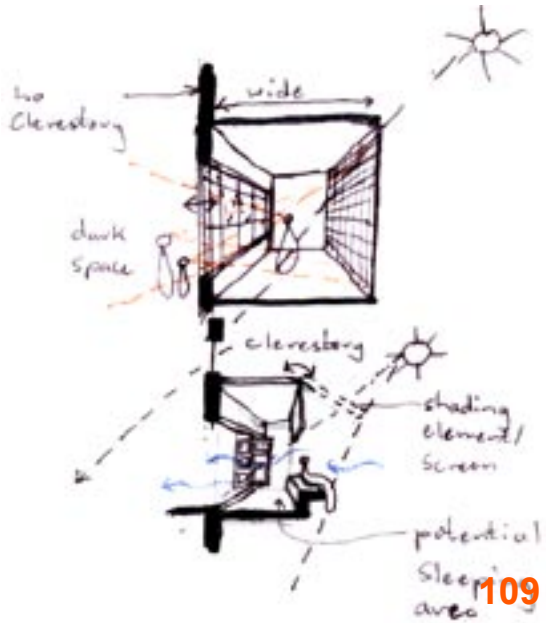
Design Parameters



108

Circulation

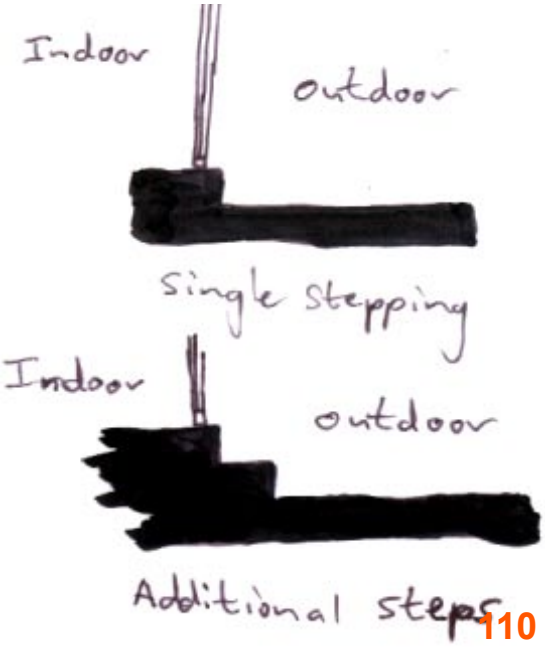
-Separate entrances could be introduced for the 1-3 year olds, which is separate from the 4-6 year olds.
-Direct circulation from entrance, through inspection rooms, coat rooms and playrooms. It is important to have inspection rooms due to the fact that some children may have to be washed or bathed before entering the playroom. This is especially important in my thesis as some of the children will be coming from broken homes, perhaps suffer neglect or abuse and will need inspection and washing facilities.
-Bathrooms should also be immediately adjacent to the inspection rooms (Wright 1938: 23).



109

Corridors

-Must be atleast 1800mm wide.
-If the corridors contain coatrooms, they must be atleast 3000mm wide. This allows for easy circulation. The passages or corridors must be made interesting through the usage of colour or a theme of play. They must be designed to induce some sort of emotion in the children.
-Windows should be low enough for the children to be able to have a glimpse of the garden (Wright 1938: 23).
-The corridors should be made convertible into open verandahs for outdoor sleeping.



110

Stairs and ramps

-These should be avoided, except to give access to staffrooms on an upper floor. It's critically important that the children's accommodation or play areas be on the ground floor in order for them to be immediately accessible to the outdoors.
-A single step from playrooms to outdoor play areas can be dangerous. The steps should be made more obvious by inserting two or three more steps or a ramp.

Outdoors

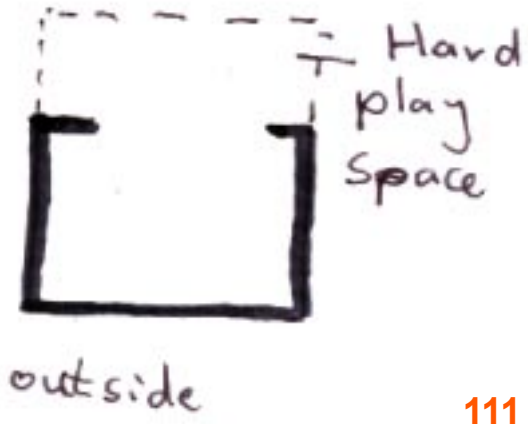
-Outdoor treatment must be made imaginatively, especially when confined.

108
Conceptual Sketch indicating the circulation route in a kindergarten. (Author: 2008)

109
Conceptual sketches describing how corridors should operate in a kindergarten. (Author: 2008)

110
Sketches dealing with change of level. (Author: 2008)

-The idea of the playground should be conceived as a garden.
-the outdoors space shouldn't be blatant, but must be full of suggestions, places to explore, mounds, hollows steps and trees.
-It is important that immediately outside the playrooms should be a hard play space, partially covered, large enough to allow a number of children to play when the grass is wet. The sandpit and jungle gym must be accessible from the hard play space. The floor finish of the hard play space can be concrete or paving. It needs to be as smooth as possible without being slippery. (Wright 1938: 23)
-A large area of grass play lawn should follow the hard play space. The lawn should be flat for most part of it, but it should undulate in some parts to provide the possibility of exploration and imagination. The garden should be designed in such a way as to cater for the children's needs.



111

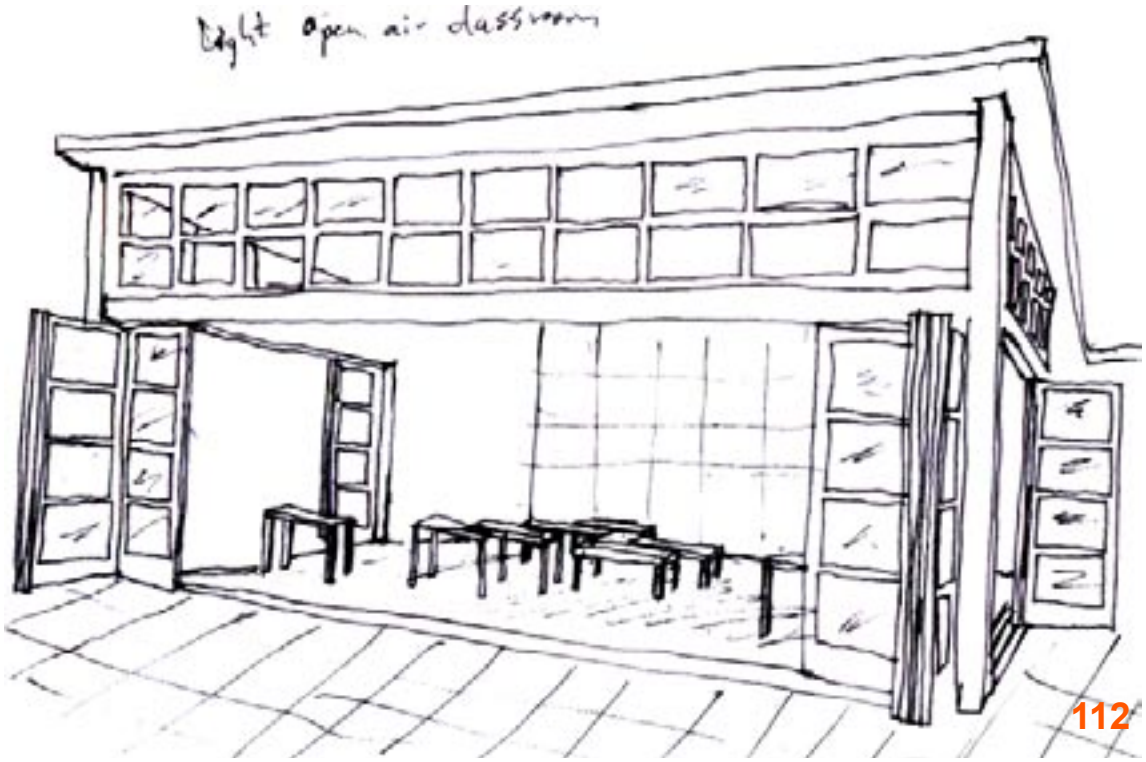
-A garden with a variety of flowers and trees which the children tend themselves is a must in every kindergarten.
-Where possible, the kindergarten should organize a mini-animal farm where animals such as pigeons and rabbits can be stored.

Outdoor features of a kindergarten

-Grass play lawn
-Hard play space
-Sand Pit
-Jungle Gym
-Paddling Pool and shower
-Pets
-Flowerbeds
-Bird Bath and bird house
-A few shallow steps
-Trees(one or two)
-Vegetable Plot

Playrooms

The word playroom is used instead of classroom as the main idea of the kindergarten is for children to learn through play. It is more an inside-outside space than a completely internalized room such as those found in most of the kindergartens in Kwa Thema. The idea of a rigid classroom



112

111
Sketch indicating transition from playroom to exterior space via a hard play space.
(Author: 2008)

112
Close-up of an open air classroom
(Author: 2008).

needs to be abandoned as it is incompatible with the principles of a kindergarten.

Spacial requirements are as follows:

-For a group of thirty children between the ages of 1 and 4, the minimum size of a playroom should be 75 square meters.
-For a group of thirty children that range between the ages of 4-6, the minimum size needs to be 56 square meters, that is to say that a group of forty will require 65 square meters of space.
-It is advisable to also have a smaller room next to the large playroom. This is where the 1-4 year olds can be separated in. In schools with two or more groups, one room should be made considerably larger than the others so that the two groups can occasionally be combined for community play. The large room may be fitted with folding doors. This room may act as a hall or circulation space between the other rooms with the capability of being thrown open to link up with the garden (Baiche 1999: 325).

Program and Brief

Programme

The programme for this thesis is for a day care centre for children from the age of 0-6 years of age, child wellness centre and toy library.

Brief

The brief is for a fun, innovative child centre, which provides treatment and rehabilitation facilities for children that have suffered abuse and post-traumatic stress disorder, though the centre must also allow normal children to attend and use its facilities. The centre, as a whole, is to cater for children from the age of 0-13.

The centre is not to be an institution but must be integrated into and be part of the day to day happenings in society. The safety and security of the children must always be considered in and around the premises facilities, the centre needs to be run as a centre for ordinary children, with added treatment and rehabilitation facilities for treating children who have experienced crises of abuse, which no other centre may have in Kwa Thema.

The aim of the centre is to instill confindence back into those children whose innocence may have been taken away by acts of abuse. The centre is a facility that should be deemed as the only light of hope to a normal life of the children. Children in the community should see it as a safe haven, a place where there's a feeling of peace and recollection.

The building should recognise, embrace and make use of the existing programs, which are mainly the public library, community hall, a church and a primary school adjacent to it. The project should not only be seen as a stimulating facility for children, but should be seen as an opportunity to rehabilitate the landscape and stimulate life on the street.

Interior:

Interior spaces should be adjustable and vary in size. The internal spaces should be able to be open totally to the exterior, which is where most activity will take place. The spaces must provide opportunities to engage in play and exploration through direct interaction with the building and its occupants with the theme of "Learning through Play" being prevailant throughout the design. Fittings and other objects are to relate to the scale of the users and must have multi-purpose usage. They therefore need to be light and robust enough for such purposes. All the design principles defined previously should apply to the interior of the building.

The building also needs to cater for functions being held by the community, i.e. adult school, training centre for sewing, expansion of computer centre (located in the existing library, lobola and weddings and should cater for sunday school services in conjunction with the adjacent church.

Exterior

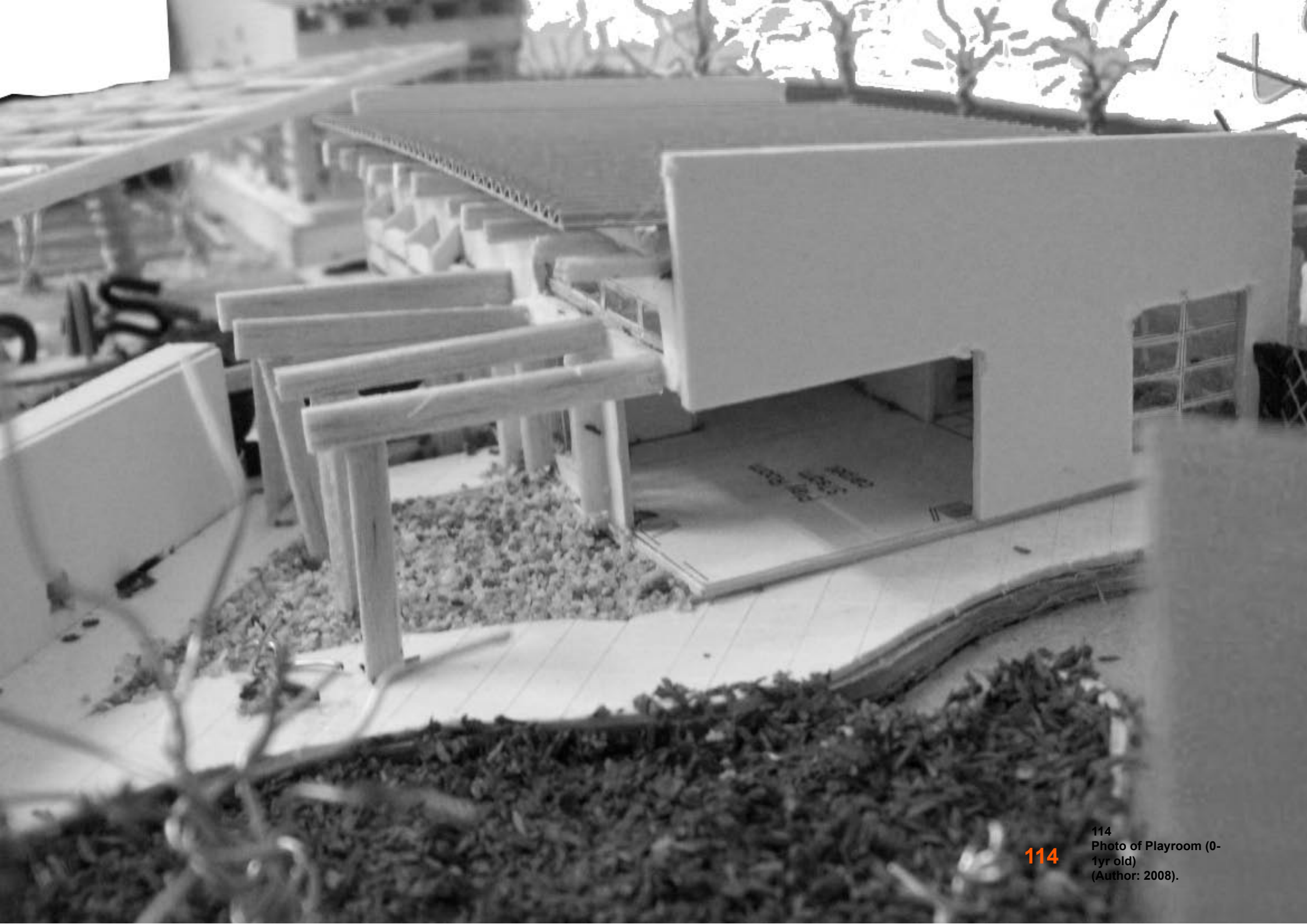
The exterior of the building(s) and its surroundings should be simple and congruent with the theme of play. Materials that communicate with the surrounding context, such as the red brick and corrugated sheeting, must be used. The building is to also engage with people passing and selling informally by providing shade and protection from the elements. Children need to be able to interact with the building via climbing walls, painted walls and colourful windows. It should be simple, yet cater for the everyday functional aspects of the program and provide opportunities of developing the users' motor, cognitive and social behaviour.

Some of the ideas, as per this essay, such as the idea of the street should be considered in the design as one may find it important to find ways in which the building responds to the street edge and to those who are just passing by. Notions of defensible space should also be prevailent throughout the design through the usage of varying materials that may contrast and complement each other, but must provoke the users in one way or another.

Final Design



113
Southeasr Perspective of site.
(Author: 2008).



114

114
Photo of Playroom (0-1yr old)
(Author: 2008).



115
Photo taken of model showing basketball court
(Author: 2008).



116
Photo of model showing views of the site.
(Author: 2008).

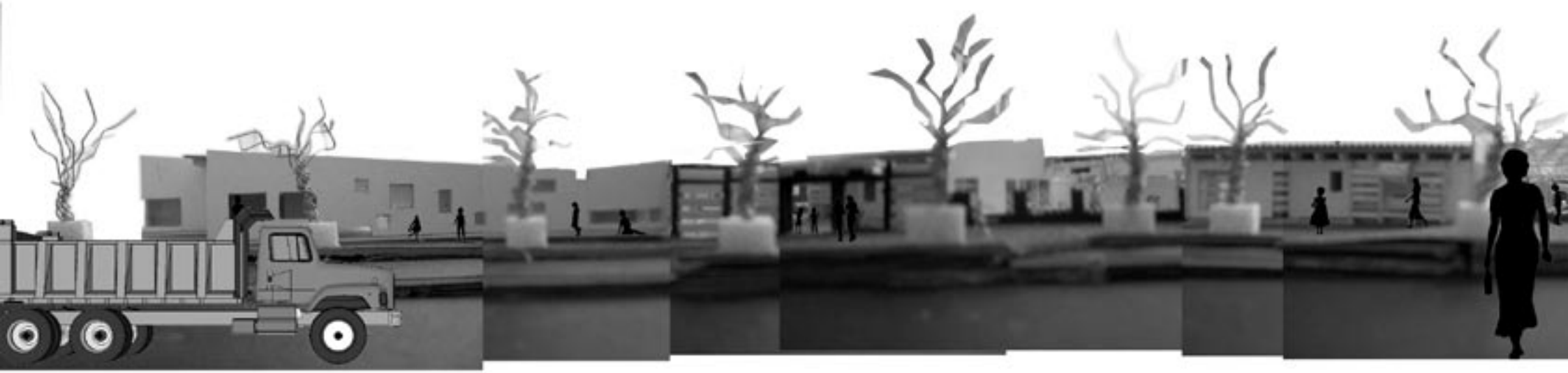


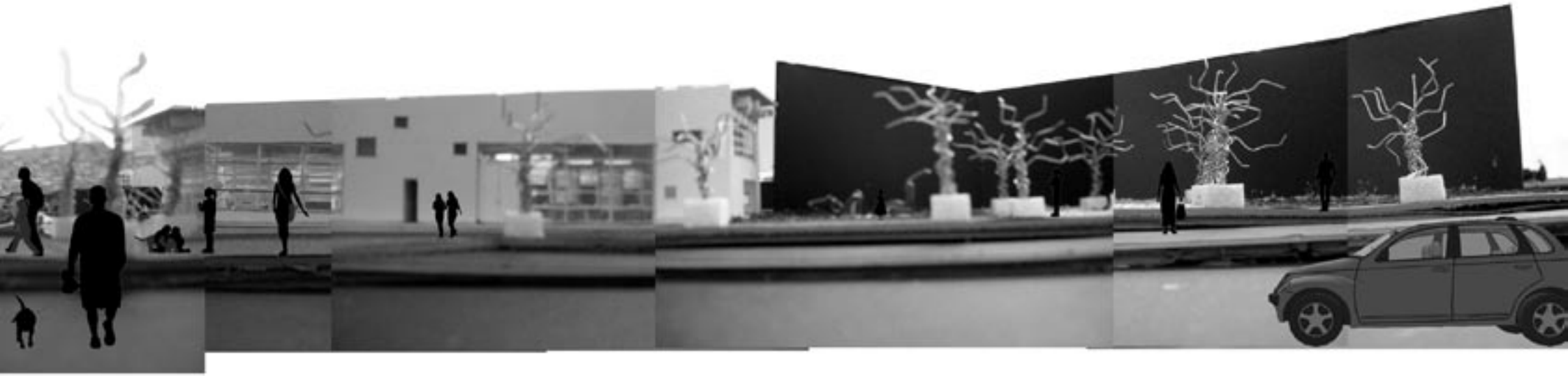
115
Photo taken of model showing views of site (Author: 2008).



118

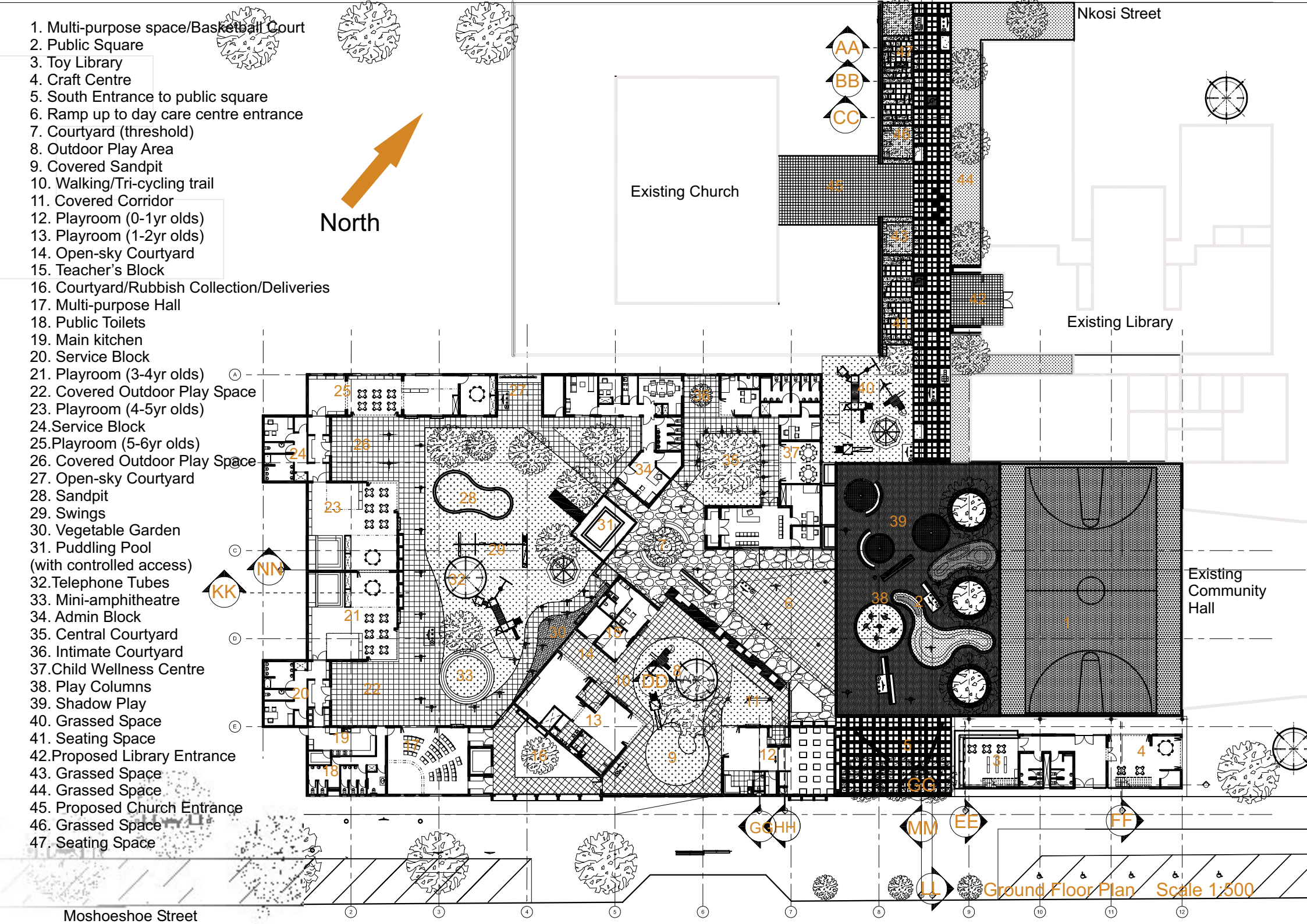
118
Photo of model showing views of the site.
(Author: 2008).

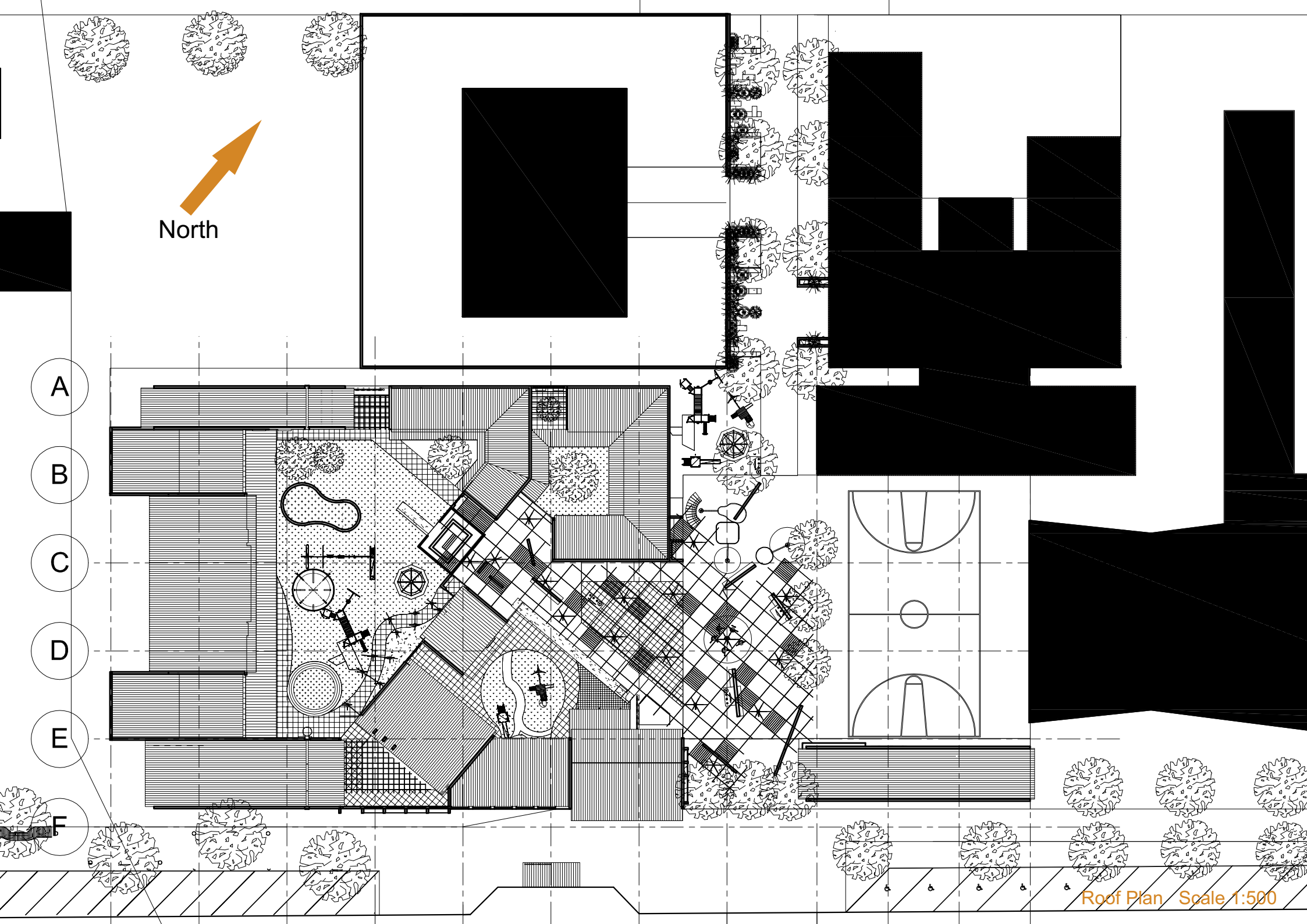




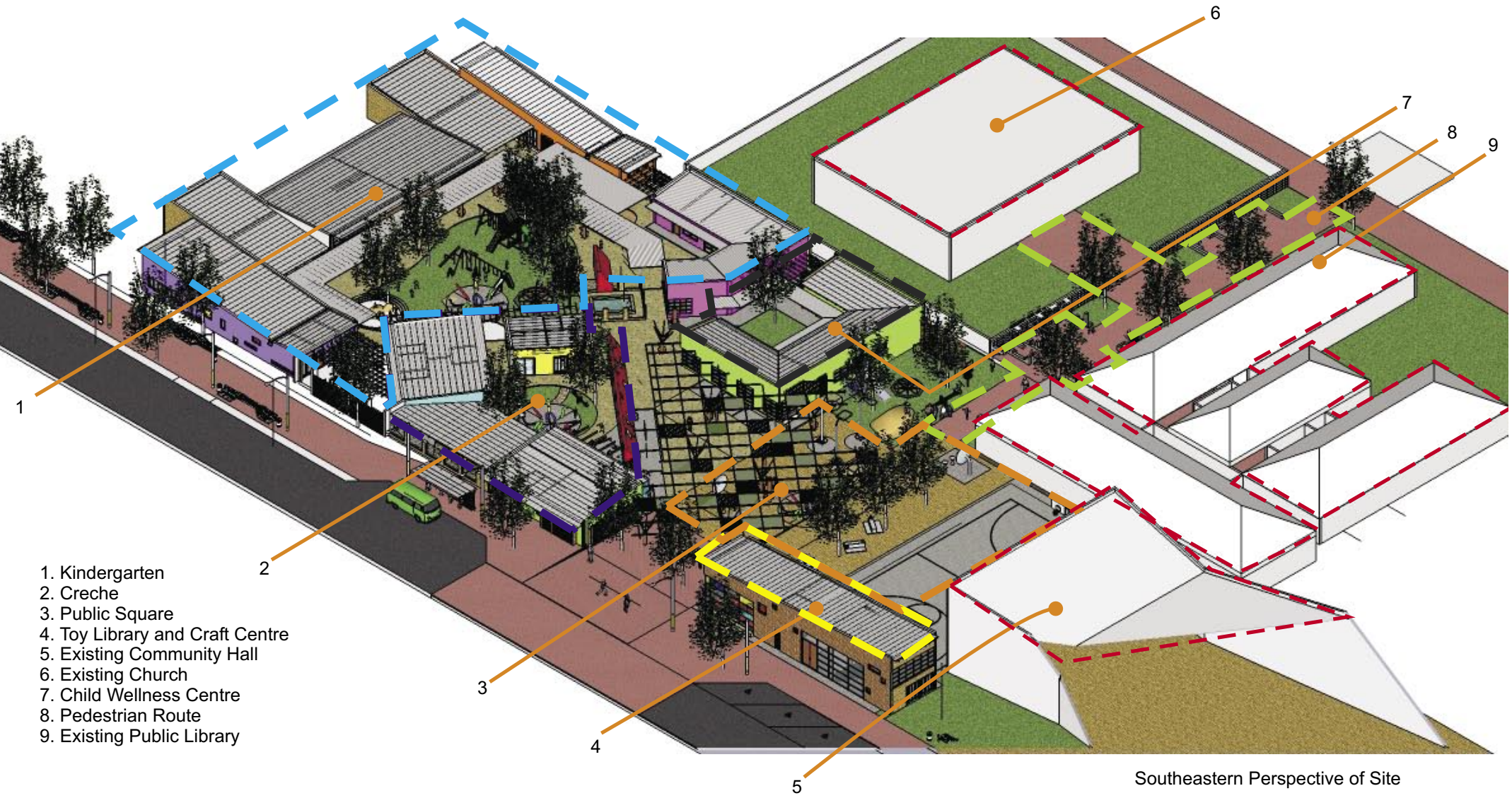
119
Photo of model showing southern elevation (Author: 2008).

1. Multi-purpose space/Basketball Court
2. Public Square
3. Toy Library
4. Craft Centre
5. South Entrance to public square
6. Ramp up to day care centre entrance
7. Courtyard (threshold)
8. Outdoor Play Area
9. Covered Sandpit
10. Walking/Tri-cycling trail
11. Covered Corridor
12. Playroom (0-1yr olds)
13. Playroom (1-2yr olds)
14. Open-sky Courtyard
15. Teacher's Block
16. Courtyard/Rubbish Collection/Deliveries
17. Multi-purpose Hall
18. Public Toilets
19. Main kitchen
20. Service Block
21. Playroom (3-4yr olds)
22. Covered Outdoor Play Space
23. Playroom (4-5yr olds)
24.Service Block
25.Playroom (5-6yr olds)
26. Covered Outdoor Play Space
27. Open-sky Courtyard
28. Sandpit
29. Swings
30. Vegetable Garden
31. Puddling Pool
(with controlled access)
32.Telephone Tubes
33. Mini-amphitheatre
34. Admin Block
35. Central Courtyard
36. Intimate Courtyard
37.Child Wellness Centre
38. Play Columns
39. Shadow Play
40. Grassed Space
41. Seating Space
42.Proposed Library Entrance
43. Grassed Space
44. Grassed Space
45. Proposed Church Entrance
46. Grassed Space
47. Seating Space



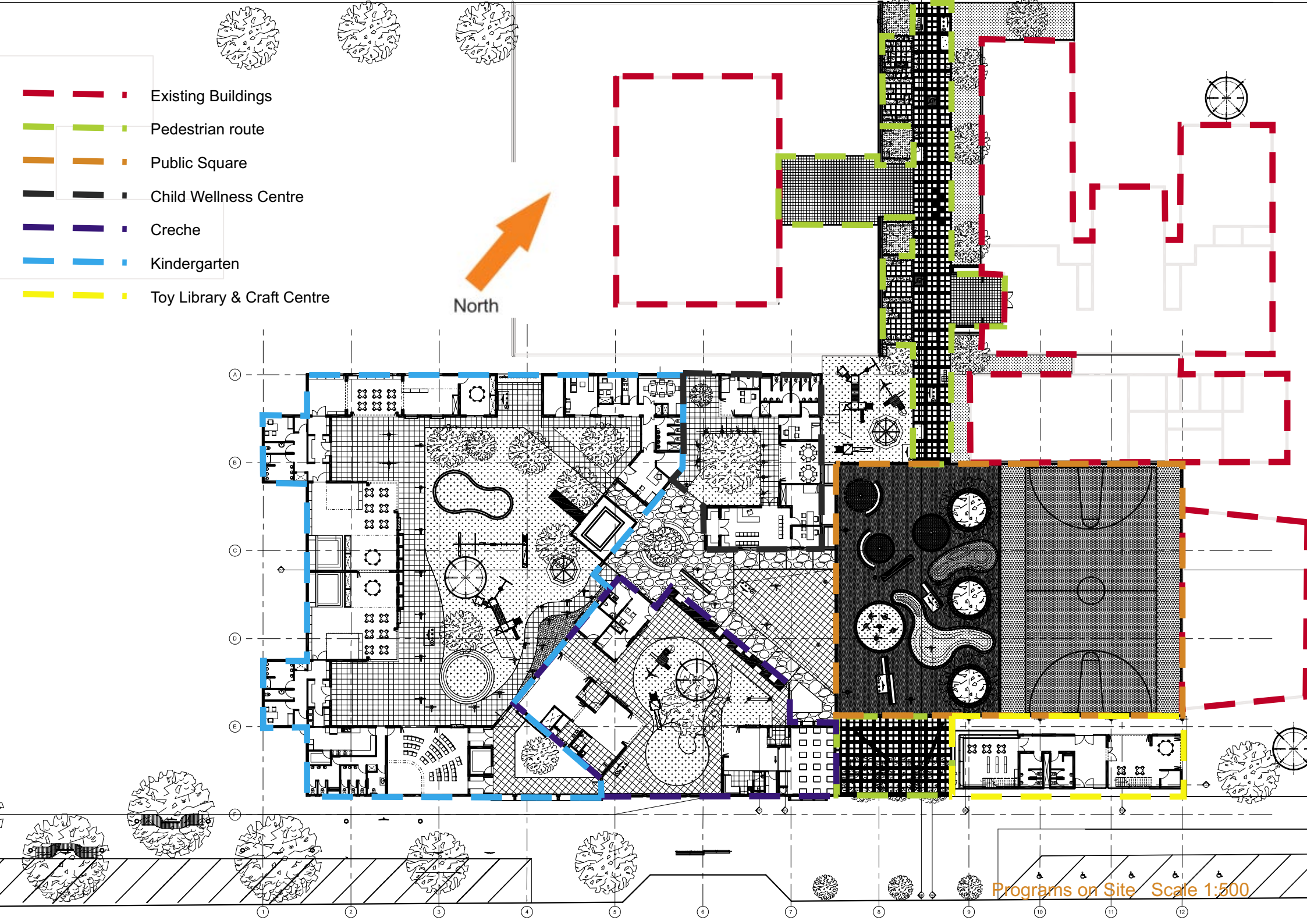


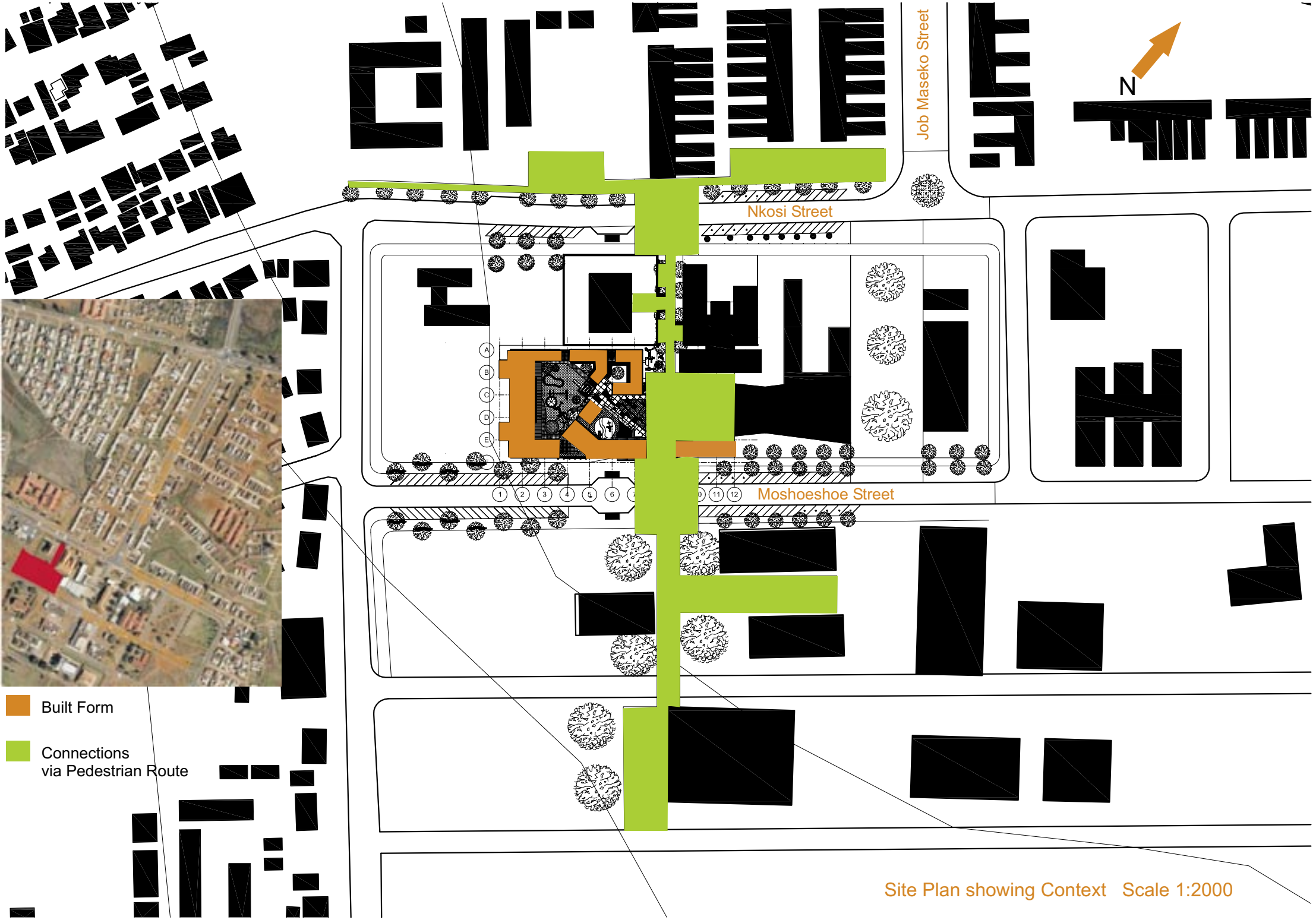
Roof Plan Scale 1:500



1. Kindergarten
2. Creche
3. Public Square
4. Toy Library and Craft Centre
5. Existing Community Hall
6. Existing Church
7. Child Wellness Centre
8. Pedestrian Route
9. Existing Public Library

Southeastern Perspective of Site


Existing Buildings
Pedestrian route
Public Square
Child Wellness Centre
Creche
Kindergarten
Toy Library & Craft Centre
North
Programs on Site Scale 1:500



Site Plan showing Context Scale 1:2000

Existing Buildings:

The existing buildings that surround the day care centre, child wellness centre and toy library help to enhance and support the new program. Both the old and new buildings relate to one another through the use of red brick as the main building material and by having a similar architectural language. The existing church, public library and community hall are connected with the new centre by a pedestrian route, which promotes more safety through passive surveillence.

Courtyards:

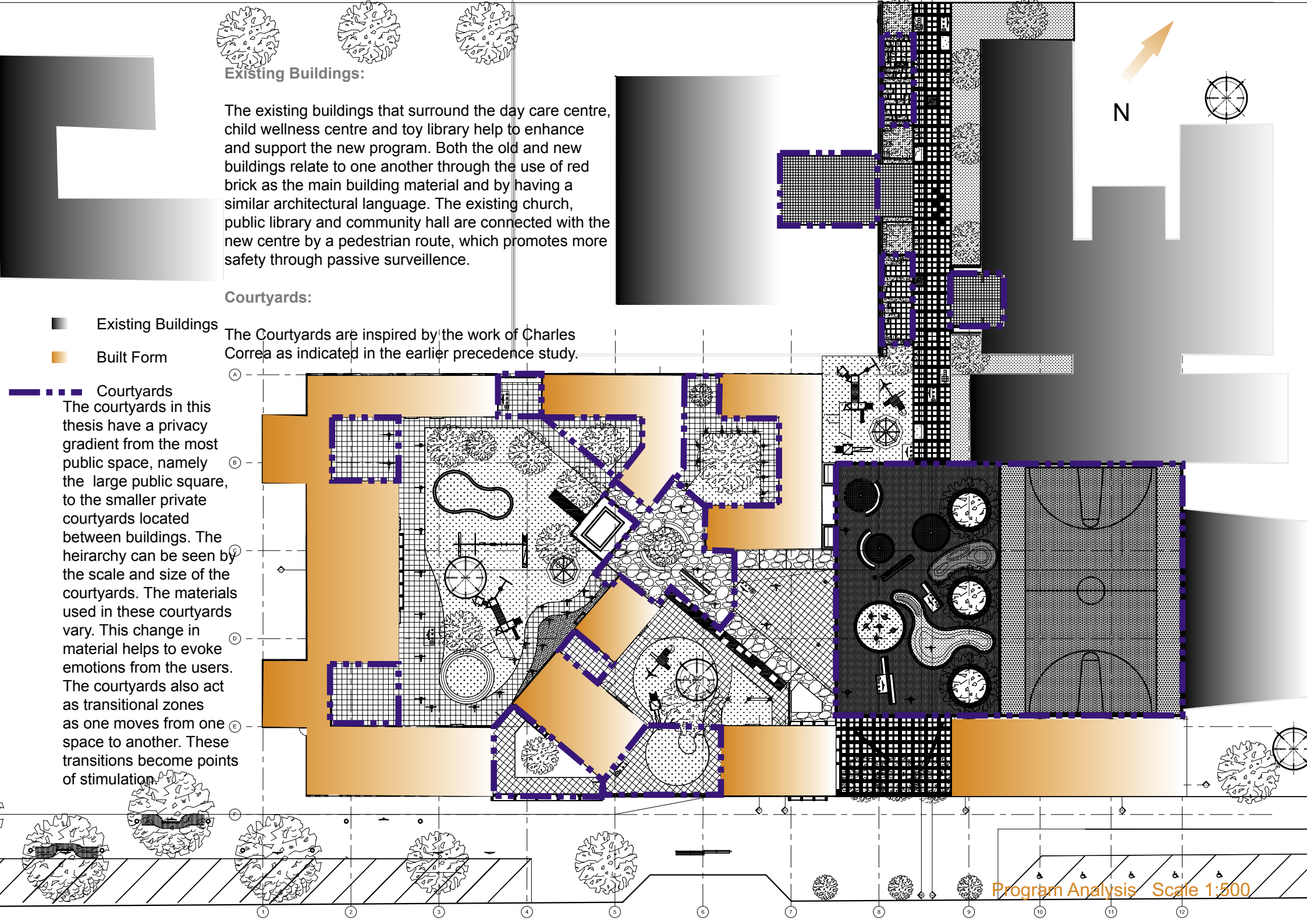
The Courtyards are inspired by the work of Charles Correa as indicated in the earlier precedence study.

Existing Buildings

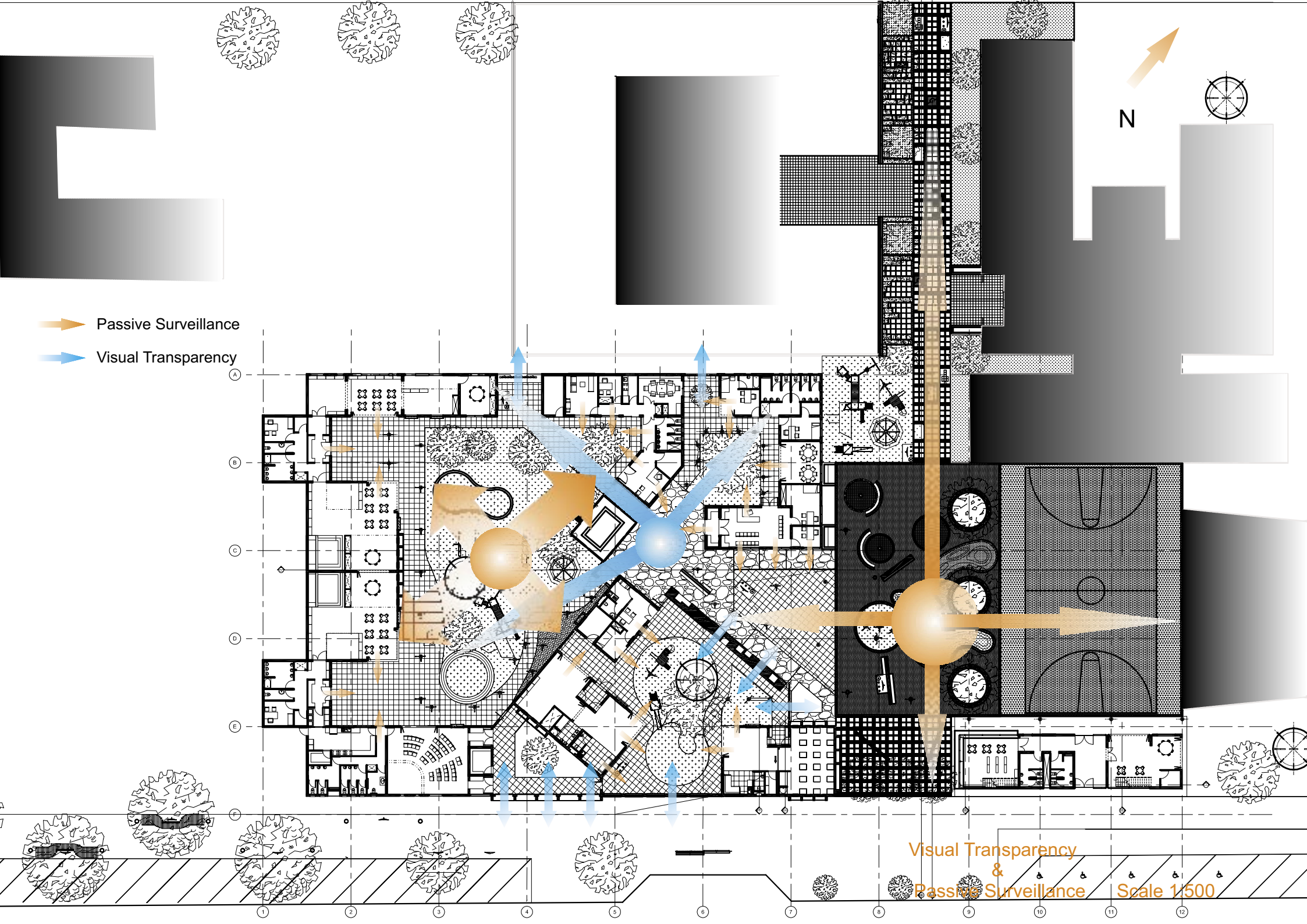
Built Form

Courtyards

The courtyards in this thesis have a privacy gradient from the most public space, namely the large public square, to the smaller private courtyards located between buildings. The heirarchy can be seen by the scale and size of the courtyards. The materials used in these courtyards vary. This change in material helps to evoke emotions from the users. The courtyards also act as transitional zones as one moves from one space to another. These transitions become points of stimulation.



Program Analysis Scale 1:500


Passive Surveillance
Visual Transparency
N
Visual Transparency
&
Passive Surveillance
Scale 1:500

Pedestrian Route

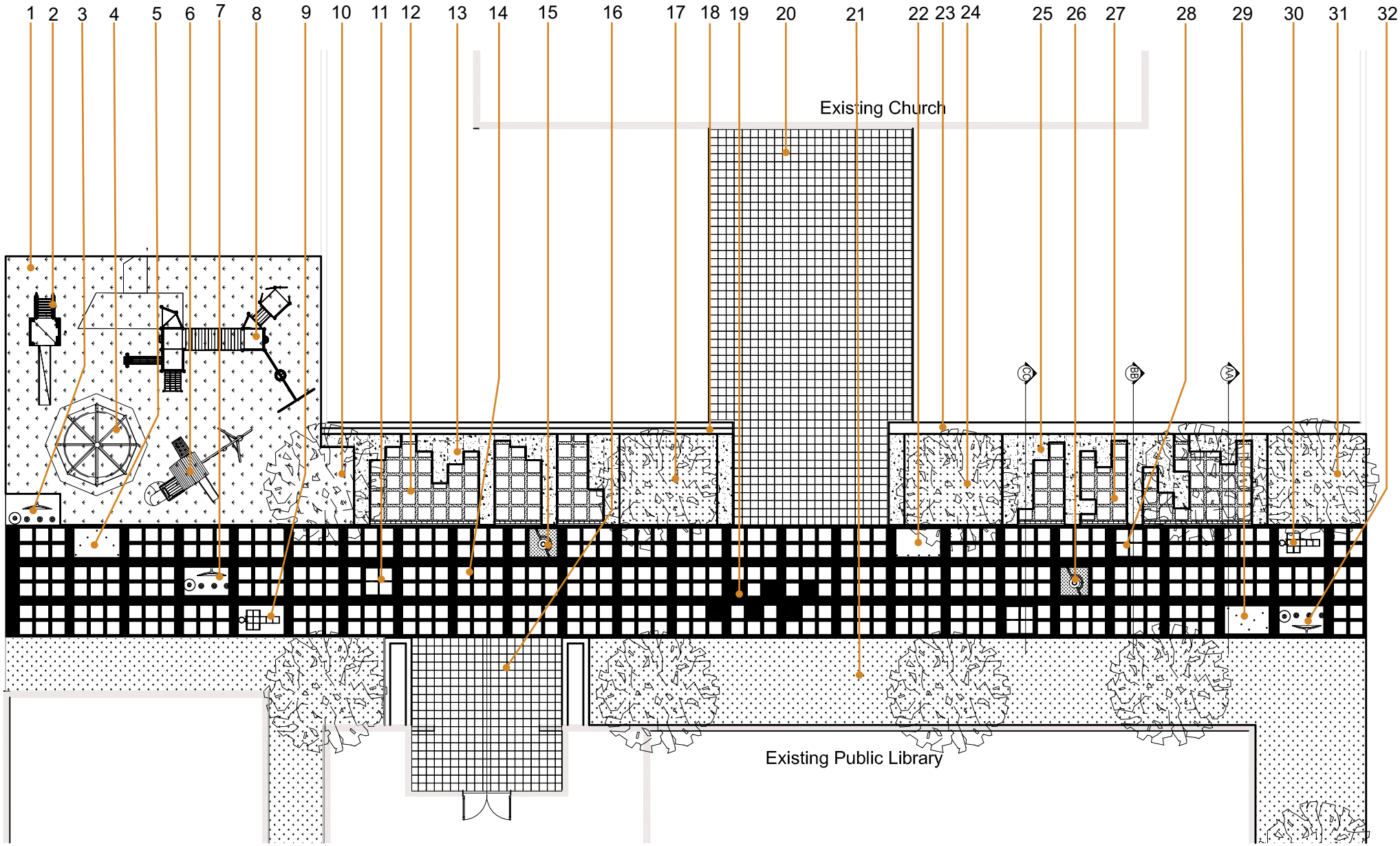


120

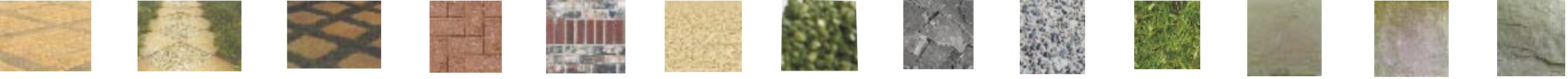
120
Rendered image of proposed pedestrian route.
(Author: 2008).

1. Grassed Play Space
2. Slide
3.Kid's Drums & Listening Dish
4. Meery-go-around
5. Sound Tubes
6. Playset
7. Kid's drums & Listening Dish
8. Play Ground Equipment
9. Hop Scotch
10. Grassed Seating Space
11. Handball
12. Shepstone Pavers
13.Concrete Seat
14. Cobble & Flagstone Pavers
15. Play Column
16. Library Entrance Court
17. Grassed Seating Space
18. Existing Wall
19. Step & Hop
20. Church Entrance Court
21. Grassed Play Space
22. Sound Tubes
23. Existing Wall
24. Grassed Seating Space
25. Protruding concrete Blocks & planters
26. Rotating Column
27. Shepstone Pavers
28. Handball
29. Sound Tubes
30. Hop Scotch
31. Grassed Seating Space
32. Kid's Drums & Listening Dish

N



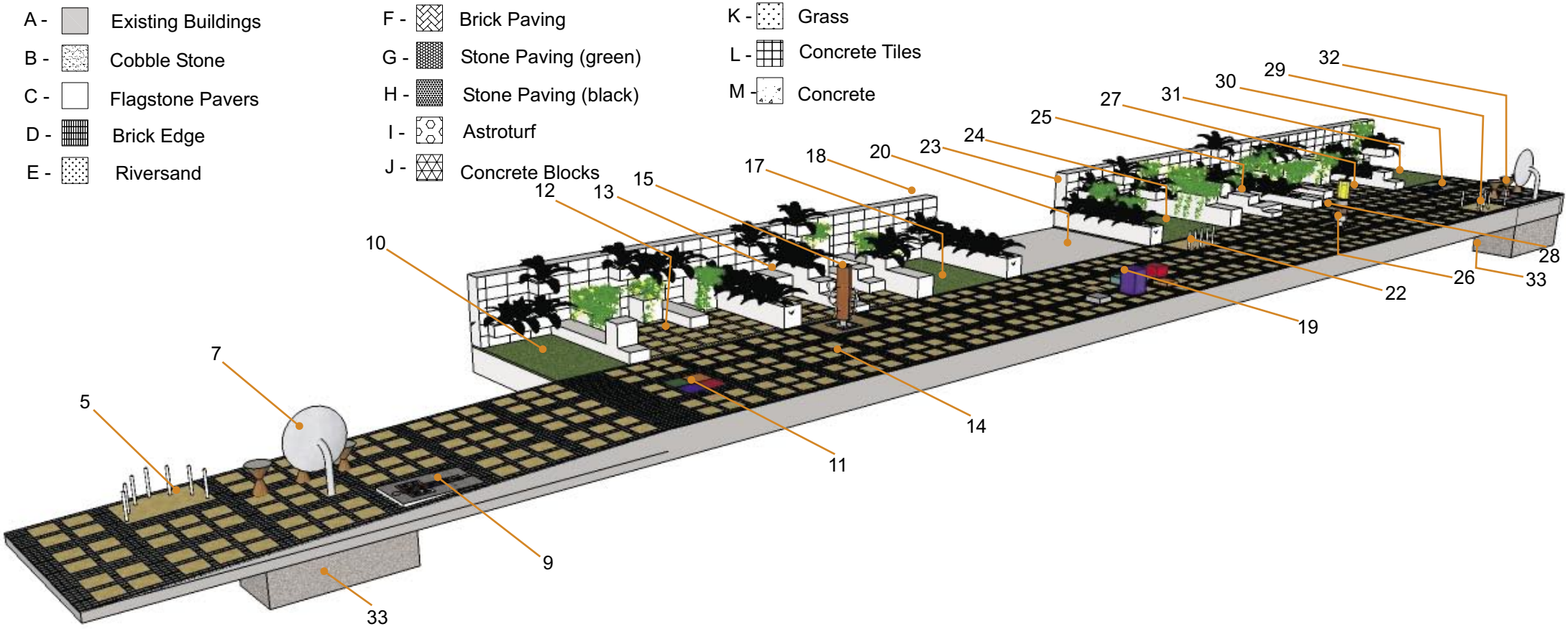
Pedestrian Path Scale 1:200



Proposed Materials & Finishes

Key:

A - Existing Buildings
B - Cobble Stone
C - Flagstone Pavers
D - Brick Edge
E - Riversand
F - Brick Paving
G - Stone Paving (green)
H - Stone Paving (black)
I - Astroturf
J - Concrete Blocks
K - Grass
L - Concrete Tiles
M - Concrete

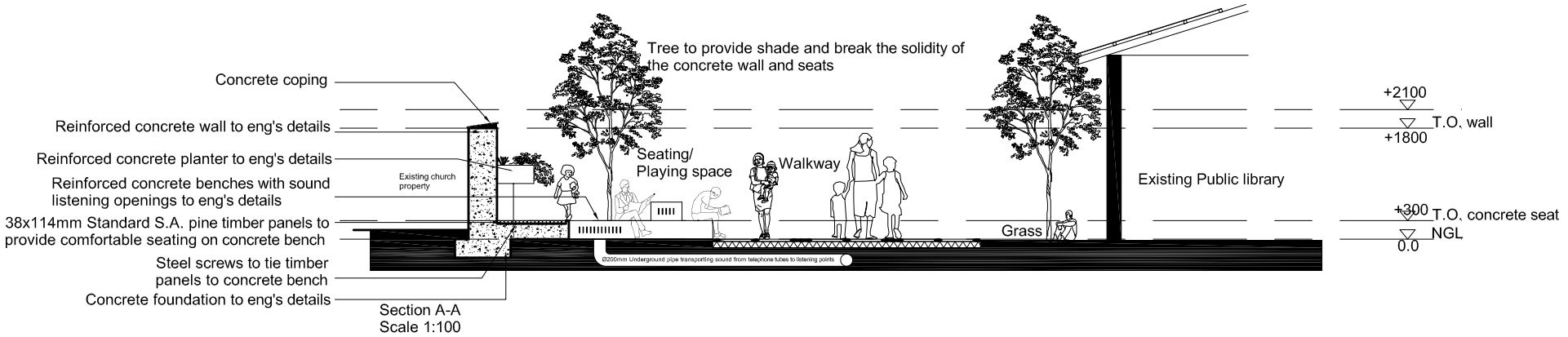


5. Sound Tubes
7. Kid's drums & Listening Dish
9. Hop Scotch
10. Grassed Seating Space
11. Handball
12. Shepstone Pavers
13.Concrete Seat
14. Cobble & Flagstone Pavers
15. Play Column

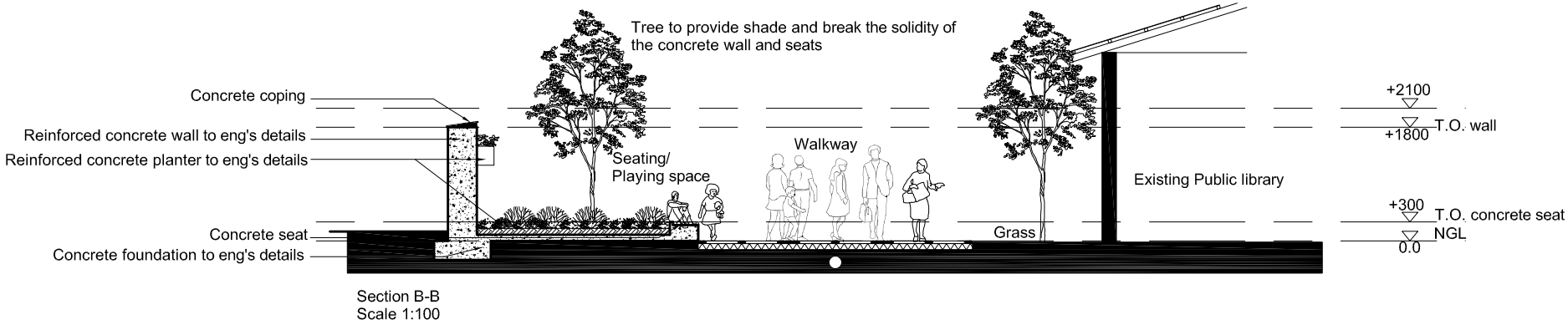
17. Grassed Seating Space
18. Existing Wall
19. Step & Hop
20. Church Entrance Court
22. Sound Tubes
23. Existing Wall
24. Grassed Seating Space
25. Protruding Concrete Blocks
26. Rotating Column

27. Shepstone Pavers
28. Handball
29. Sound Tubes
30. Hop Scotch
31. Grassed Seating Space
32. Kid's Drums & Listening Dish
33. Underground Sound Chamber

Perspective of Pedestrian Route

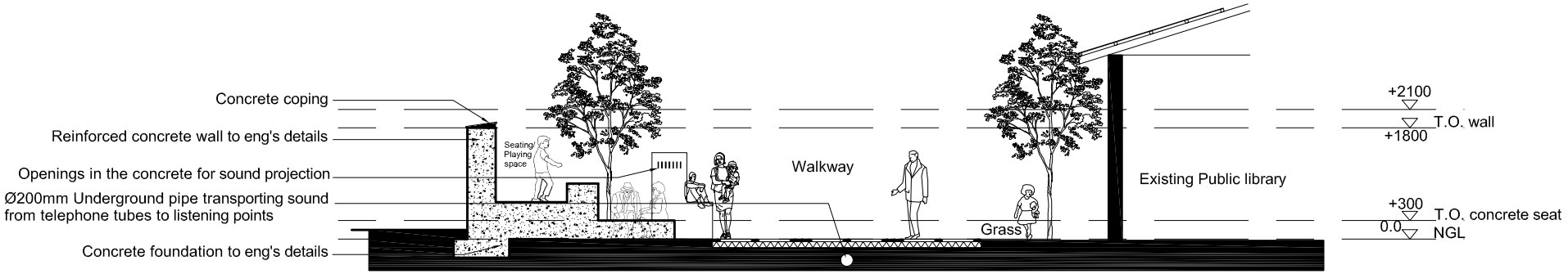


Section A-A
Scale 1:100

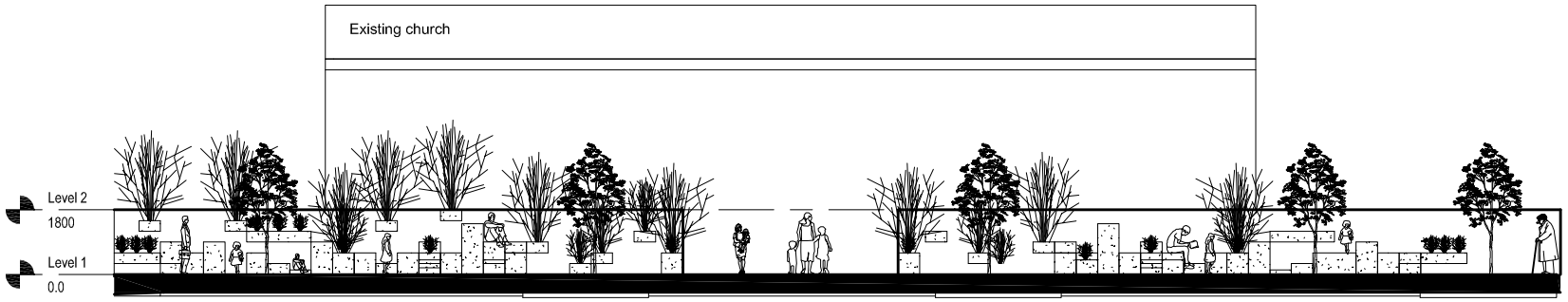


Section B-B
Scale 1:100

Sections Scale 1:100

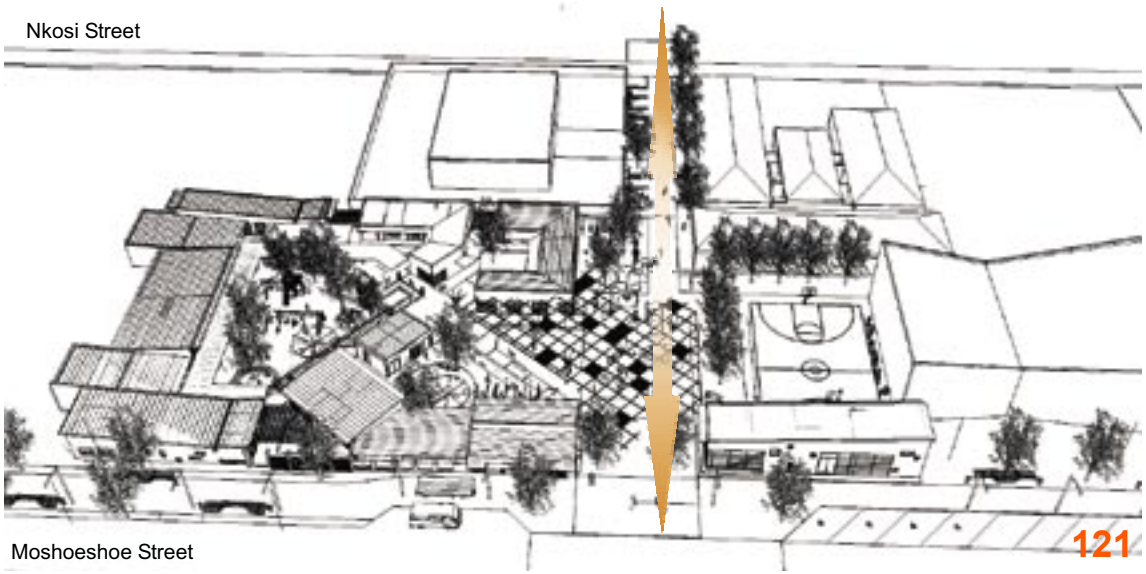


Section C-C
Scale 1:100



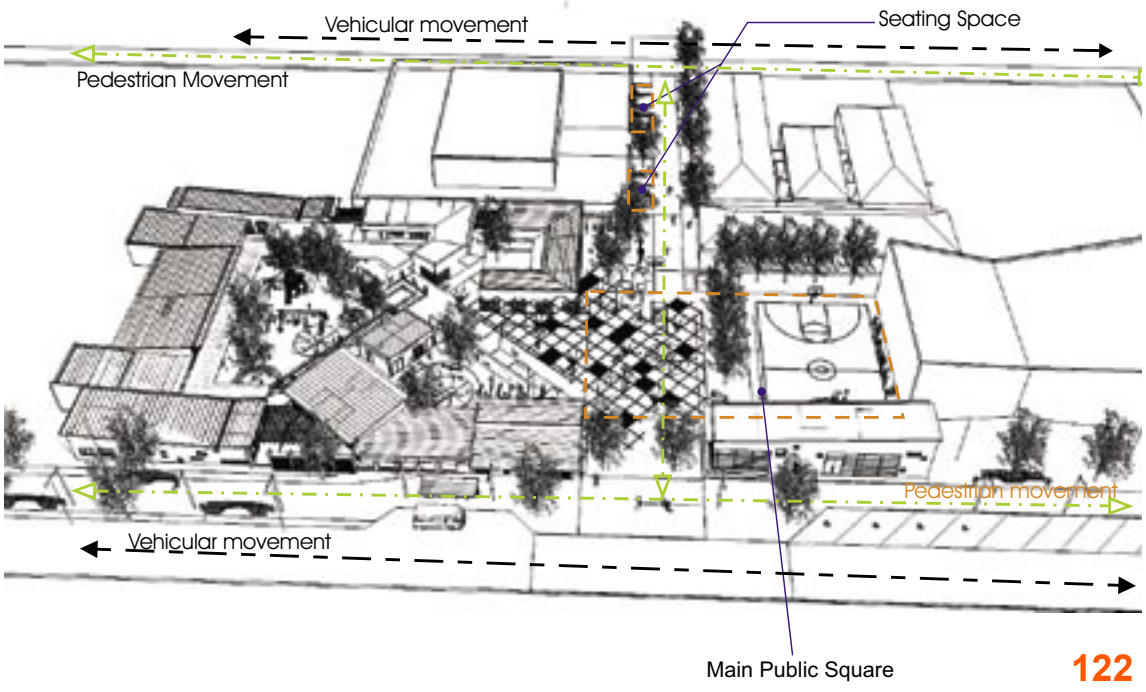
Wall Elevation
Scale 1:200

Section & Elevation Scale 1:100



Pedestrian Path

The image illustrates some of the important factors to be considered in the design. The two streets, Nkosi Street and Moshoeshoe Street are to be connected by the pedestrian path. The path connects the day care centre, child wellness centre and toy library with the existing programs, which are the community hall, public library and local church.



Movement and Public Spaces

One of the core ideas of the project is to be able to link the two streets, Nkosi Street and Moshoeshoe Street with the intention that as the project progresses and motivates other programs to develop around it, activity will increase along Moshoeshoe Street. Some of the programs that may occur as a result of the day care centre, child wellness centre and toy library are: housing on a large scale, youth friendly clinics, large scale retail adjacent to the site and permanent housing for orphans. As people increase, so will the potential for revenue. The results of such a project will be felt over time as children embrace the space as their own.

121
Pedestrian Path
(Author: 2008).

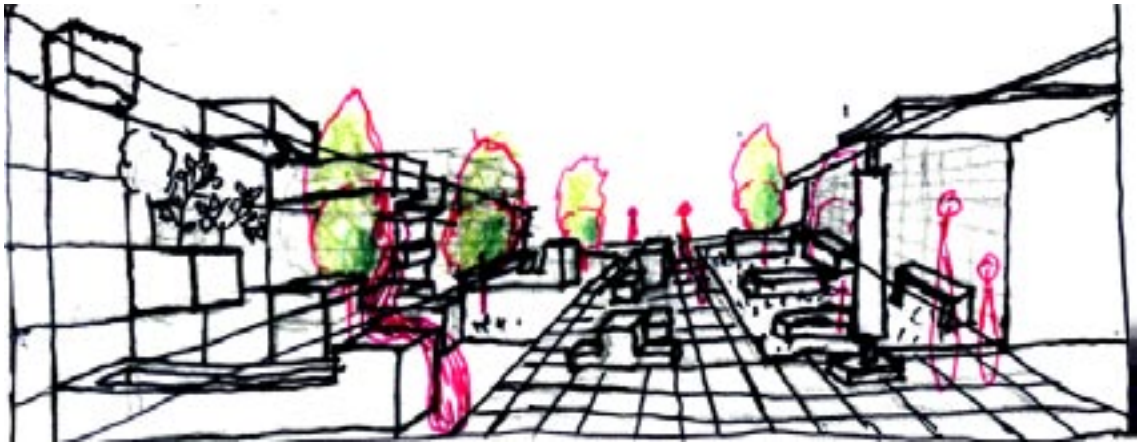
122
Site perspective showing movement
(Author: 2008)

Movement and Public Spaces

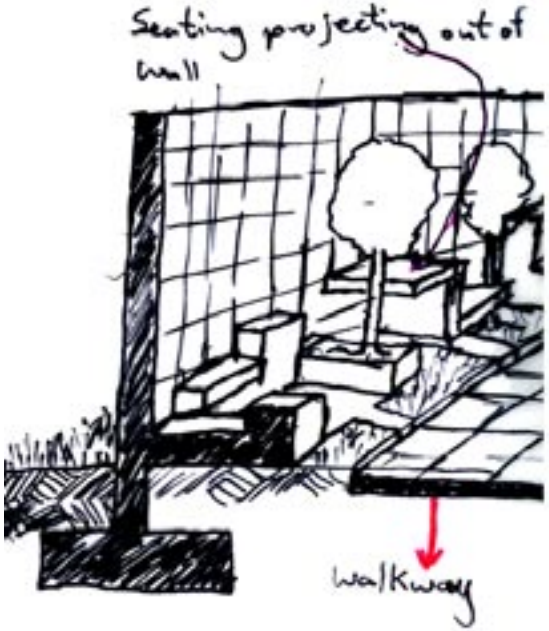
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Access

The site is accessed from two sides, namely the northern and southern side of the pedestrian path. The transition from the existing red brick paving to concrete blocks may inform the users of the space that one is in a different space. The taxi drop off has been located adjacent to the entance to the site. It may be suggested that this may be a further attempt to encourage pedestrian to use the path. The path will have a speed humb where it touches the street. This is to



123



124



125

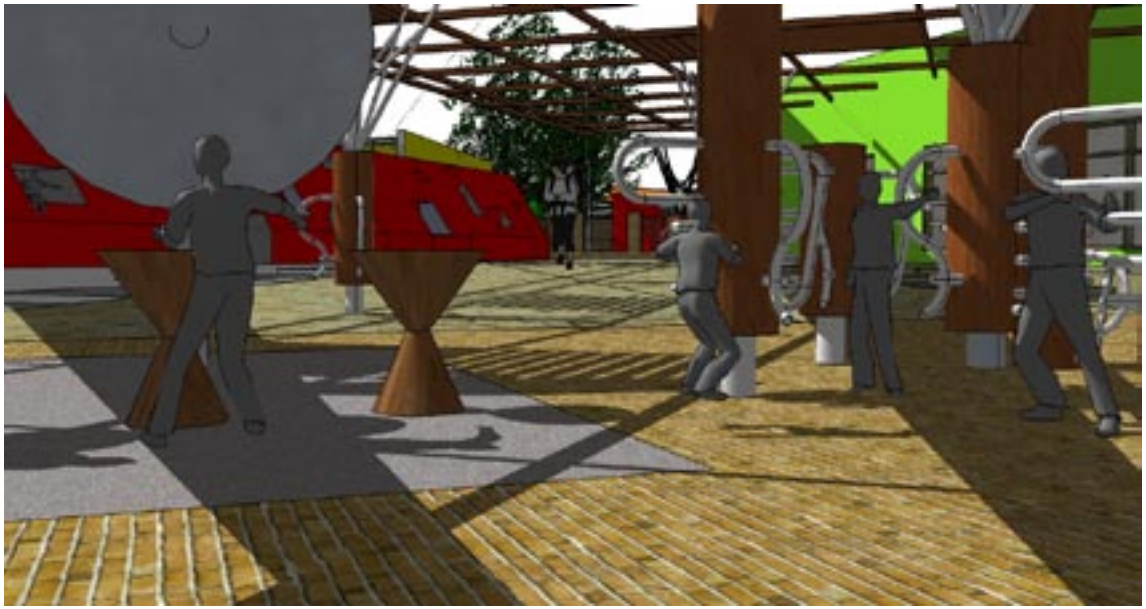
123
Sketch showing conceptual intervention along the pedestrian path. (Author: 2008).

124
Sketch perspective of wall with concrete jutting out of it. (Author: 2008)

125
Section through planter. (Author: 2008)



126



127

encourage vehicles to slow down and to highlight the child friendly zone.

Current site conditions

At the moment, a road construction company has taken temporary possession of the site until their contract expires. It seems that people have identified the site with uncleaness. Parts of the site are used as a dumping site, thus, one may suggest that such an intervention is inappropriate for the site because it it in close proximity to school children and other public facilities. It, therefore, poses as a health hazard for the community of Kwa Thema Central.

Visibility

The connection between Nkosi and Moshoeshoe street will provide the necessary passive surveillence along the pedestrian route. The community is encouraged to make use of the public square by providing elements that will stimulate activity in the area.

Activities taking place in the path

The path is designed with the intention to stimulate children's senses. As one enters the path from the north, one's sense of sight is stimulated by the off-shutter concrete wall. Concrete blocks are projected from the wall, which is

126
3d perspective of pedestrian route. (Author: 2008).

127
3d view of activities along the path. The columns holding up the pegola network become play elements (Author: 2008)

an addition to the already existing boundary wall of the public library. The spaces created allow for seating and creative play. Some of the boxes are designed as planters. The green of the plants is contrasted against the grey concrete and red brick wall of the existing public library. It softens up the edge and promotes the idea of seating.

The path is divided into two areas. The first area is the location towards the north, which contains cobble stone and flagstone pavers in order to slow traffic down. This is the space in which most of the seating is located. Adjacent to the seating is the existing public library with it's entrance looking onto the path.

The portion of the path located towards the south, which is the main public square contains most of the play elements that stimulate children's senses and assist in developing children's cognitive and motor skills. Some of the games located in this space are shadow play, kids drums, telephone tubes, listening dishes and low skateboarding walls.

The public square contains a basketball court. The space is defined by the two existing buildings, namely the library and community hall. This thesis proposes a toy library along the southern edge, which encloses the space.



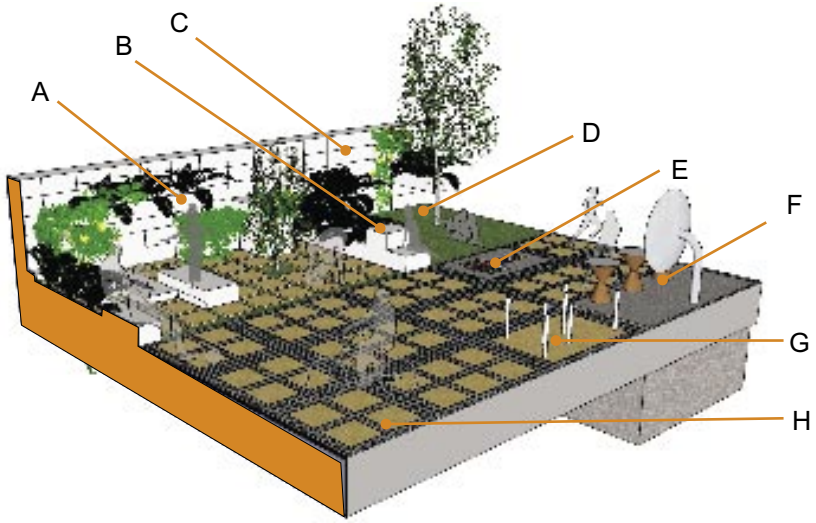
128



129

128
3d view of southern access to the pedestrian route. (Author: 2008)

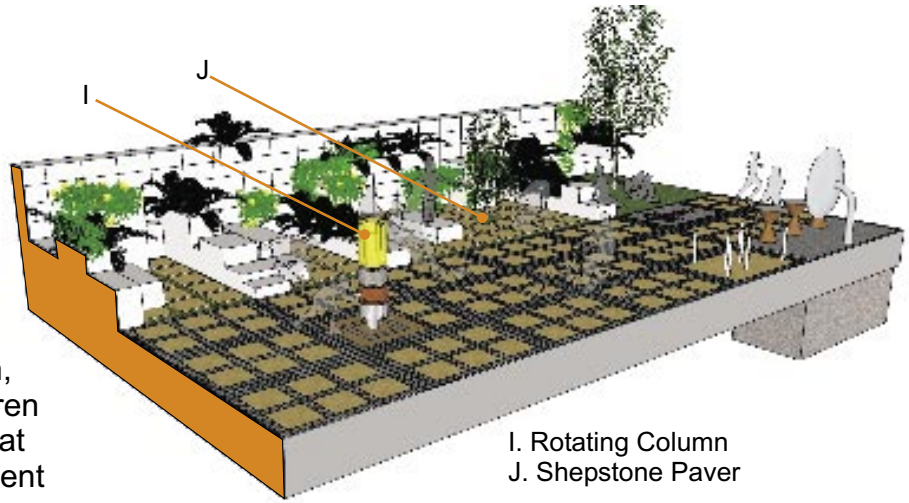
129
3d view showing basketball in front of the toy library. (Author: 2008)



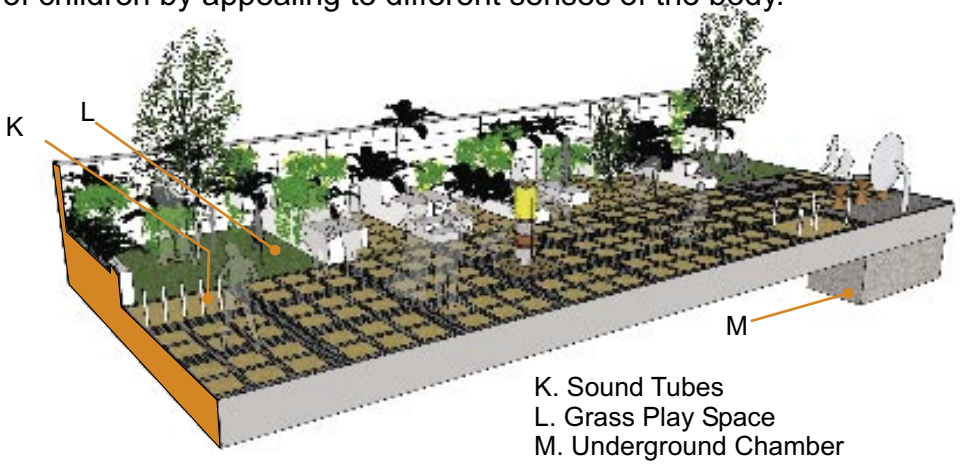
A. Concrete Planter
B. Concrete Benches
C. Existing Wall
D. Grass Play Space
E. Hop Scotch
F. Kid's Drums & Listening Dish
G. Sound Tubes
H. Cobbles & Flastone Tiles

The pedestrian pathis finished with Seaward cobbles, which is supplied by Smartstone with 500x500mm flagstone tiles in the centre. The rough texture of the cobbles will allow pedestrian traffic to slow down. The dark colour of the stone adds warmth and beauty contributing in giving a sense of ownership to the users. The entrance is simple and marked by trees, plants and grass on either side of the path creating a green pedestrian corridor stimulating the sense of smell and sight.

The pedestrian path connects Nkosi Street with Moshoeshoe Street. Activities to stimulate children can be found along the entire walkway. Some of the play elements found along the path are kid's drums and listening dish which have an underground chamber to resonate the sound. The chamber is connected to an underground steel tube that is connected to other sound instruments throughout the site, thus allowing children to engage and stimulate each other at different parts of the site. Other play elements are hop scotch, sound tubes, rotating column, climbing column and handball. These games and play elements don't restrict children from initiating their own play, but rather inspire children to be creative in a space that they own. The play elements stimulate the cognitive, social and physical development of children by appealing to different senses of the body.

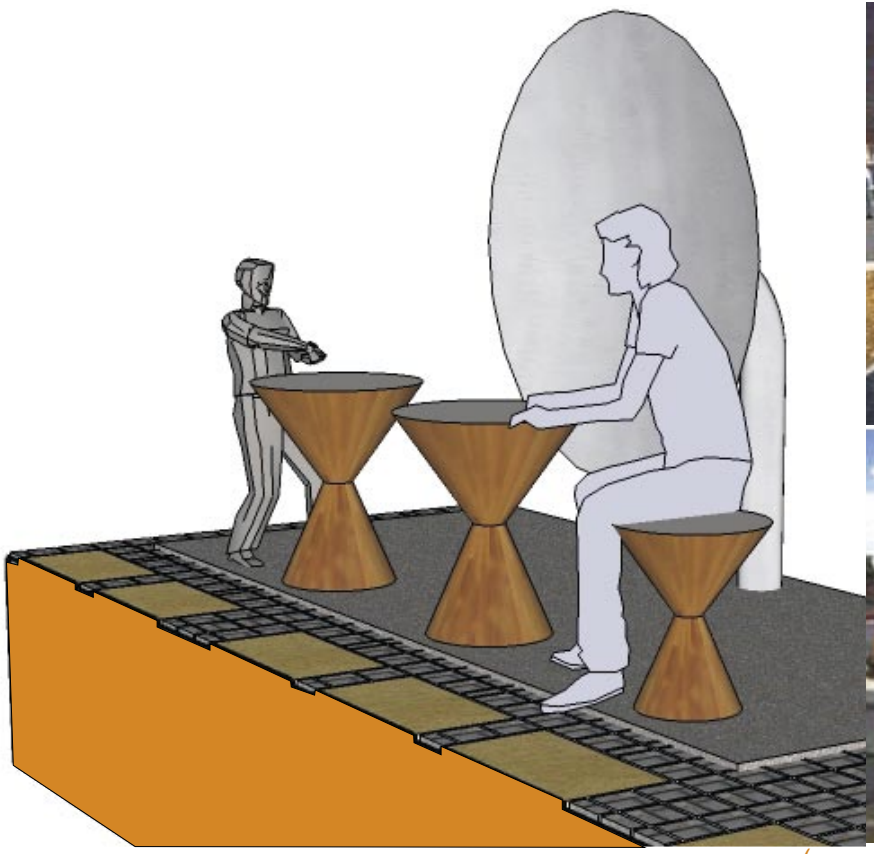


I. Rotating Column
J. Shepstone Paver

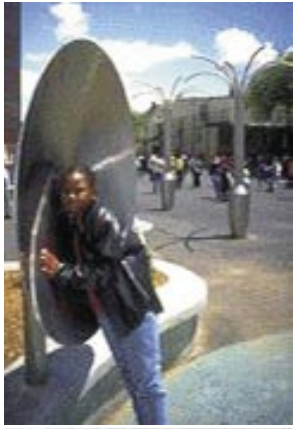


K. Sound Tubes
L. Grass Play Space
M. Underground Chamber

The concrete wall will be added to the existing wall to increase its stability in order for it to support the projecting concrete blocks that become seating space, planters and climbing elements.The space is designed such that children can fully explore and be adventurous in creating their own world of make-belief. It's a space that children can escape their own world, which may be less desirable.



Rendering of Kid's drums and Listening Tubes



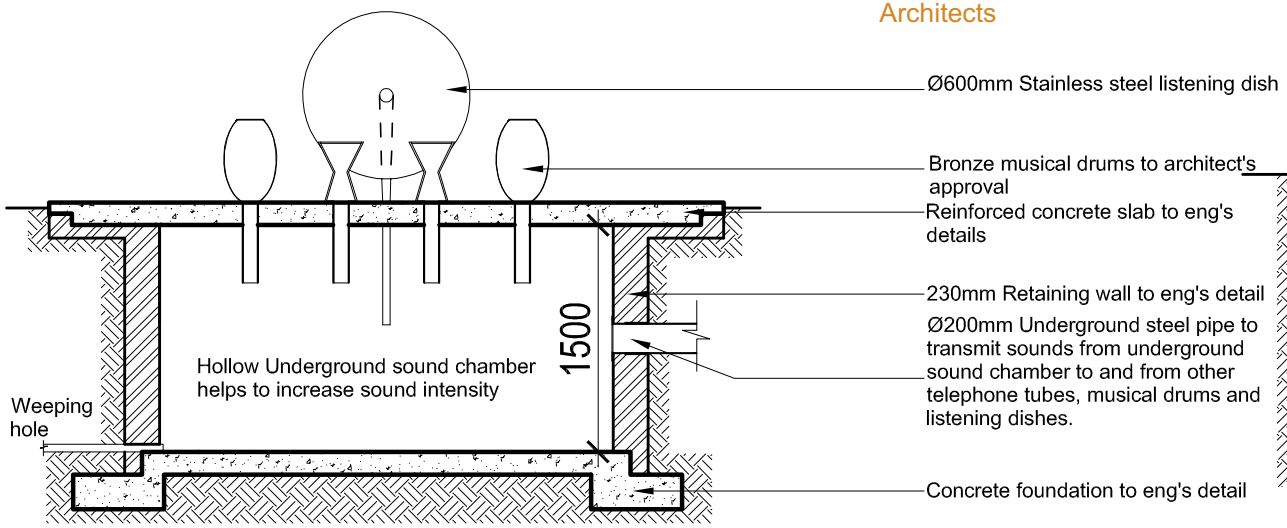


(www.sonicarchitecture.com):
2008. P.S. 244 Sound Carnival
Brooklyn NYC
Designer: Montoya Rodriquez Architects

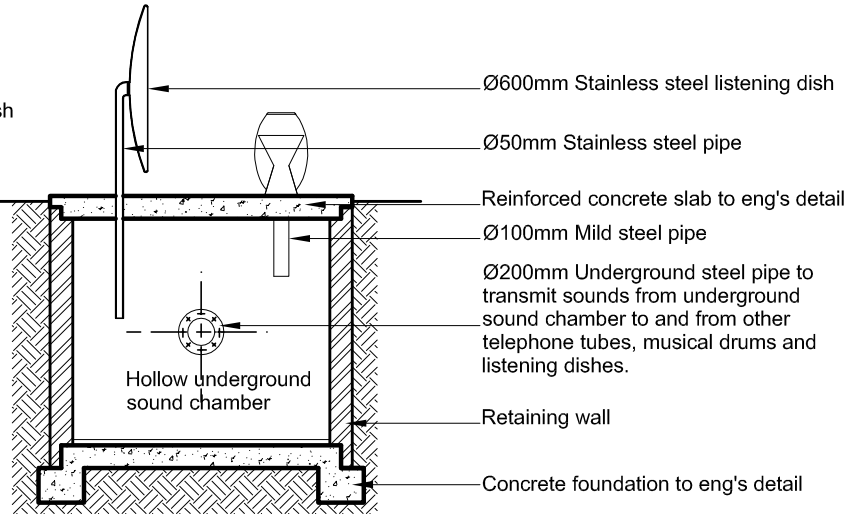
The kid's drums and listening dishes were originally designed for an elementary school in the Carribean community of East Flatbush, Brooklyn to explore music and the physics of acoustic phenomena. The stimulating play elements helped in increasing the student enrollment and appreciation of the school. The kid's drums and listening dishes will be located at various locations throughout the site, namely the creche, kindergarten, public square, adjacent to the community hall and public library (www.sonicarchitecture.com).

The bronze musical drums allow the children, both young and old to engage with one another in communal music making and serves as both seating and tables. The drums, which are of Haitian origin and the parabolic dishes connect to an underground chamber. Some of the drums have open tops that allows the children to speak into the drums. The drums are connected to the underground chamber by pipes, where the sound is amplified and the children can ear their own voices and those of others from the stainless steel parabolic dishes. The dishes focuses and reflects sound waves directly to the player's ears (www.sonicarchitecture.com).

The different sound elements throughout the site are connected by an underground steel pipe, which is also connected to concrete benches throughout the site. The children can hear their voices reverberating through grates in the concrete benches, walls and the center of the listening dishes.



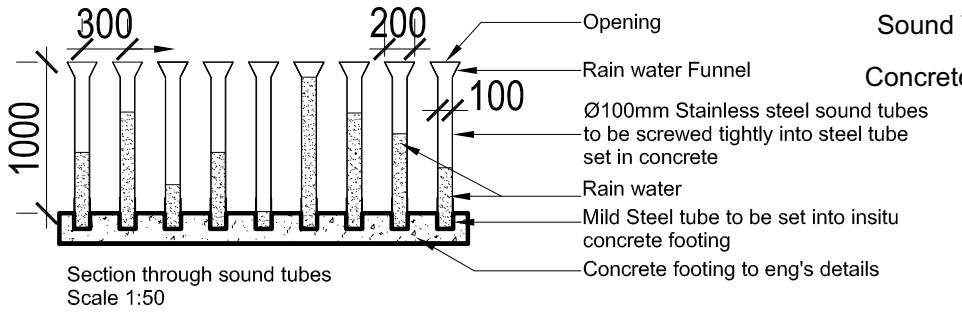
Longitudinal section through musical drums and listen dishes
Scale 1:50



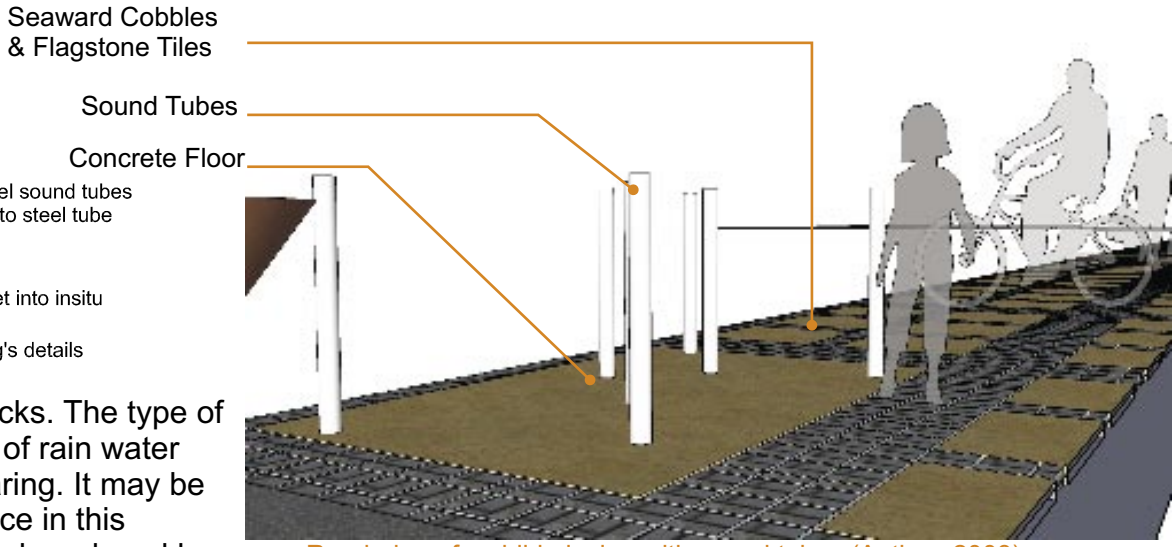
Cross section through musical drums and listen dishes
Scale 1:50

Kid's Drums and Listening Dish Scale 1:50

Sound Tubes



Section through sound tubes
Scale 1:50



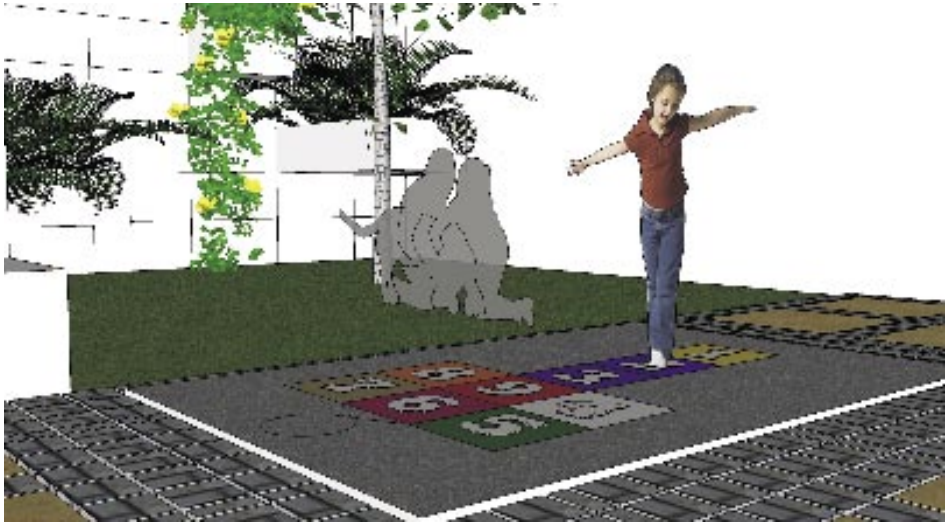
Rendering of a child playing with sound tubes (Author: 2008)

Sound tubes produce sound as children hit them with sticks. The type of sound each tube produces is determined by the amount of rain water contained in each tube. This stimulates the sense of hearing. It may be suggested that the act of learning through play takes place in this manner. When the child becomes fascinated by the sound produced by the sound tubes, it causes the child to take interest in understanding why such sounds are produced. This may engage the child in discussions with other children thereby developing their social skills and self confidence, which is important for developing an identity.

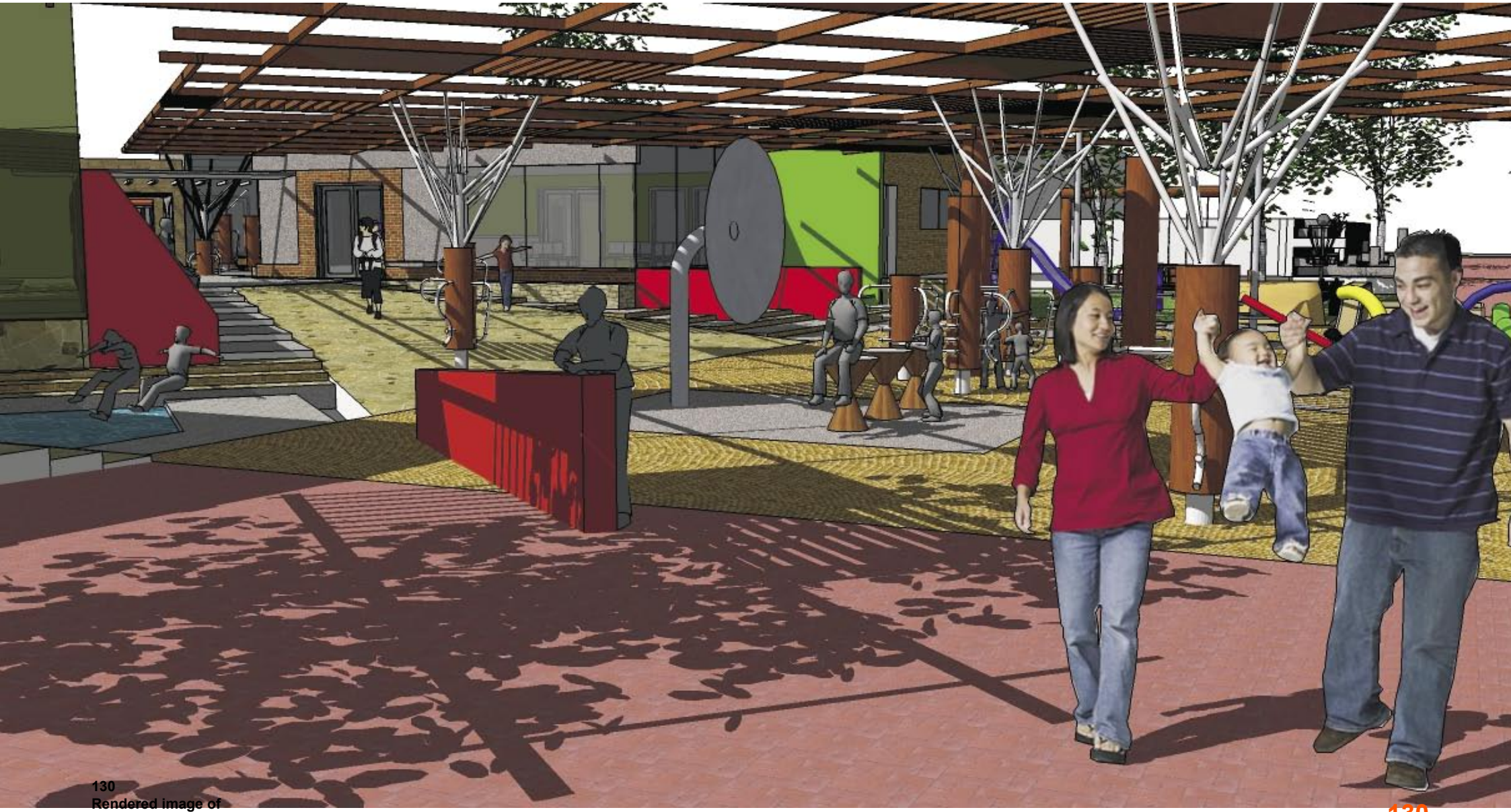
Hop Scotch

Hop Scotch is a very popular game in the township of Kwa Thema. Children are stimulated physically through play by hopping and skipping to different blocks of the game. This competitive game helps with motor and small muscle development. It also contributes to the development of social skills, which will impact on the children in adulthood.

It seems that children that have experienced some form abuse would often exclude themselves from such games. This will allow the professionals at the child wellness centre to diagnose children and further determine the type of treatment and rehabilitation process that needs to be undertaken. The idea is that in time, the abused children will begin to heal through engaging with other children and stimulated through play. The opportunity to play not only speaks of freedom but it also gives the child some level of control and authority back to the children - through play the child is able to be in control of their world.



Rendering of child playing on a Hop Scotch (Author: 2008)



130
Rendered image of public square.
(Author: 2008)

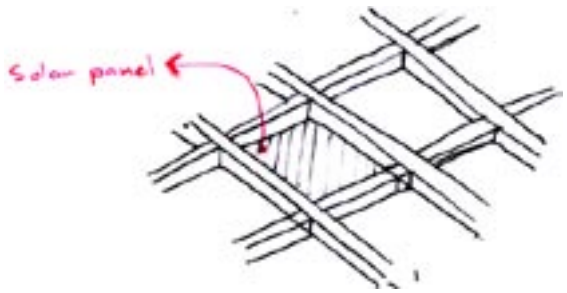
Image showing Pergola Structure & activities in Public Square

Public Square

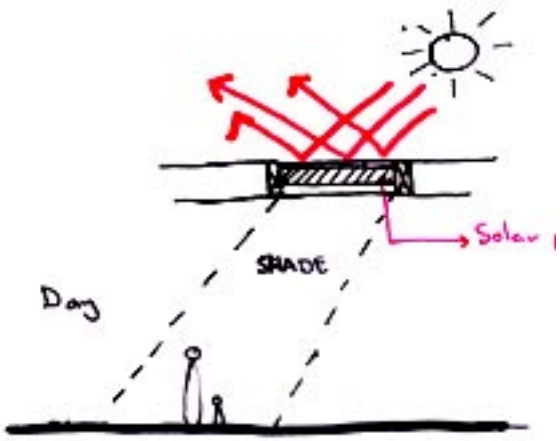


131

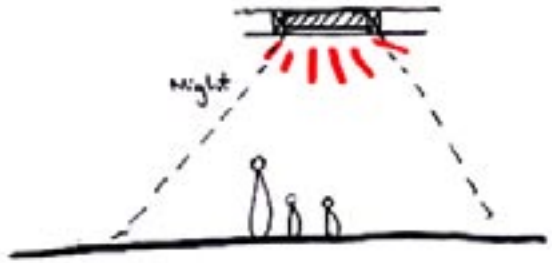
Rendered image showing perspective of public square. (Author: 2008)



132



133



134



135



136

Multi-purpose Space

The multi-space located in front of the toy library can be used as a basketball court. Other activities that may occur within that space are stokvels, street bashes, community meetings, drama and performance. The plain wall of the existing community hall is proposed as a space for projecting images onto during the night to accomodate a walk-in. It allows the space to function during the day and the night. The gathering space would be convenient for watching games such as the World Cup for 2010.





137

132
Solar panel located between pegola. (Author: 2008).

133
The solar panel provides shade during the day. (Author: 2008)

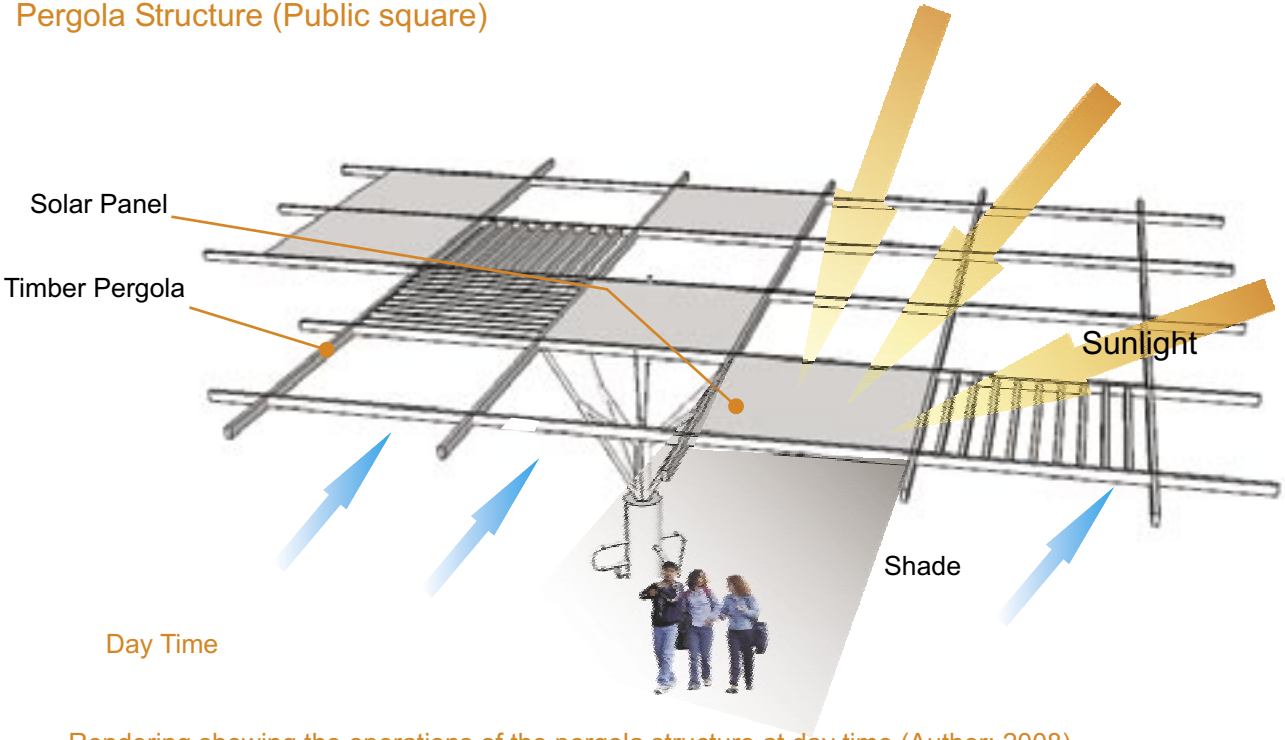
134
The solar panel provides light during the night.

135
3d view of entrance to day care centre.

136
Panoramic view of entrance courtyard.

137
3d views showing the multi-purpose usage of the space infront of the toy library and craft centre.

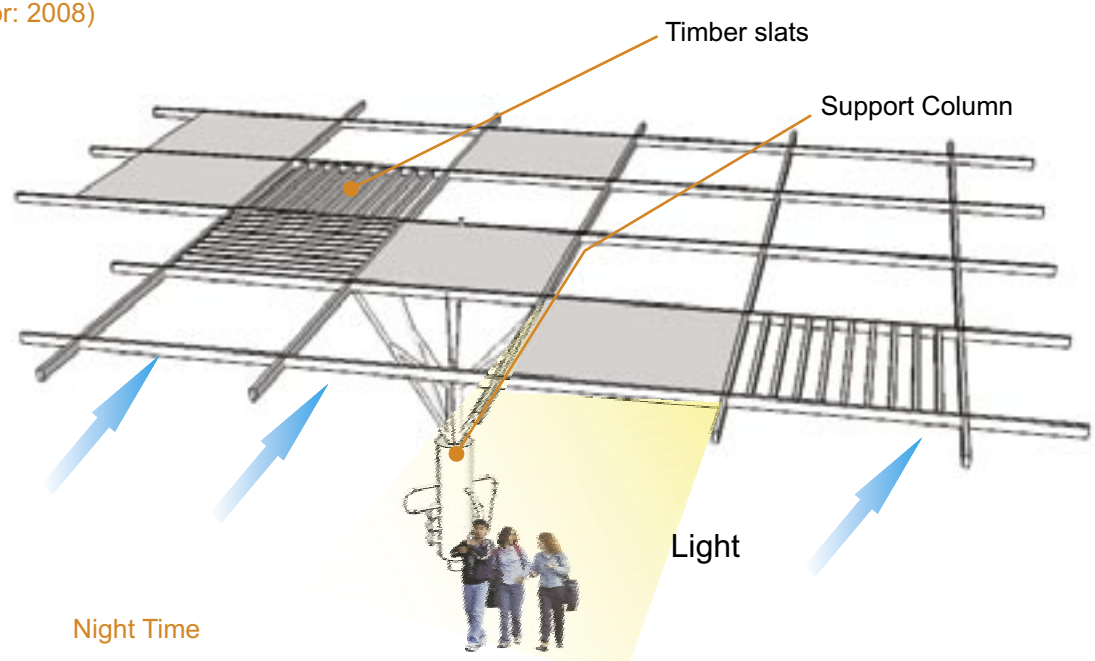
Pergola Structure (Public square)



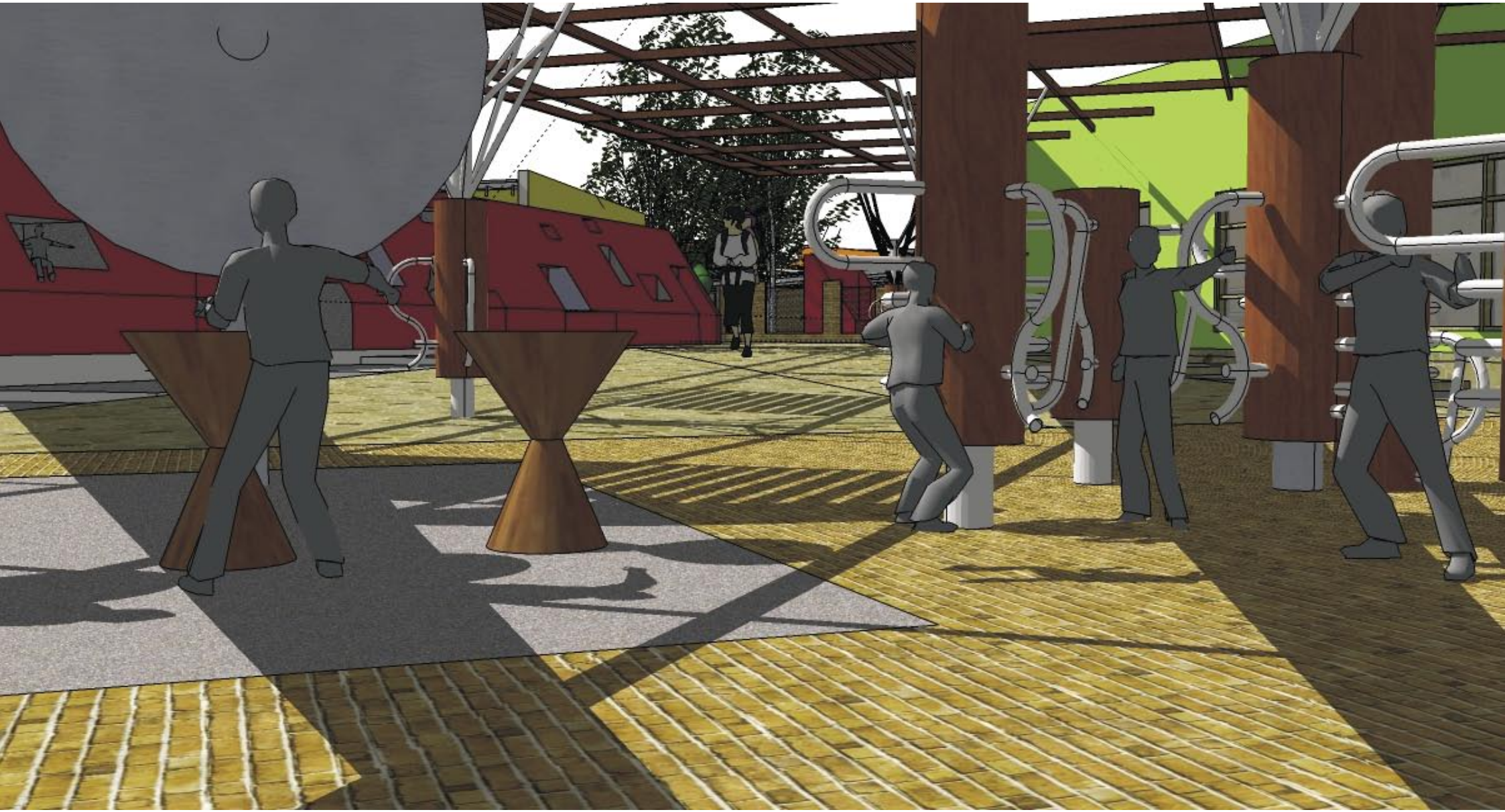
Rendering showing the operations of the pergola structure at day time (Author: 2008)

The pergola structure contains solar panels that absorb the heat of the sun during the day and store it in battery cells located within the panel. The panels produces shade for those walking underneath the structure to increase comfort and decrease the amount of heat and light that would engulf the public square if the structure wasn't there. The solar panels not only provide shade, but act as stabilizers for the large structure. The panels brace the grid-like structure from extreme windy conditions that take place quite often in Kwa Thema. The timber pergola contains blocks with timber slats located randomly throughout the structure and also help in bracing the structure. The blocks with timber slats produce shadows and patterns on the ground during the day that may seem intriguing to children. This will stimulate the children to explore and engage in play. Heat is allowed to dissipate through the timber slats and other open blocks to allow ventilation to take place.

At night, the solar panels provide lighting for the public square. This helpsin increasing the safety and security of the users of the space. The well-lit public space will be able to accommodate activities during the night. The public space can be a gathering space both during the day and night. The structure is supported by timber and steel columns that resonate the notion of a tree. The pergola structure is part of the top branches. The structure also assists in bringing down the scale of the large public space so that it may appeal to the children, who are the center of focus for this thesis. One may suggest that the children will feel safe and protected under this covering. The public square is to feel as an outdoor lounge or playroom. There are numerous activities, games and play elements that are accommodated under the structure such as telephone tubes, sand pit, grass hills, seating, skateboarding; shadow play, which is located adjacent to the structure as it requires sunlight to work, and mostly space for free play.

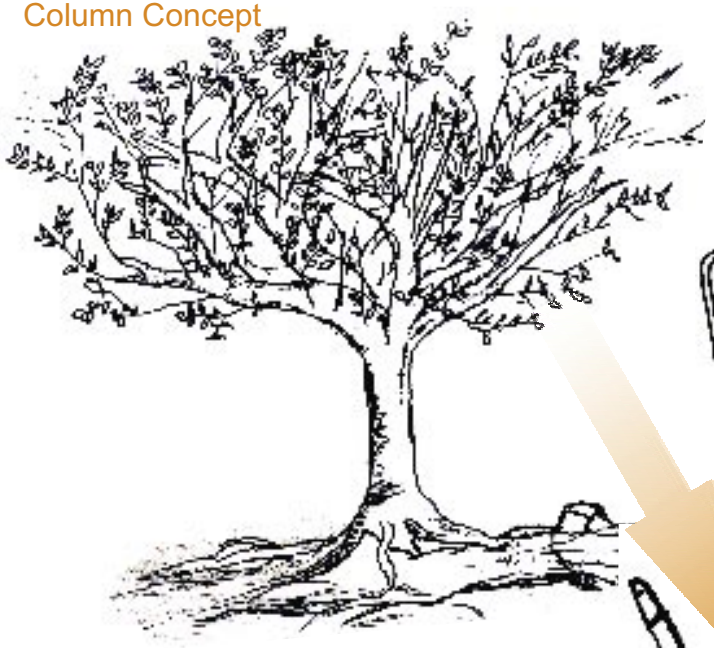


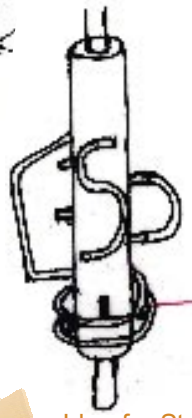
Rendering showing the operations of the pergola structure at night time (Author: 2008)



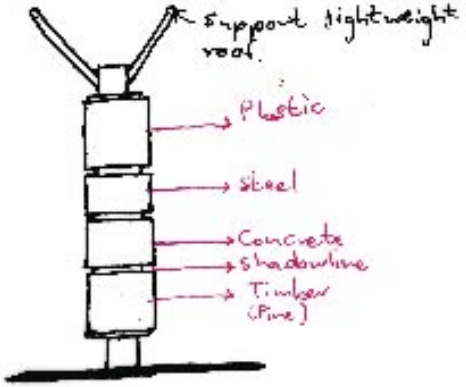
Rendering of Children playing on Play Columns in Public Square (Author)

Column Concept

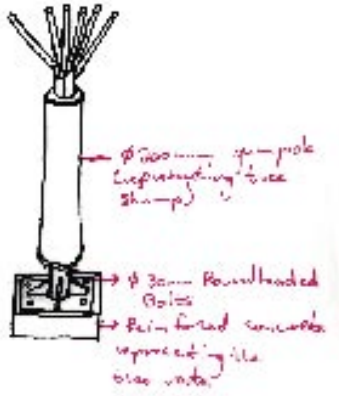




Idea for Stainless steel climbing elements (Author: 2008)

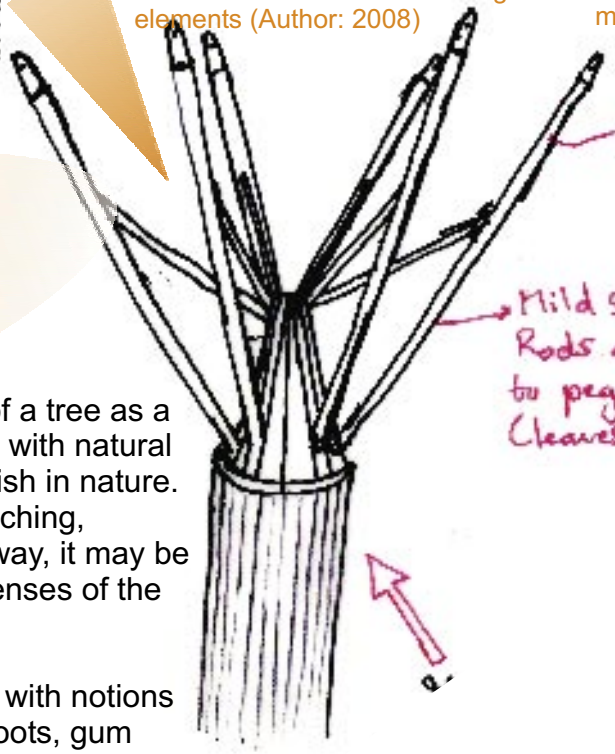


Idea of column with different materials (Author: 2008)



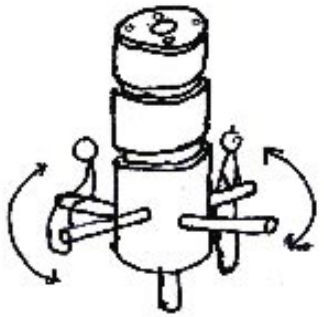
Idea of basic column (Author: 2008)

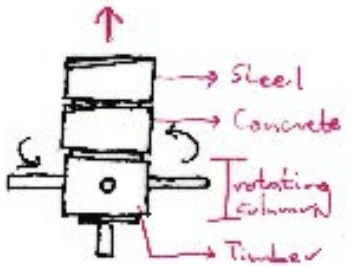




The columns are conceived from the idea of a tree as a life giving element. Children love to engage with natural elements. It is said that human beings flourish in nature. Children engage with trees by climbing, touching, smelling, hearing and seeing them. In this way, it may be suggested that the tree stimulates all the senses of the body.

The column used for the project, resonates with notions of the tree. The foundation resembles the roots, gum pole is the tree trunk. The mild steel supports resemble the top branches. The stainless steel handles are the lower branches that a child can grab onto for climb. The warm gum pole is contrasted with the cold steel. This may evoke a certain emotion from the user and will determine how they engage with the column.

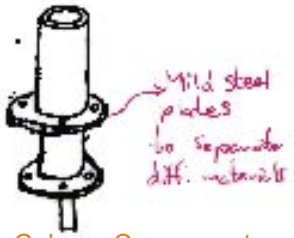




Concept of Rotating Column (Author: 2008)

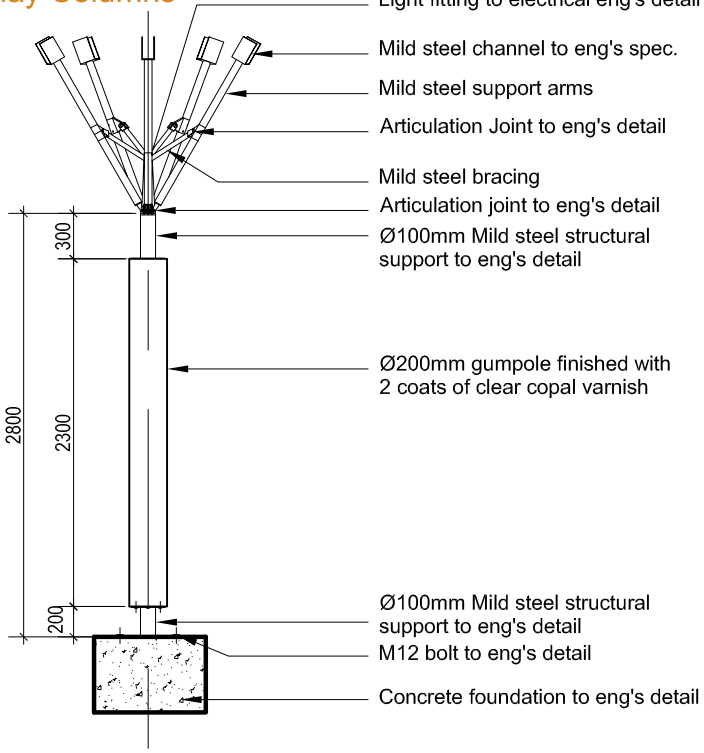




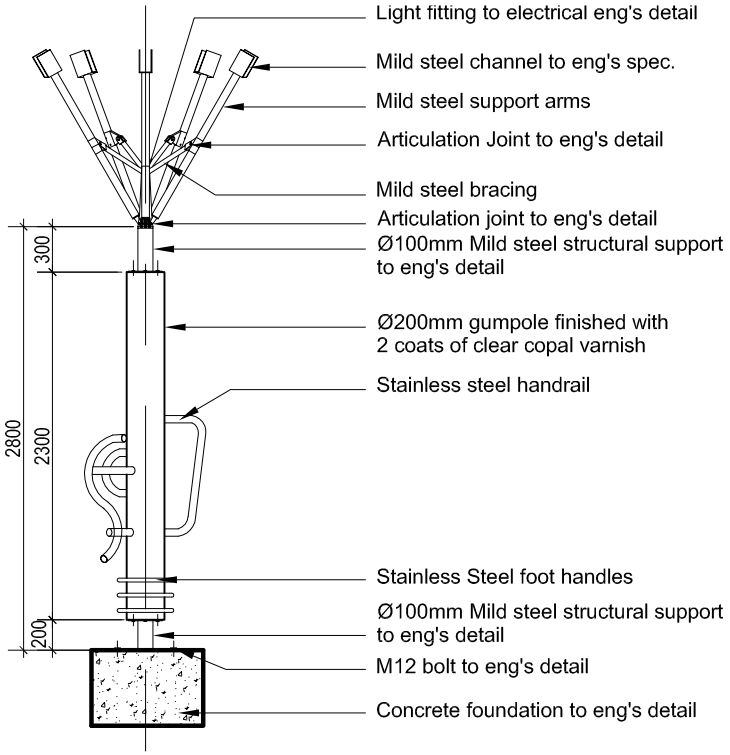


Column Components (Author: 2008)

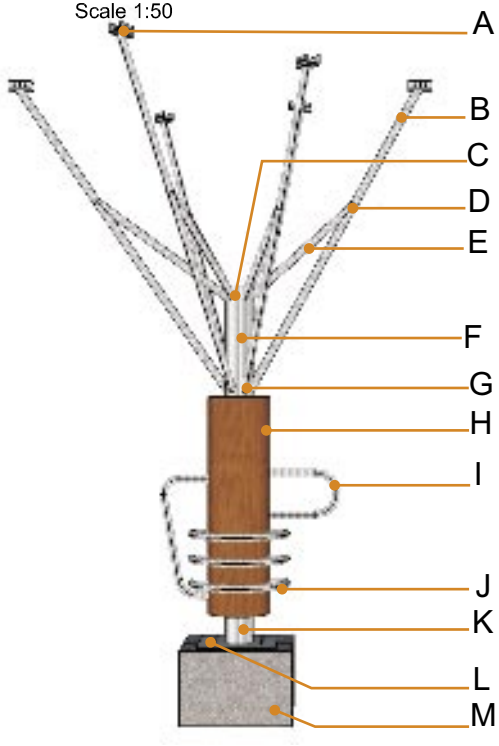
Play Columns

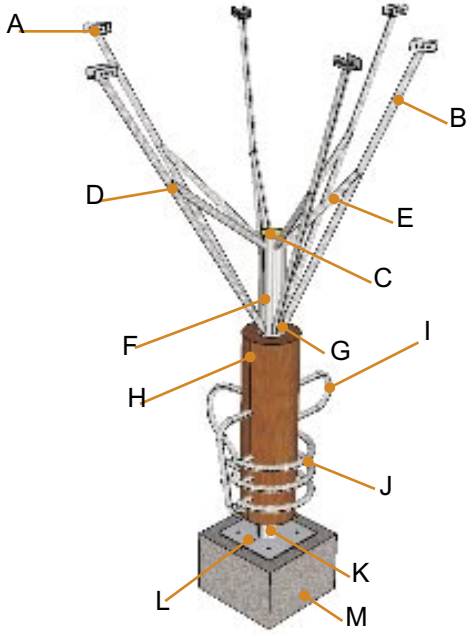


Detail of typical play column
Scale 1:50



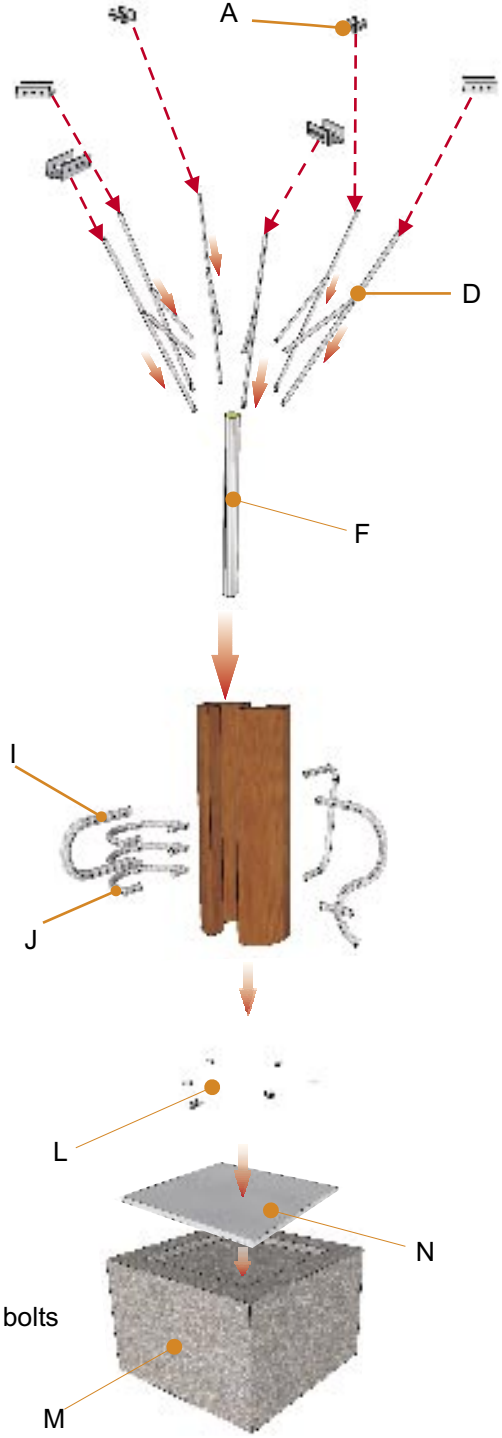
Detail of typical play column
with climbing branches
Scale 1:50





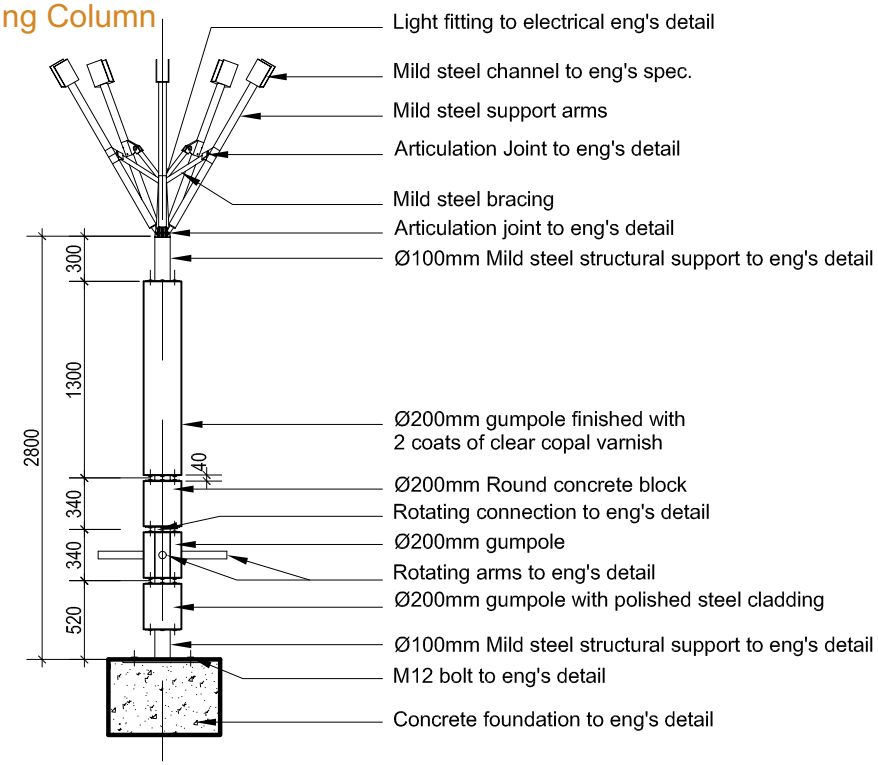
Perspective of Play Column

A. Mild Steel channel
B. Mild Steel Support Arms
C. Light Fitting
D. Articulation Joint
E. Mild Steel Brace
F. Mild Steel Structural Support
G. Articulation joint
H. Gumpole
I. Stainless Steel Handrail
J. Stainless steel Foot Handles
K. Mild Steel Structural Support
L. Mild Steel Plate with holes for bolts
M. Concrete Foundation
N. Steel plate cast into concrete



Column Assembly

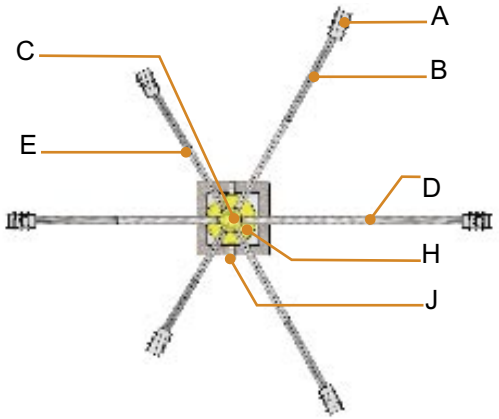
Rotating Column

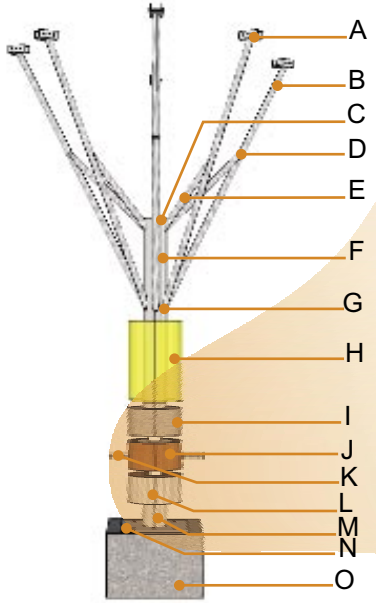


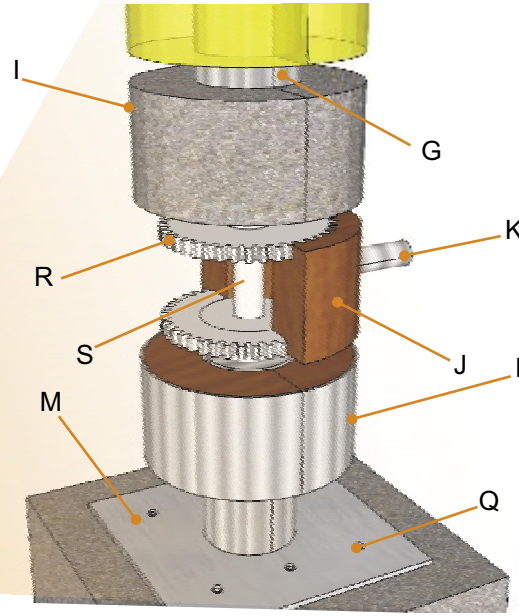
Detail of typical rotating play column
Scale 1:50

The rotating column promotes the development of the large muscles of children. Using the rotating action, prompted by pushing against the stainless steel arms, the children generate electricity, which switches the light fittings on for the period that is rotated. The action of the children induces a reaction from the architectural element, thus allowing the children to engage with the building. The senses that are stimulated are that of touch and sight.

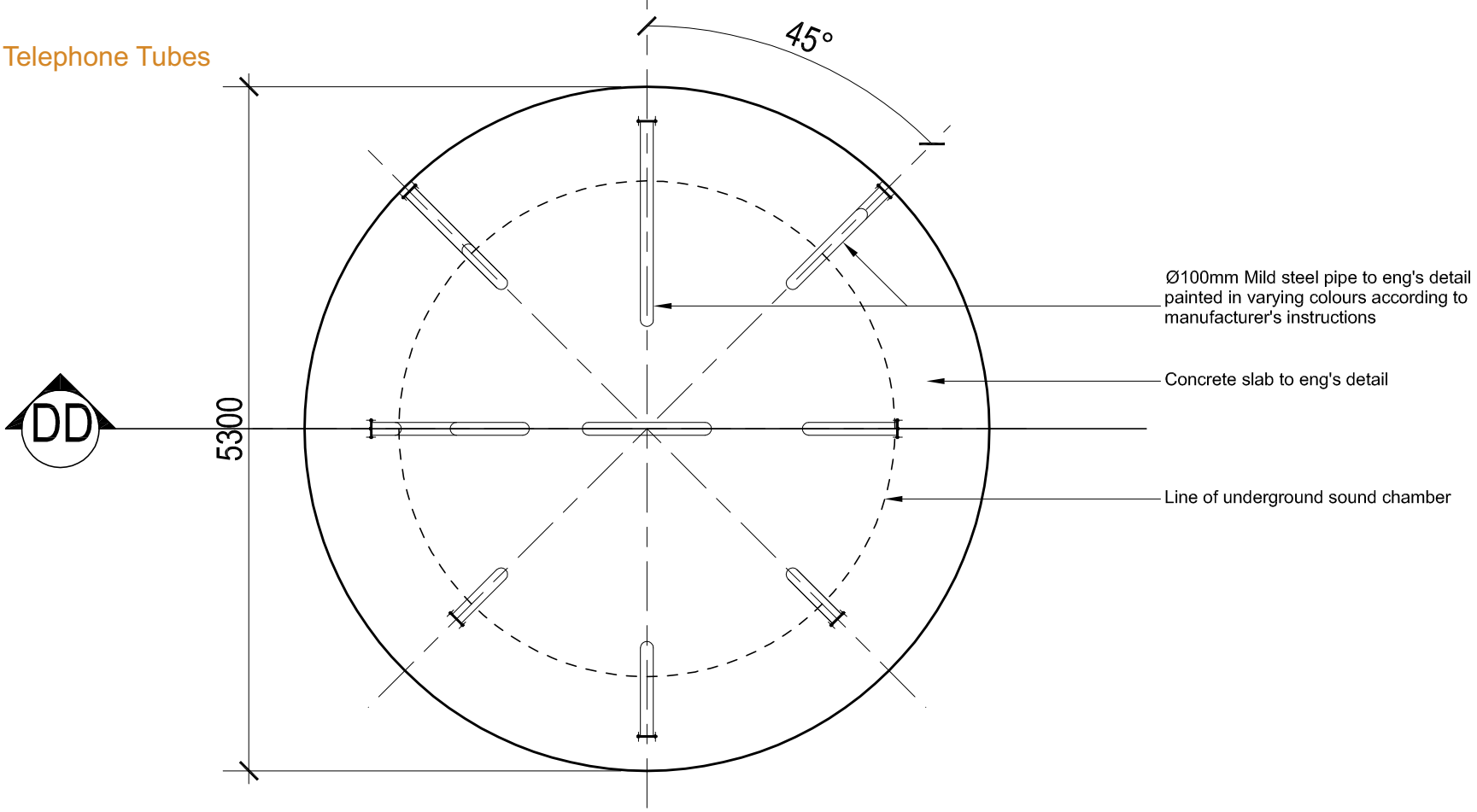
A. Mild Steel channel
B. Mild Steel Support Arms
C. Light Fitting
D. Articulation Joint
E. Mild Steel Brace
F. Mild Steel Structural Support
G. Articulation joint
H. Light Fitting
I. Round Concrete Block
J. Round Rotating Timber Gum Pole
K. Stainless Steel Rotating Arms
L. Stainless Steel Cladding
M. Mild Steel Structural Support
N. Steel plate cast into concrete
O. Concrete Foundation
P. Mild Steel Flat Base Plate
Q. Bolts
R. Sun Gear
S. Mild Steel Shaft



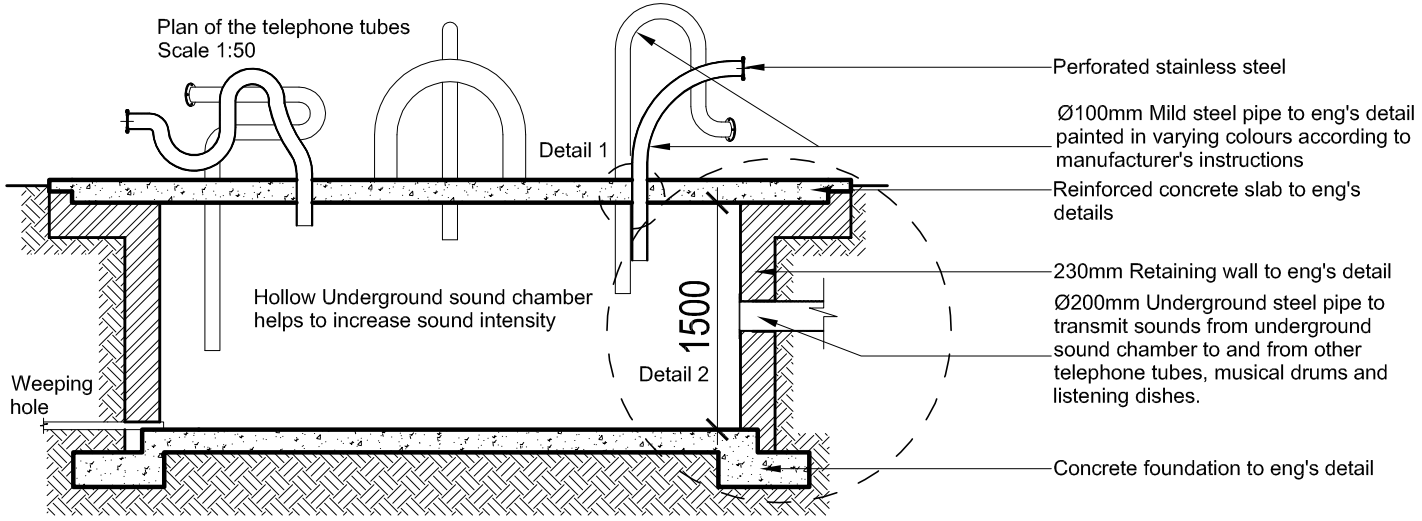




Analysis of the Rotating Column (Author: 2008)

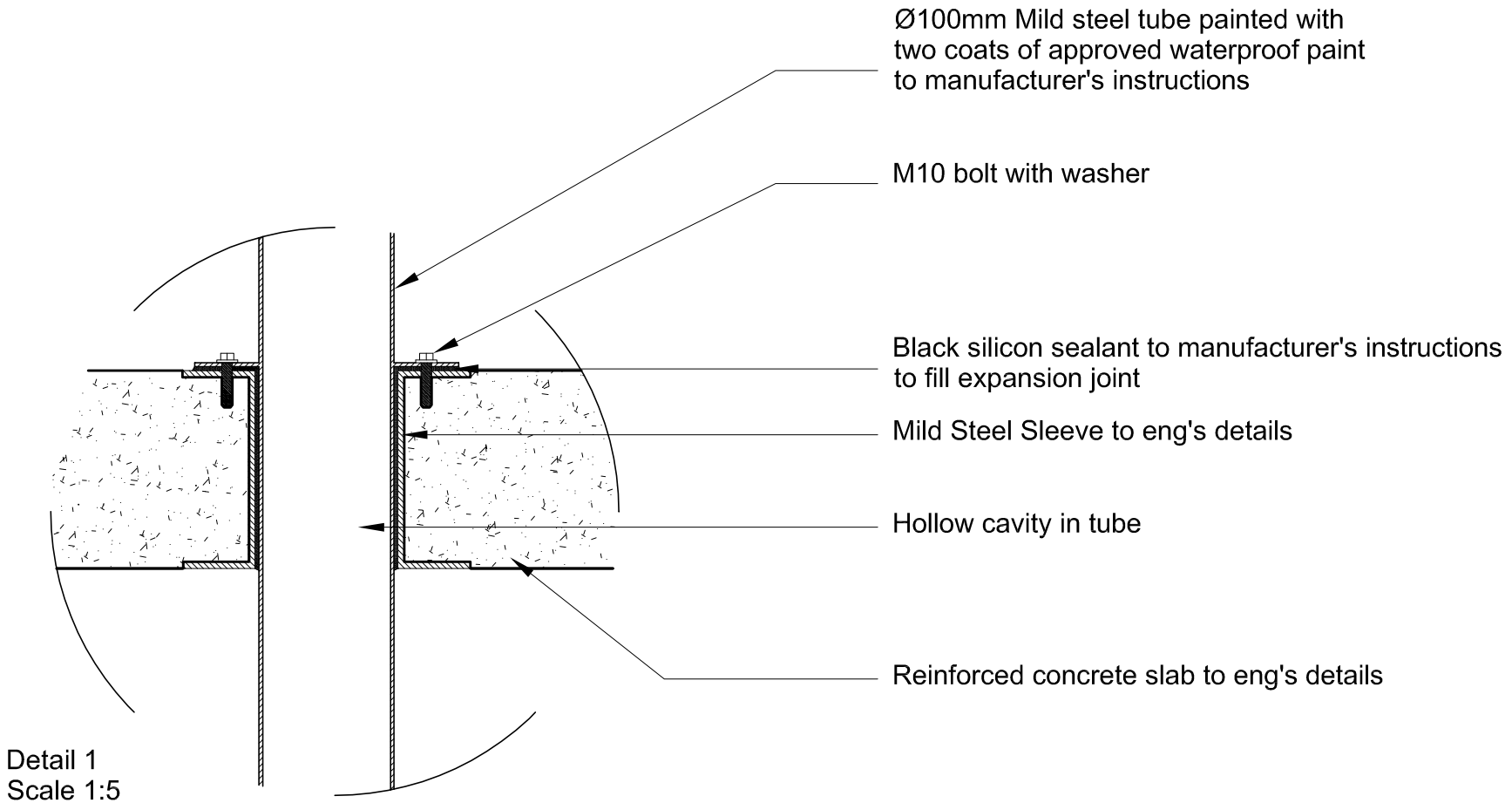


Plan of the telephone tubes
Scale 1:50

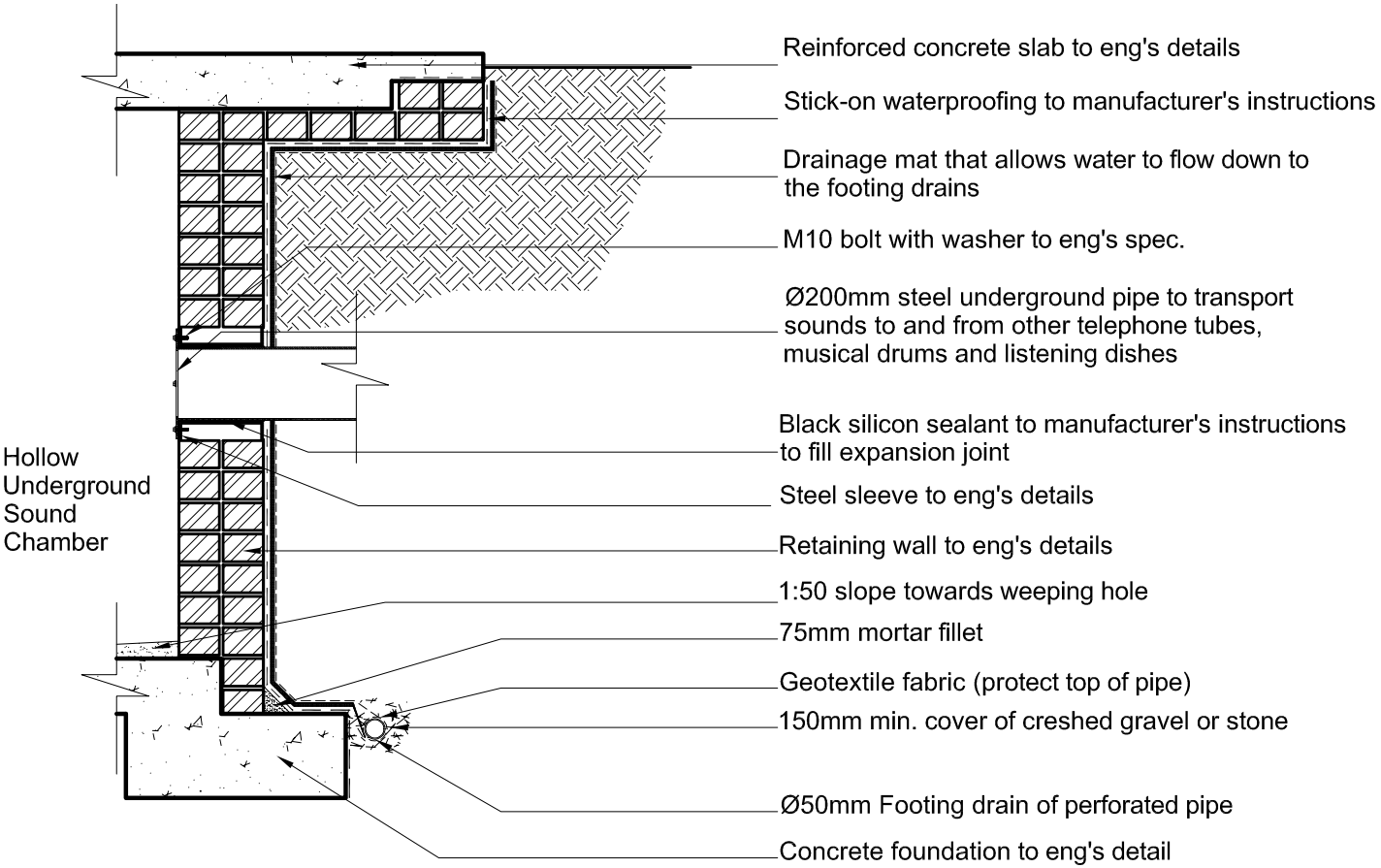


Section DD
Scale 1:50

138
Plan and Section of the Telephone Tubes (Author: 2008)



139
Joint Detail of underground chamber of the Telephone Tubes.
(Author: 2008)



Detail 2 - Retaining wall detail of telephone tubes
Scale 1:20





(www.sonicarchitecture.com):
2008. P.S. 244 Sound Carnival
Brooklyn NYC
Designer: Montoya Rodriquez Architects

Telephone tubes are curvilinear play elements that have been colour-coded and interconnected underground in an underground chamber. Children can speak into these structures which are made of painted mild steel. The ends are covered with perforated stainless steel, which not only allows the children to speak into the structures but are able to hear their own voices and those of others, which have been amplified by the undergroundchamber. Other sound that can be heard are those from the kid's bronze drums. The sculptures stimulate the sense of hearing and allow the children to communicate with one another throughout the site. They can also be used for rehabilitative purposes or as therapy. Children that have "lost their voices" due to abuse or violence may later learn to regain it by using the telephone tubes as a form of stimulation. The sculptures also work as play elements and promote free play.



Rendered image of kindergarten showing telephone tubes



Rendered image of multi-purpose space in front of toy library (Author: 2008)

Toy Library

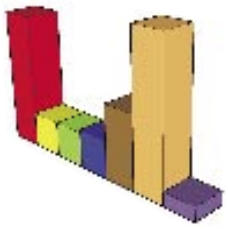


Rendered image of multi-purpose space in front of toy library (Author: 2008)



Ground Floor Plan Scale 1:100

1. Toy Library 38sqm
2.Female Toilet 10sqm
3. Male Toilet 10sqm
4. Passage 11sqm
5. Entrance Hall 21sqm
6. Craft Centre 43sqm
7.Storage 4sqm
8. Concrete Platform

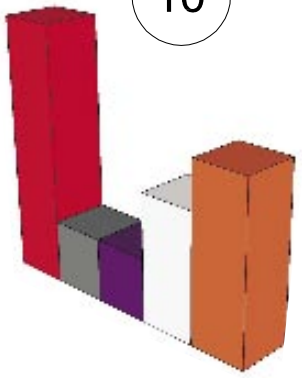


The ground floor of the toy library places emphasis on visual transparency. Both the toy library and craft centre contain curtain walls that protrude past the slab to allow full view of the basketball court and the street when on the inside and those on the outside have full view of activities on the inside. The toy library is divided into three main spaces. There are dedicated spaces for sitting on the chairs and tables, playing on the floor and a space for shelves, which is where the toys are kept. The craft centre has an open plan and the spaces are divided into the workshop space, where tables are located and a painting space nearest to the opening. The floor at the latter space allows for a fall. This is to accommodate for cleaning with a hose pipe when paint has been used. The craft centre contains a storage space on the ground floor.



First Floor Plan Scale 1:100

9. Reading Space	44sqm
10. Office	10sqm
11. Storage	10sqm
12. Double Volume	21sqm
13. Reading and Research	29sqm
14. Box Store	4sqm

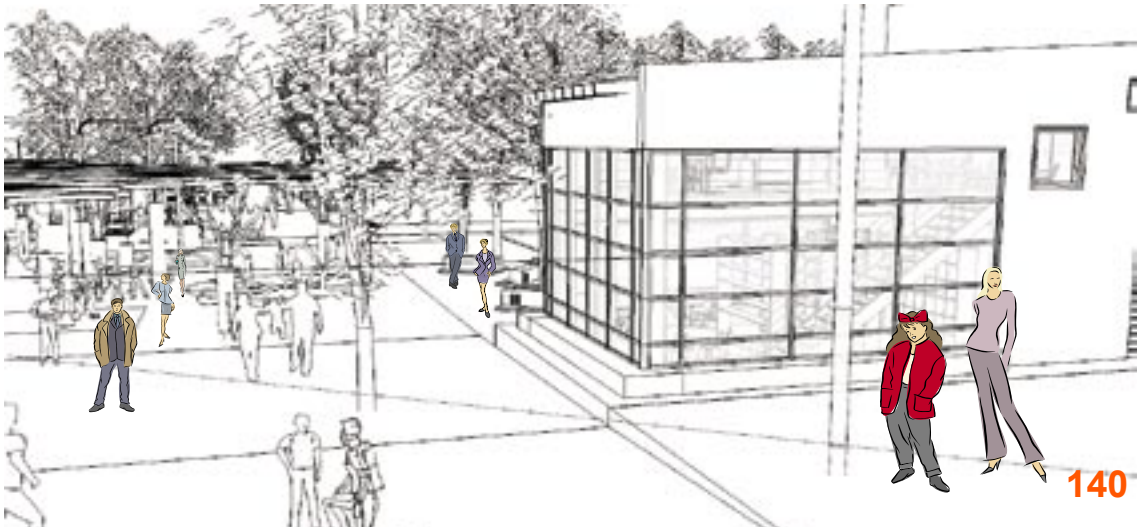


The first floor of the toy library and craft centre is a much quiter space than the ground floor. Views are captured through square windows that frame certain views. This allows light to be controlled more effectively. The upper floor contains more seating spaces. The curtain wall from the ground floor protrudes past the first floor slab and ends at a height that is comfortable for a small child to look through when standing. Adults would be able to obtain the same view when seated.

Toy Library

The toy Library is an institution that keeps and maintains developmentally appropriate play materials. It accommodates both children and adults. One is encouraged to participate in active learning by using appropriate toys to develop one's cognitive, social and motor skills. Adults are also encouraged to experience the play materials, to learn more about themselves and to develop their own skills.

One may suggest that this concept may be appropriate in Kwa Thema, as part of the proposed day care centre, to allow the services provided by the day care centre to expand to the community of Kwa Thema Central. The centre is run by child psychologists, who would use the toy library as a means of monitoring children that may have not reached a developmental stage that's appropriate for the children's age. It is a space where children that may have been abused can intimately engage in free play with other normal children, which is a source of treatment on its own.

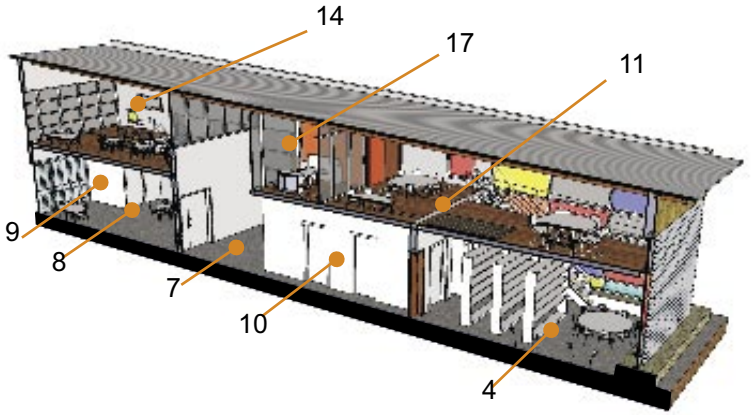




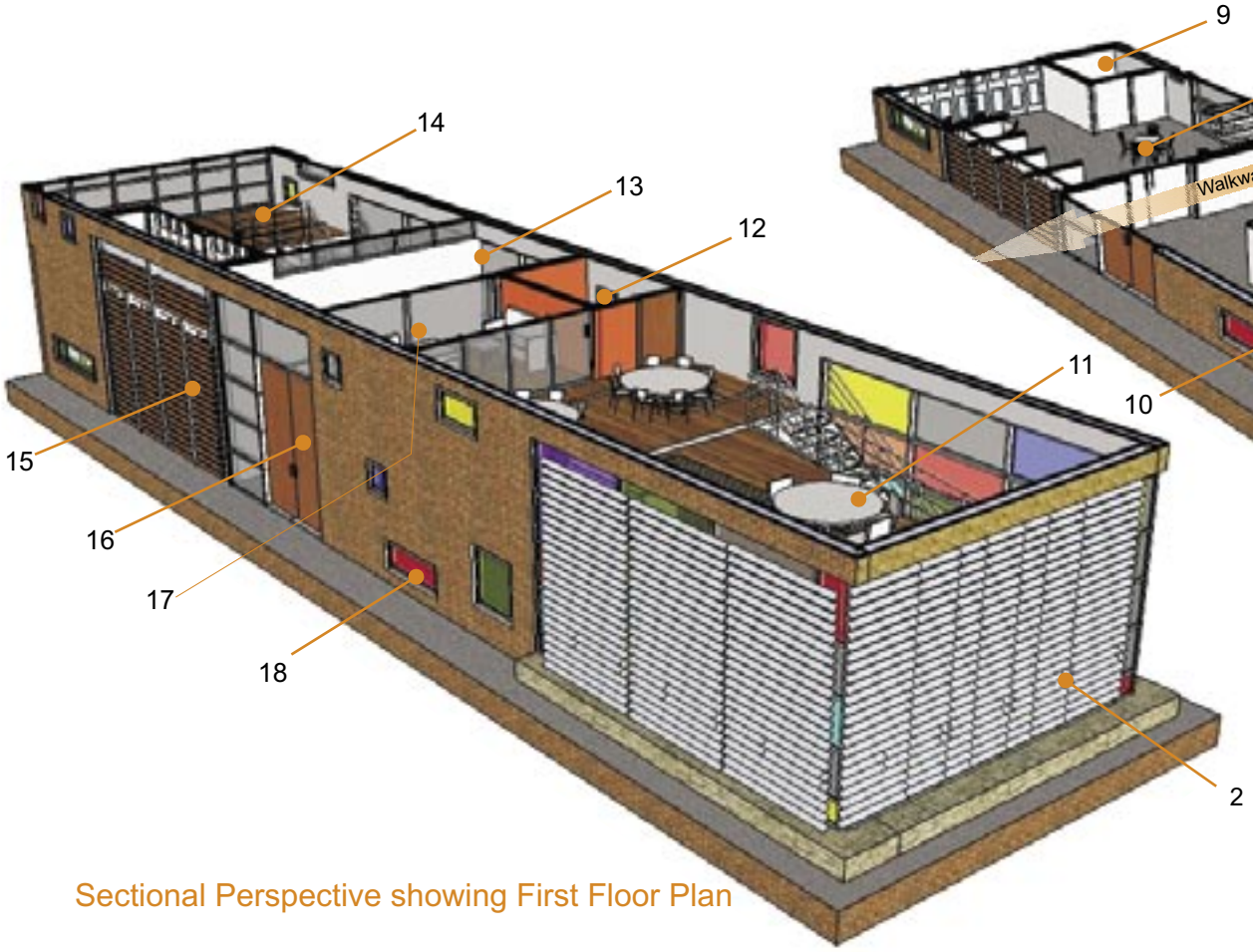
140
Rendered image ot the southern entrance to the public square. (Author: 2008)

141
Rendered Perspective of Toy Library. (Author: 2008)

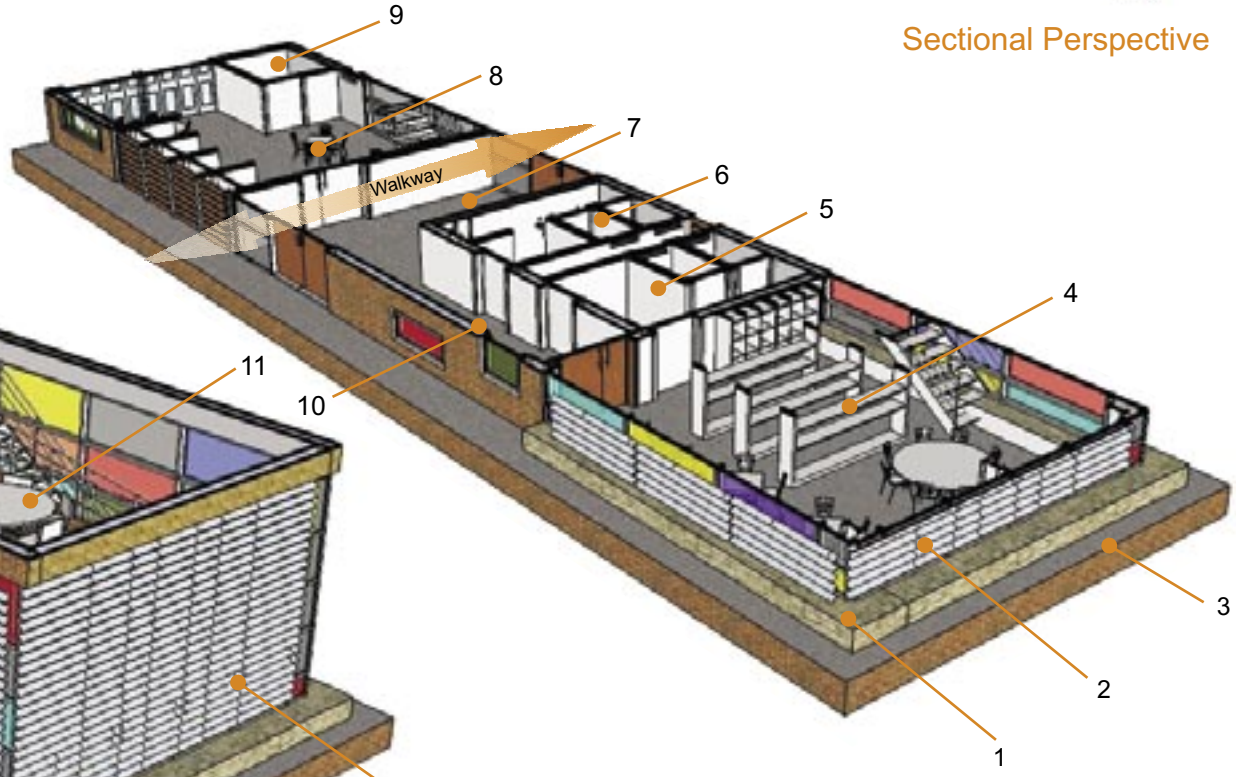
1. Stone cladding as seating
2. Pivoting Timber Louvres
3. Concrete Platform
4. Toy Library
5. Female Toilet
6. Male Toilet
7. Entrance Hall
8. Craft Centre
9. Store
10. Transitional Space/ Passage
11. Reading and Play Area
12. Toy Store
13. Double Volume Space
14. Research and Storage Area
15. Pivoting Timber Louvres
16. Main Entrance
17. Office
18. Coloured Window panels



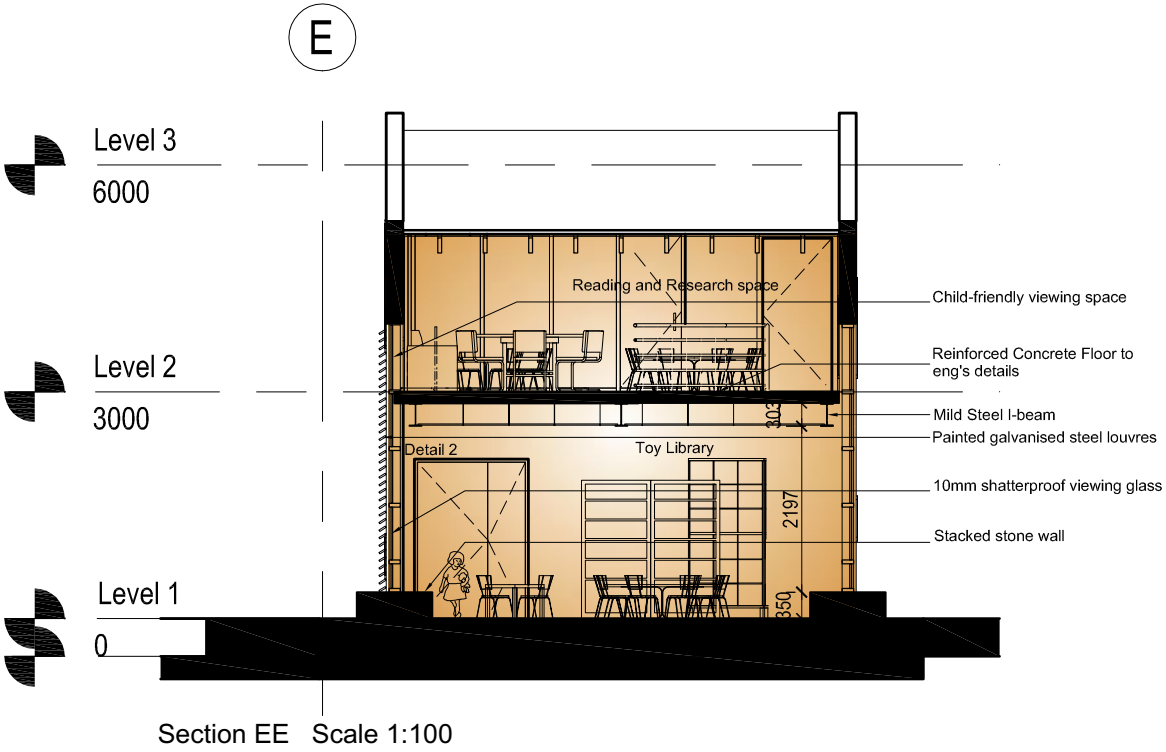
Sectional Perspective



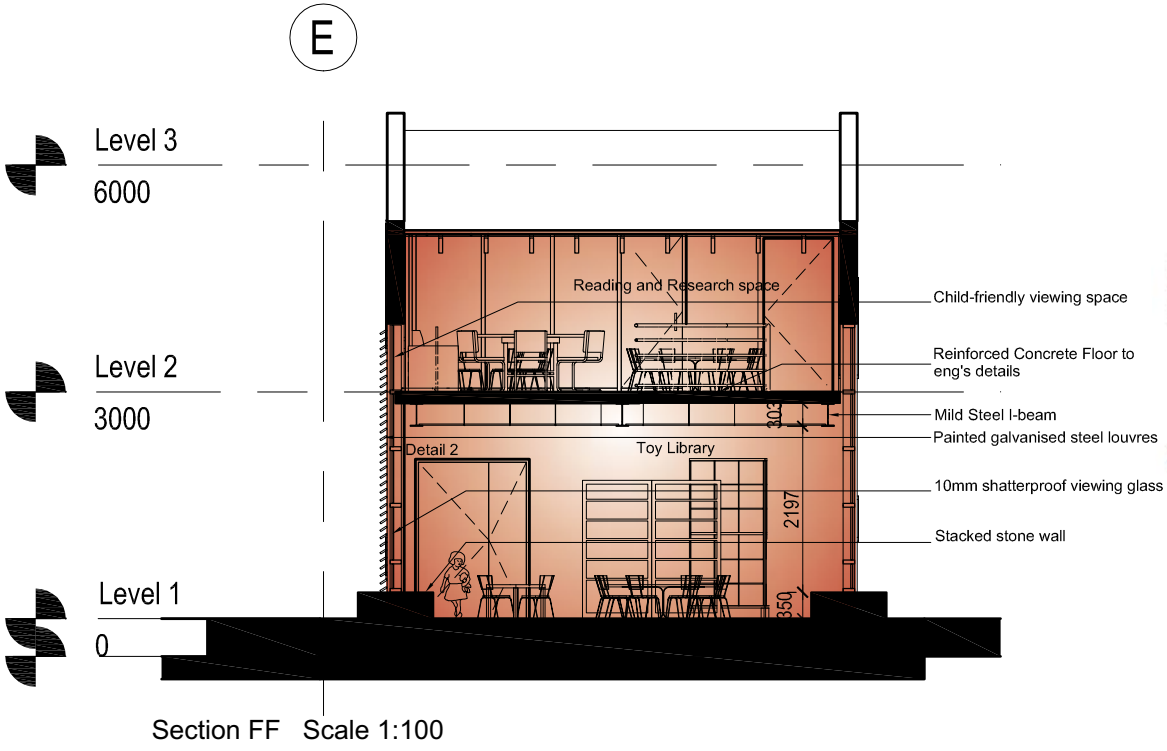
Sectional Perspective showing First Floor Plan



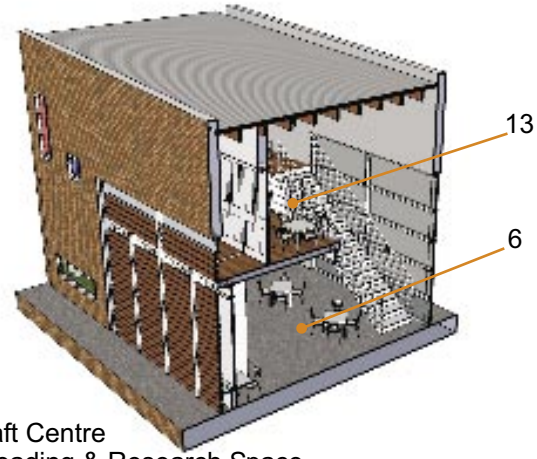
Sectional Perspective showing Ground Floor Plan



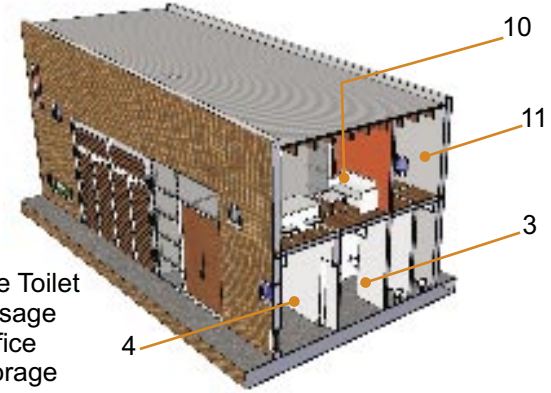
Section EE Scale 1:100



Section FF Scale 1:100



6. Craft Centre
13. Reading & Research Space

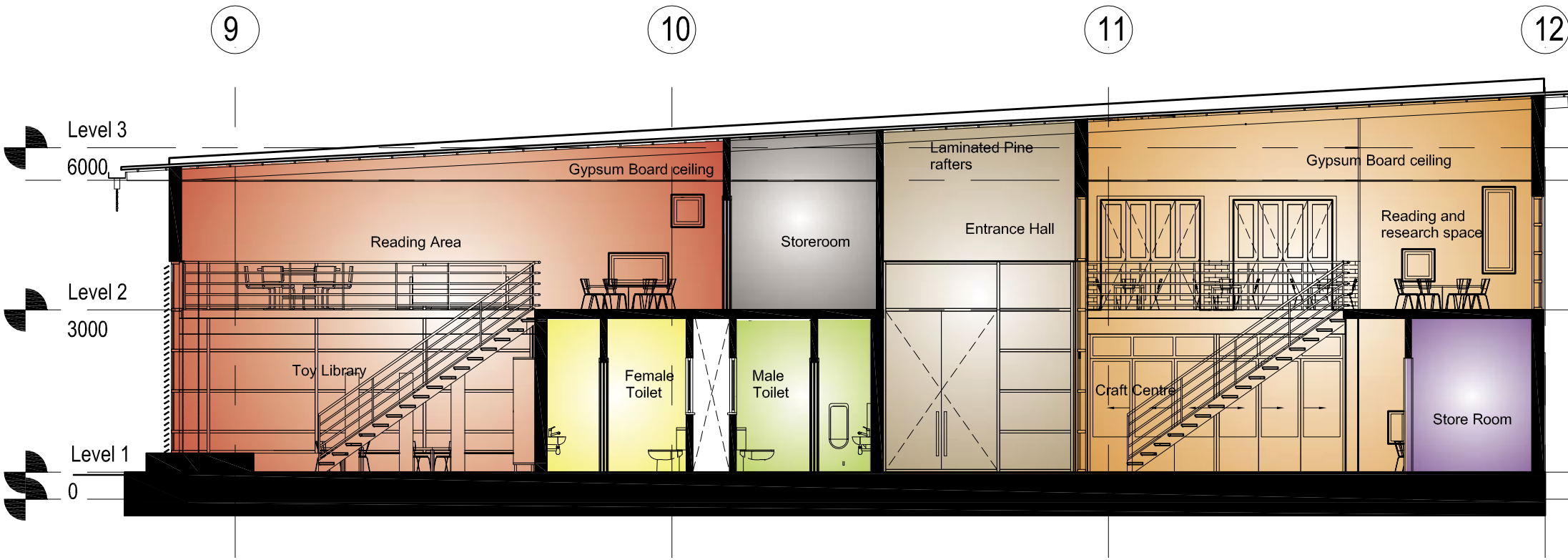


3. Male Toilet
4. Passage
10. Office
11. Storage

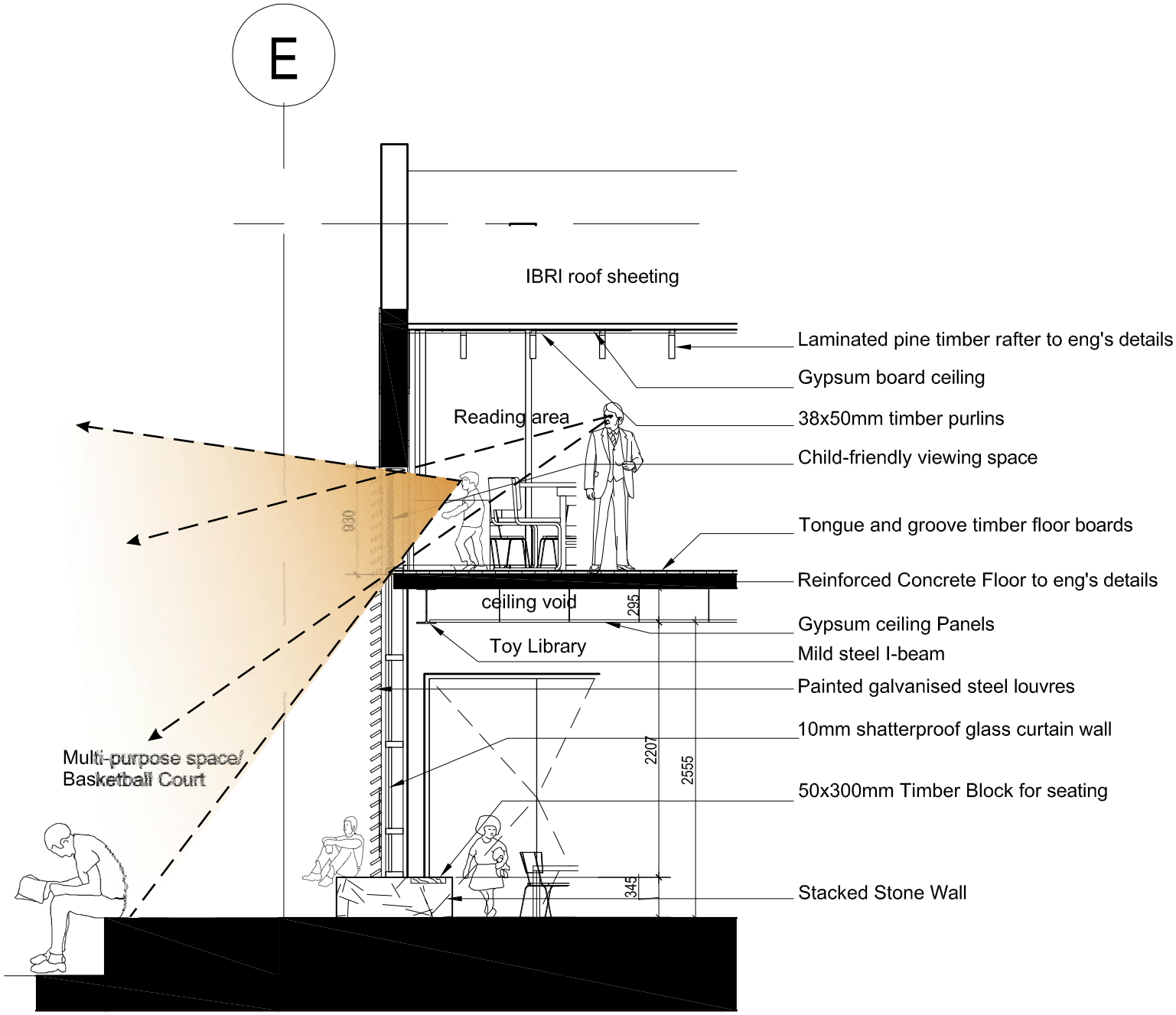


1. Toy Library
2. Reading Space

Sections & Sectional Perspectives

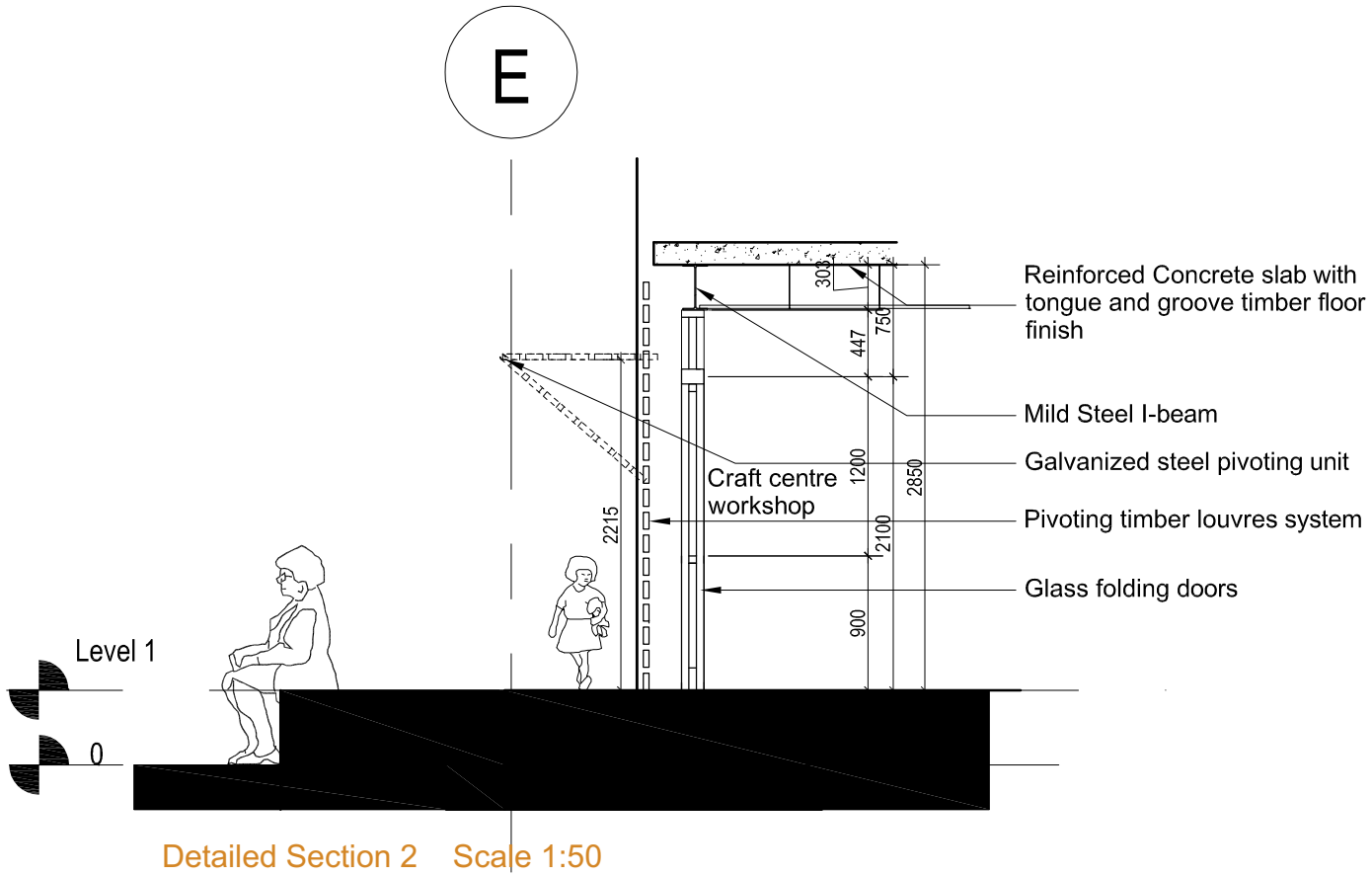


Section GG Scale 1:100



Detailed Section 1 Scale 1:50

142
Edge Detail of Toy Library
(Author: 2008)



Detailed Section 2 Scale 1:50

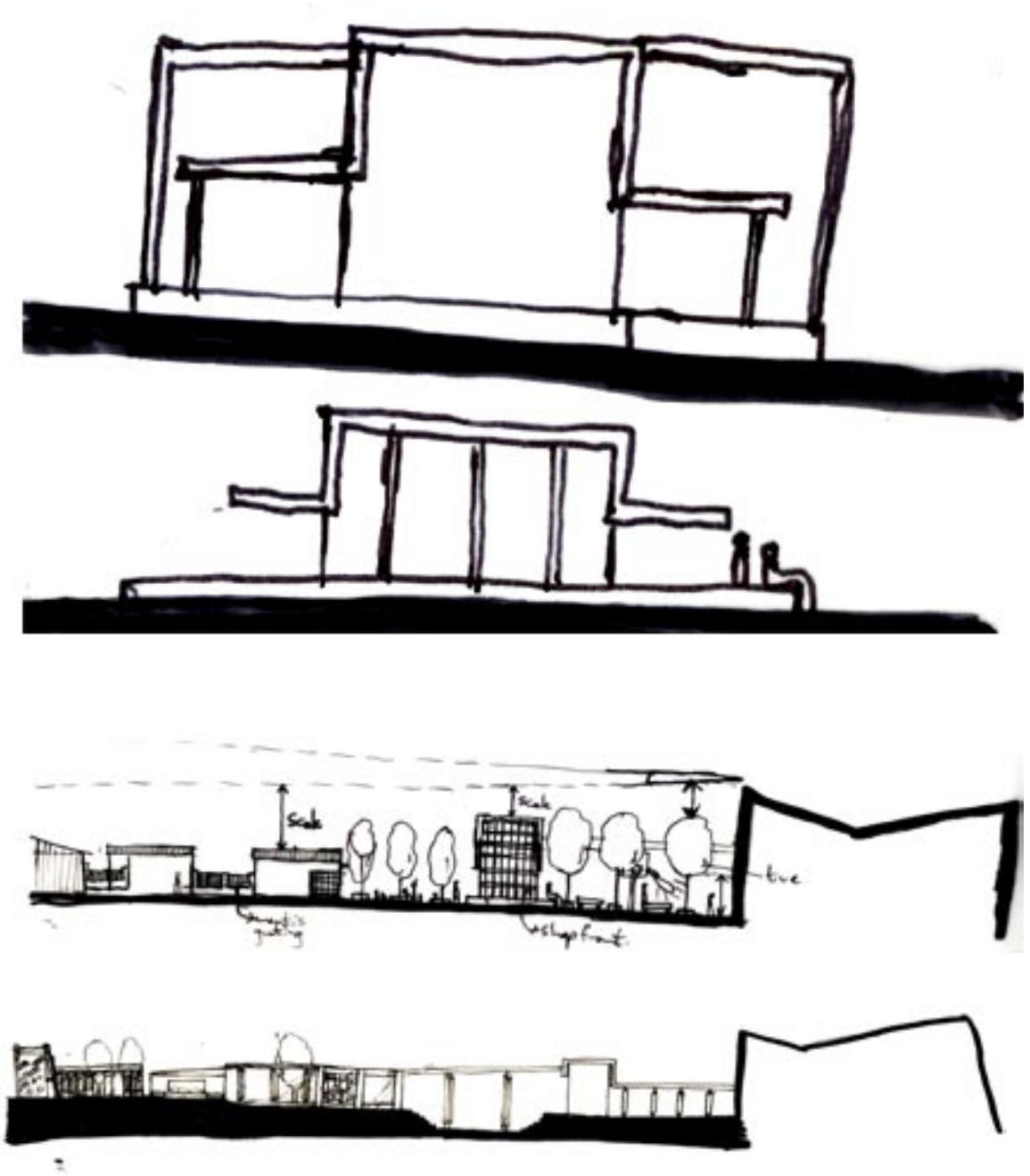
143
Detailed section of Toy Library
(Author: 2008)

Building Concept
Construction methods and materials

The concept of the toy library and craft centre was derived from the idea of a box. This would allow the opportunity for the building to be designed in a modular system that may be used in other areas in Kwa Thema. it also had to deal with the issue of scale. The community hall, located adjacent to the proposed site for the toy library is a huge, tall and bulky building. The toy library is to respond to this building by bringing the scale down from a three storey height to a double storey. The community hall also possess an interesting form, which made it an icon in Kwa Thema.

The toy library need not be an iconic building. The building was designed to humble itself to the existing hall by taking on a similar architectural language of load bearing brick, cut-out square windows and the use of IBR for roofing. The toy library is to, however, break the solidity of the building by allowing a generous use of of glass curtain walls within its design.

The toy library and craft centre have similar construction methods. One may suggest that this will also allow it to remain within context.



127
Sketches of early ideas on dealing with scale of the existing community hall. (Author: 2008)

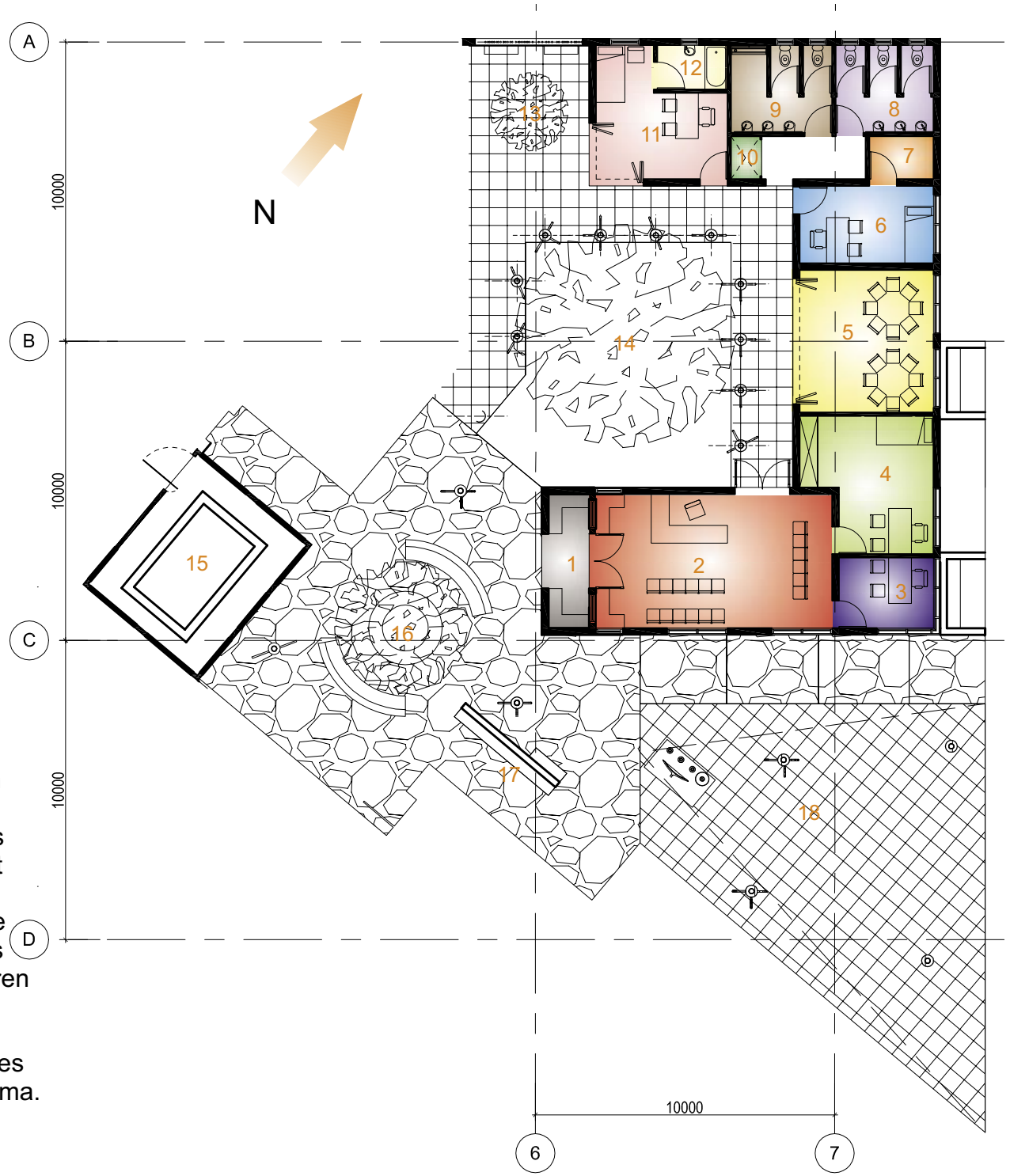
Child Wellness Centre



Rendered Image of Child Wellness Centre Courtyard (Author)

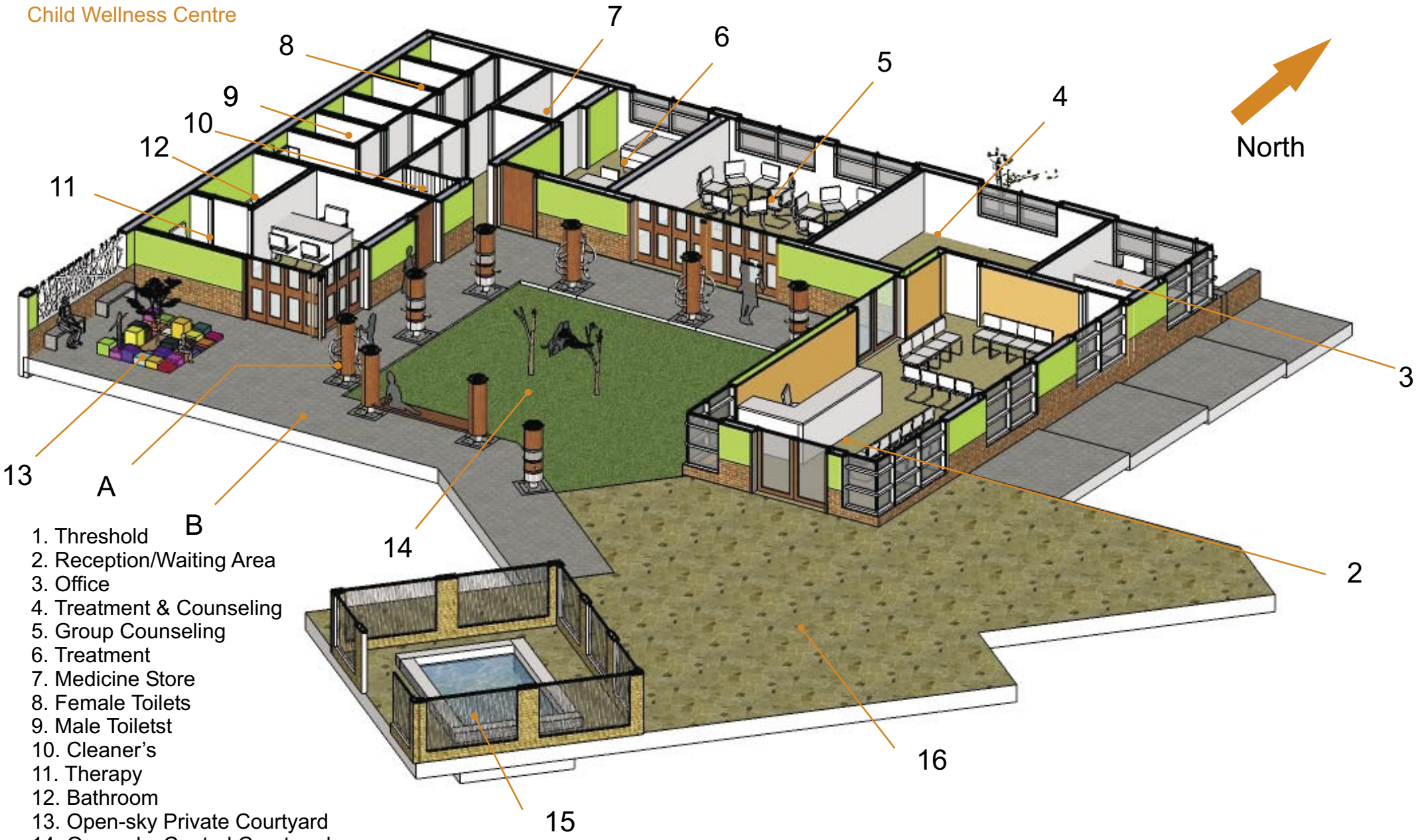
1. Threshold	6sqm
2. Reception & Waiting Area	35sqm
3.Office	7sqm
4. Treatment & Counseling	17sqm
5. Group Counseling	21 sqm
6. Treatment Room	11sqm
7. Medicine Store	3sqm
8. Female Toilet	10sqm
9. Male Toilet	10sqm
10. Cleaners	1 sqm
11. Therapy	21sqm
12. Bathroom	3sqm
13. Private Courtyard	19sqm
14. Central Courtyard	107sqm
15. Paddling Pool	8sqm
16. Entrance Courtyard	140sqm
17. Low wall with seating	
18. Entrance Ramp	109sqm

The Child wellness centre will work in conjunction with other existing clinics, but willl however, provide specialized services aimed to children from 0-16 years of age. The building is locatedat the entrance so that it may be fully accessible to the public. The U-shaped form of the building reinforces a sense of safety for the users of the facility. The child wellness centre provides treatment, therapy and rehabilitation facilities for children that have been abused, those suffering from post-traumatic stress disorder, children who are behind in development according to child milestones and provides information and counseling to the children of Kwa Thema.



Ground Floor Plan Scale 1:200

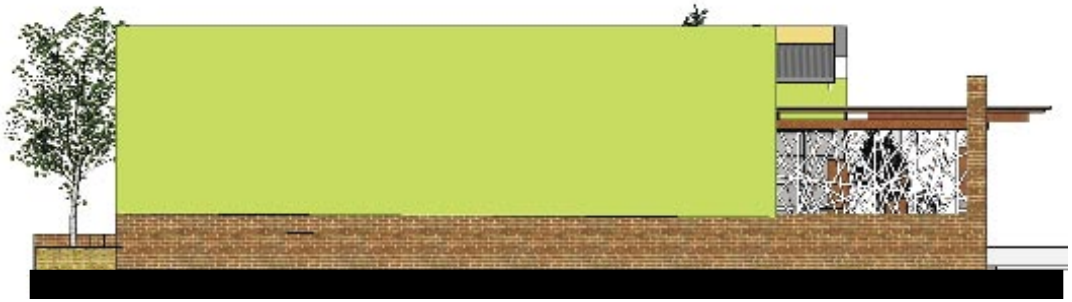
Child Wellness Centre



1. Threshold
2. Reception/Waiting Area
3. Office
4. Treatment & Counseling
5. Group Counseling
6. Treatment
7. Medicine Store
8. Female Toilets
9. Male Toiletst
10. Cleaner’s
11. Therapy
12. Bathroom
13. Open-sky Private Courtyard
14. Open-sky Central Courtyard
15. Paddling Pool
16. Entrance Courtyard

A. Play Column
B. Walkway

Sectional Perspective showing Plan



North Elevation Scale 1:100



South Elevation Scale 1:100

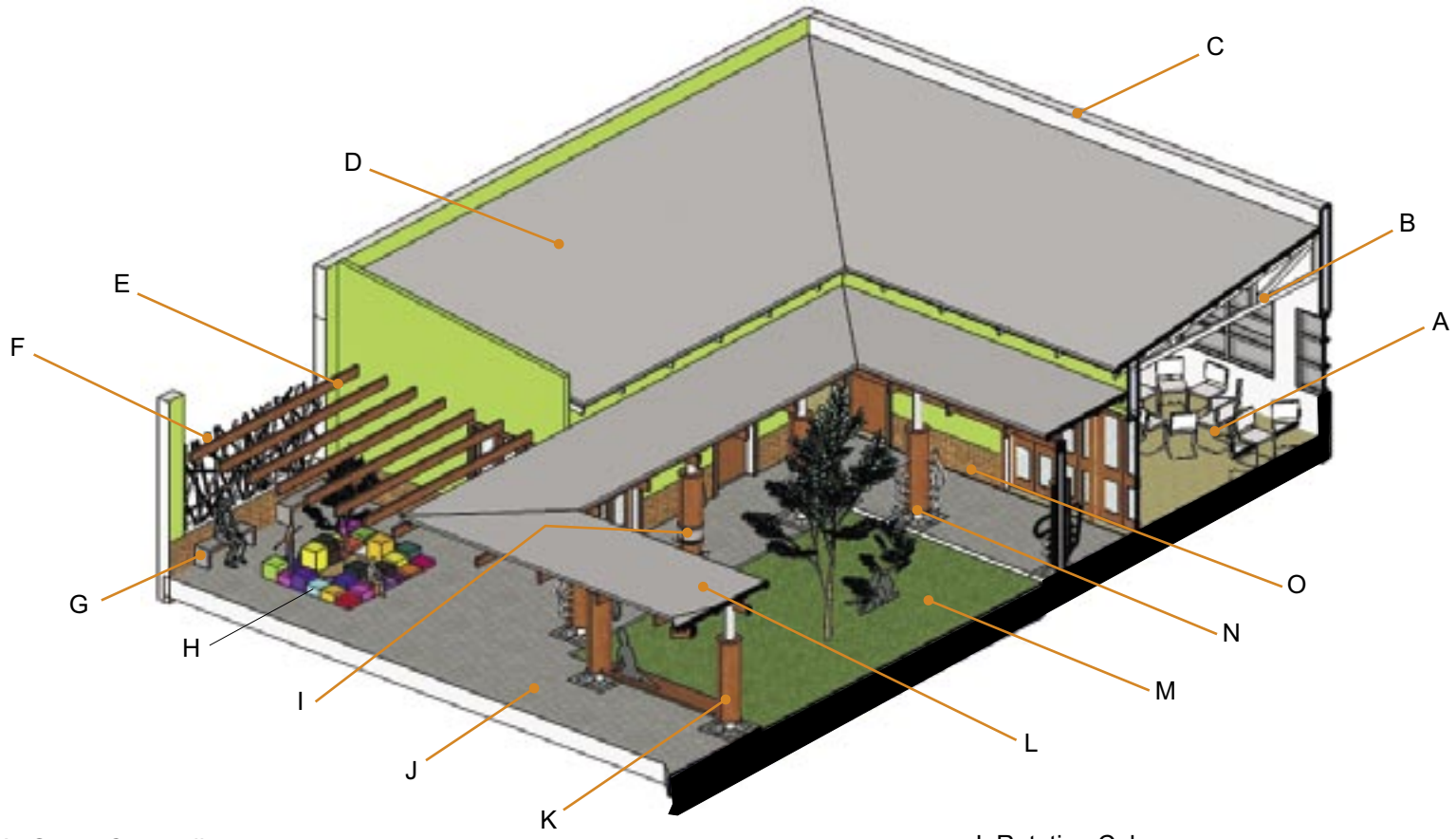


West Elevation Scale 1:100



East Elevation Scale 1:100

145
Elevations of Child Wellness Centre
(Author: 2008)



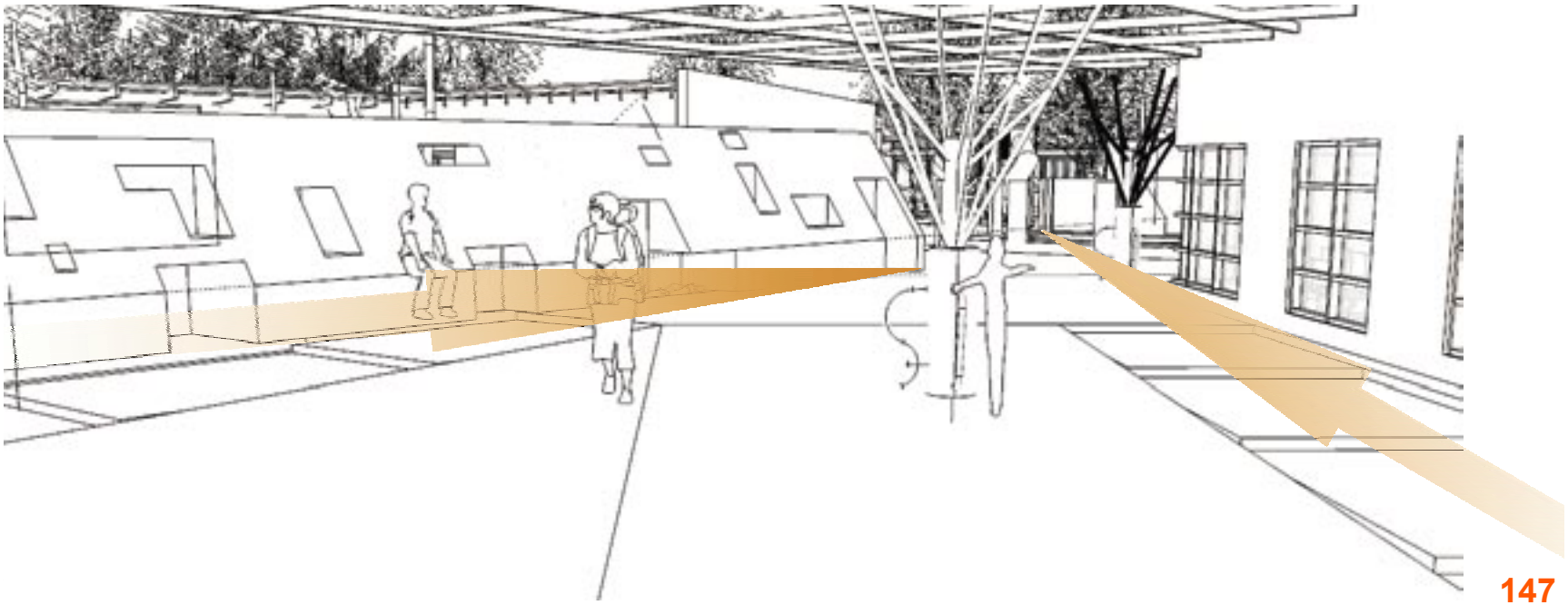
A. Group Counseling
B. Timber Trusses
C. Parapet Wall
D. IBR Roof Sheeting
E. Timber Pergola
F. Recycled reinforcing bars
G. Concrete Blocks
H. Private Courtyard with play elements
I. Rotating Column
J. Walkway
K. Structural Support Column
L. IBR Roof Sheeting covering walkway
M. Central Courtyard
N. Play Column
O. 600mm High Red Face Brick

146
Sectional Perspective through the Child Wellness Centre (Author: 2008)



Rendered image showing the creche (Author: 2008)

Day Care Centre



147

The creche caters for children from 0-2 years of age. Development at this stage is crucial as the children are susceptible to anything occupying the environment.

Access

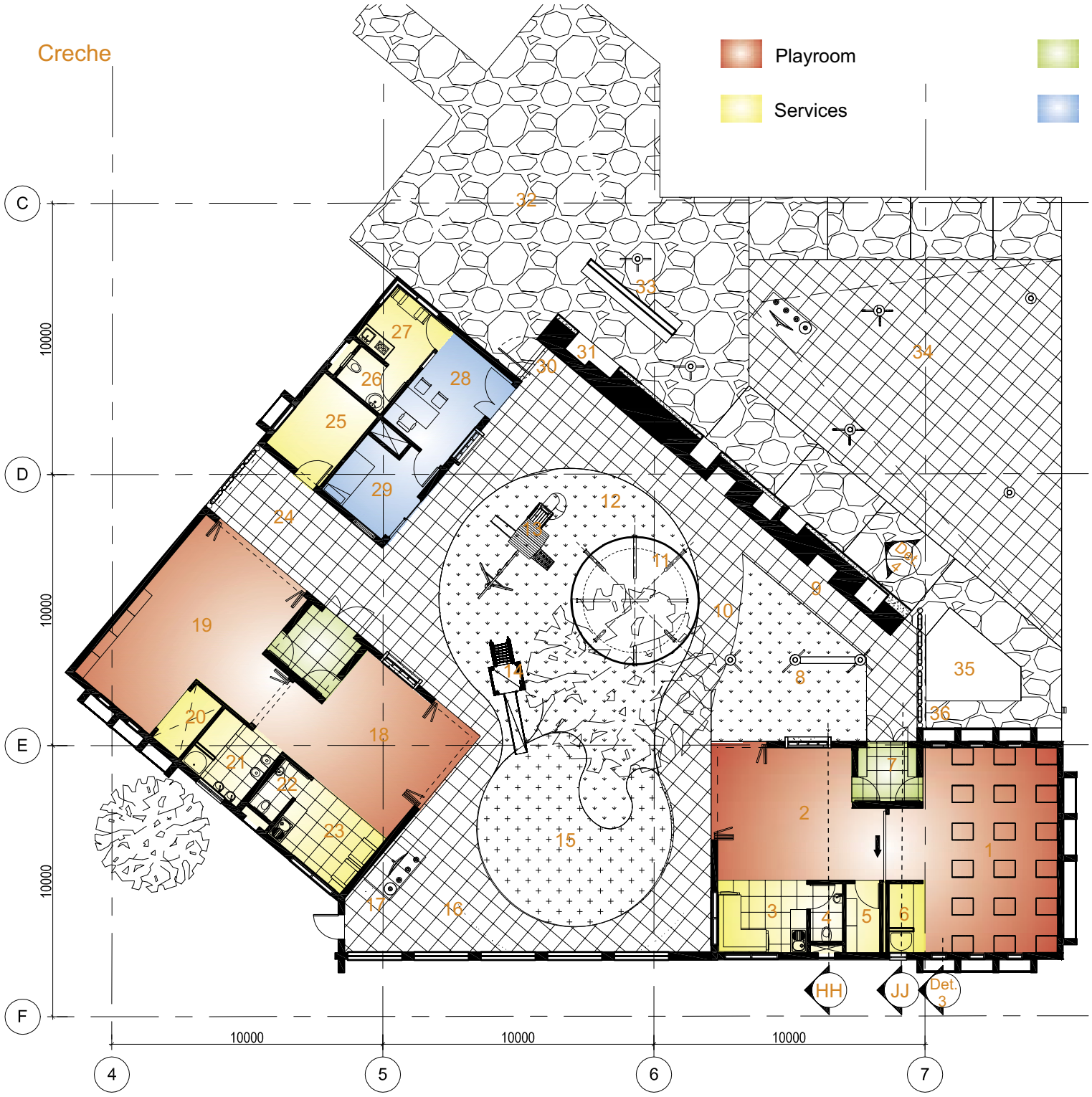
When one approaches the day care centre, one is drawn into that space by the position of the wall in relation to the child wellness centre. The ramp up at this point leads one to a courtyard, that acts as a threshold, from where one can make the decision where one is going. The courtyard is equipped with seating, play columns, low walls and kid's drums.

Upon arrival, one is made to look towards the puddling pool. It is said that water brings life and that it contains therapeutic qualities. The sounds of children playing, the smell and taste of the water, the touch of the timber play columns, the colourful sight of the buildings intends to transcend the occupiers of the space into the playful children's world of mystery and adventure. One also has a 360 degree view of the day care centre and child wellness centre from the central point of the courtyard.

Located behind the wall is the first controlled access belonging to the nursery school. The pivoting gate is low and made of mentis grating, allowing transparent views into the outdoor play ground. It is at this point that a teacher located in the teacher's block will attend to any new comers, thus ensuring the safety and security of the children.

147
Perspective of entrance to day care centre and child wellness centre. (Author: 2008)

Creche



1. Playroom (0-1yr old)	40sqm
2. Playroom (0-1yr old)	37sqm
3. Feeding Space/Kitchenette	9sqm
4. Staff Toilet	3sqm
5. Storage	3sqm
6.Change Station	2sqm
7. Entrance/Waiting Area	4sqm
8. Outside Play Space	26sqm
9. Walkway	20sqm
10.Tri-cycling Route	80sqm
11. Telephone Tubes	
12.Playground	85sqm
13.Play Set	
14.Slide	
15. Sand Pit	35sqm
16. Covered Play Space	92sqm
17. Kid's Drums & Listening Dish	
18. Playroom (1-2 yr olds)	37sqm
19. Playroom/Sleep Space (1-2yr old)	40sqm
20. Storage	3sqm
21. Change Station & Potty training	7sqm
22. Staff Toilet	3sqm
23. Feeding Space/Kitchenette	9sqm
24.Open-sky Courtyard	18sqm
25.Toy Store	9sqm
26. Staff Toilet	3sqm
27. Kitchenette	6sqm
28. Teacher/Parent Consultation	12sqm
29. Sick Room	10sqm
30. Controlled Access	
31. Concrete Play Wall	
32. Entrance Courtyard	140sqm
33. Low Wall with timber seating	
34. Entrance ramp	109sqm
35. Water Feature	
36. Tyre wall	

Ground Floor Plan Scale 1:200

Design concept

The creche accommodates children from the age of 0-2 years. The building has been conceived through the idea of stimulus using the five human senses as a vehicle to carry the idea through. The simple, yet pragmatic design of the building allows day to day functions of the creche to take place effectively, thereby further contributing to the motor, social, and cognitive development of the children at that age.

Motor Development

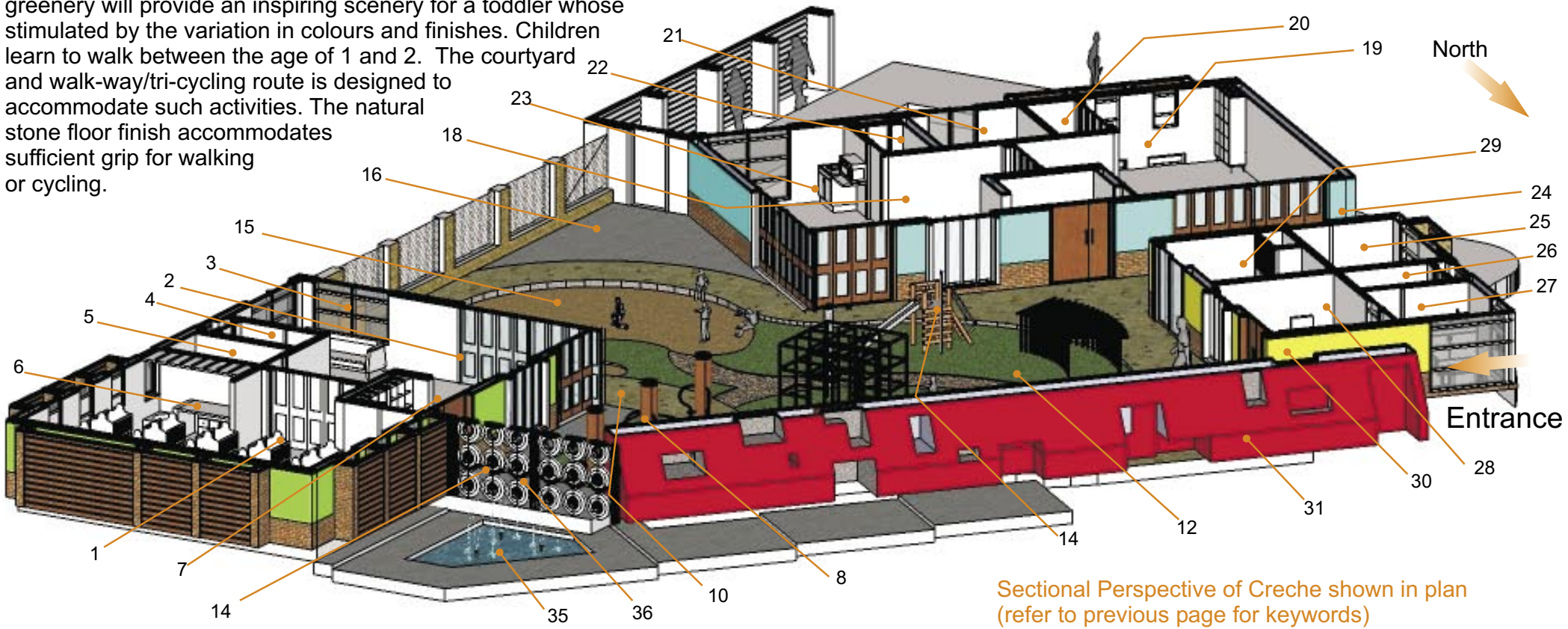
The open plan playrooms with a carpet floor finish allow the children to crawl and play on the floor at all times. The internal wall have different colours, stimulating the sense of sight. The use of primary and secondary colours on the building exteriors and interiors also stimulate this sense. The large centralized play space with some greenery will provide an inspiring scenery for a toddler whose stimulated by the variation in colours and finishes. Children learn to walk between the age of 1 and 2. The courtyard and walk-way/tri-cycling route is designed to accommodate such activities. The natural stone floor finish accommodates sufficient grip for walking or cycling.

Social

Children learn to interact and engage, not only with other children at the day care centre, but with children in the community. This is facilitated by the telephone tubes and concrete play wall. The wall has varying finishes in the niches, which creates different sound when a child speaks into it. The wall contains gratings where sound coming from telephone tubes and kid's drums and listening dishes may be heard. Stimulation through sound helps to develop the children's social skills, which affects his sense of identity. Children who were once abused can now have an opportunity to find their voice and BE HEARD!

Cognitive

The day care centre allows the children to learn through play. The contrast in materials and colours evoke certain emotions in children. This not only allows them to learn, but may help them to associate certain emotions with certain materials, thereby giving the children the opportunity to deal with the negative past.



Sectional Perspective of Creche shown in plan
(refer to previous page for keywords)



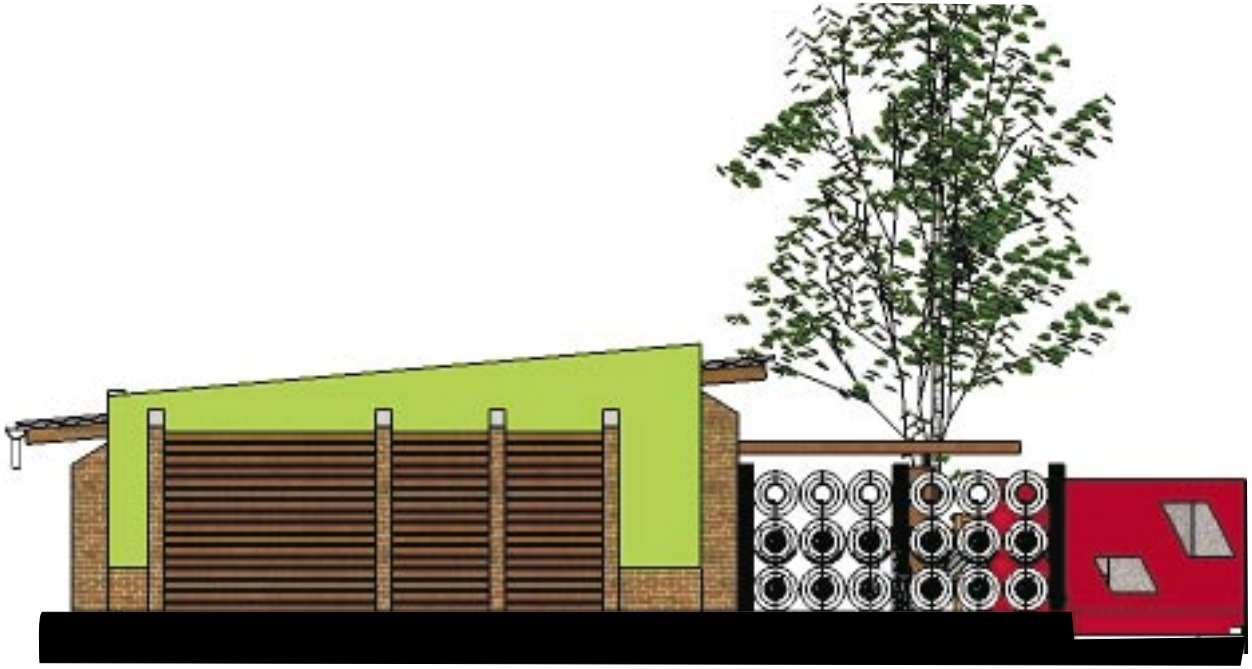
North Elevation Scale 1: 100



South Elevation Scale 1:100



West Elevation Scale 1:100



East Elevation scale 1:100

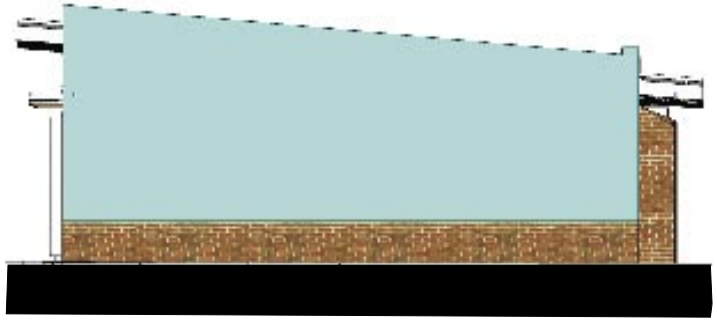
Elevations of Playroom (0-1 yr old)



North Elevation Scale 1: 100



South Elevation Scale 1:100

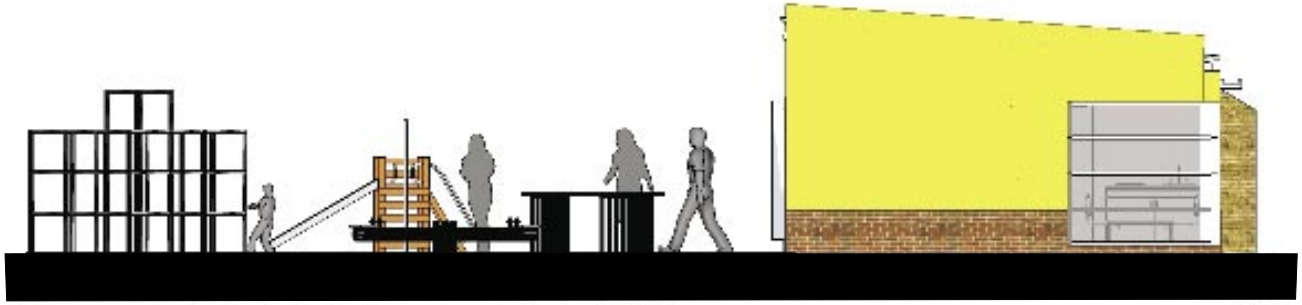


West Elevation Scale 1:100



East Elevation scale 1:100

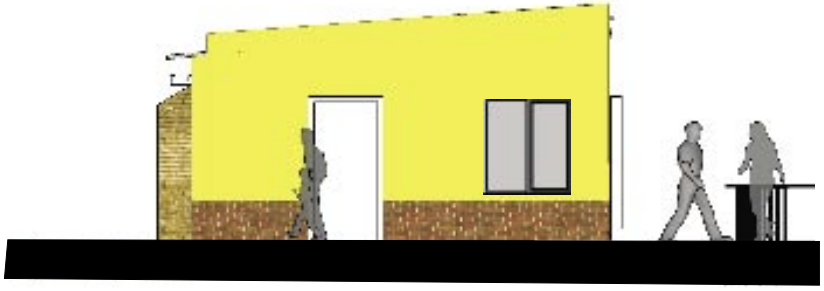
Elevations



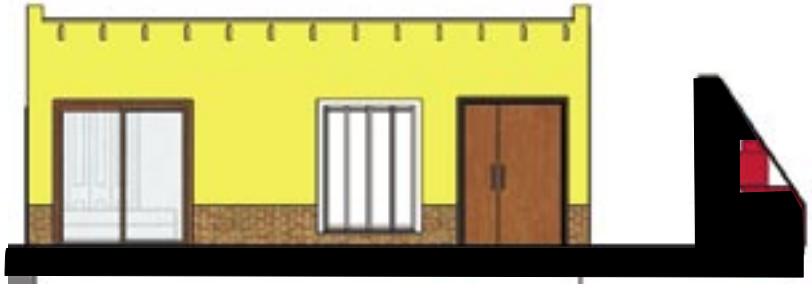
North Elevation Scale 1: 100



West Elevation Scale 1:100



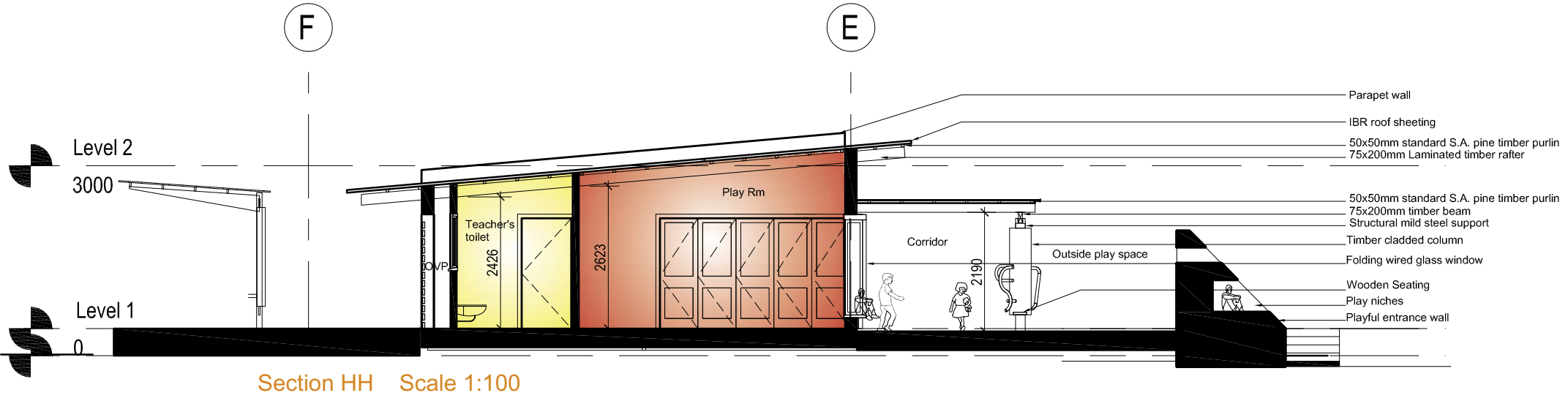
South Elevation Scale 1:100



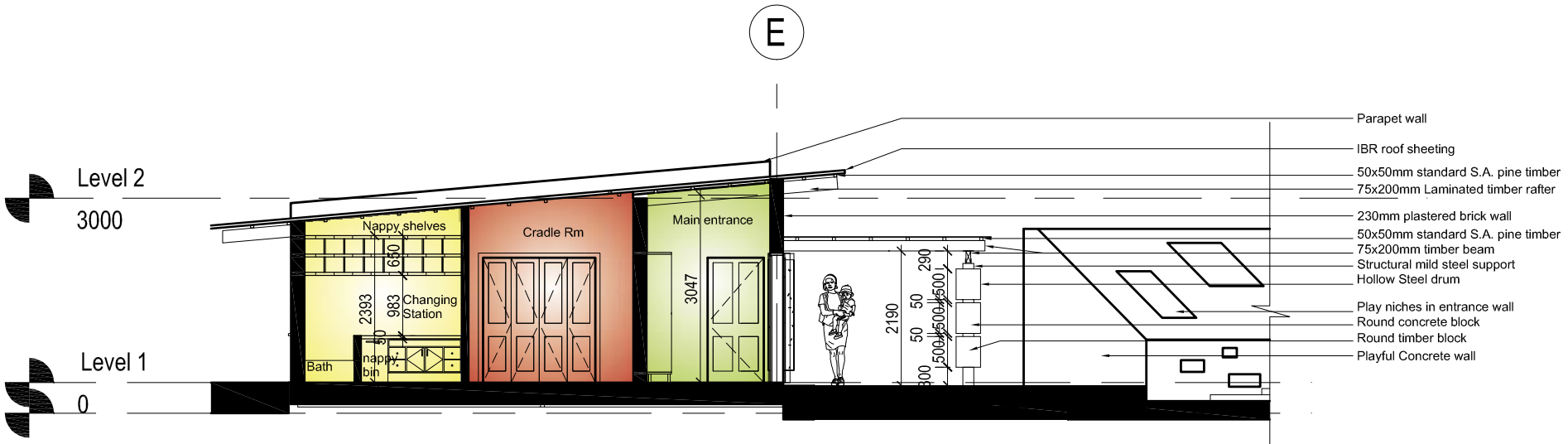
East Elevation scale 1:100

Elevations of Teacher's Block

Sections

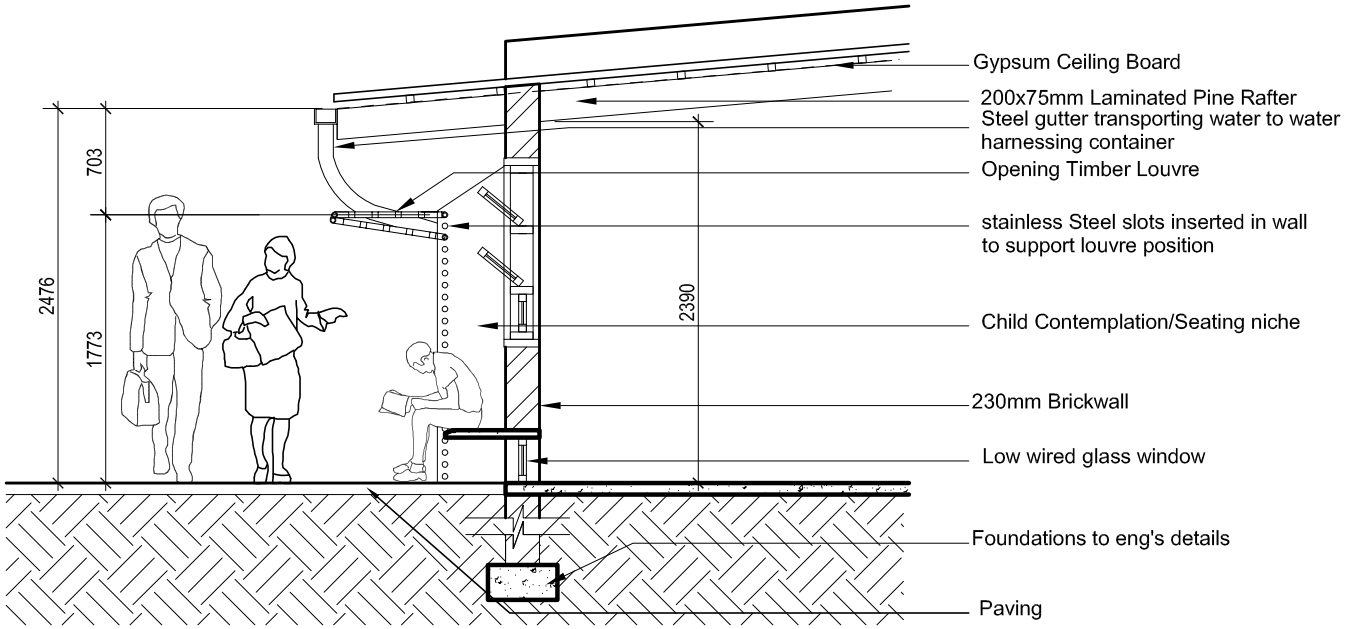


Section HH Scale 1:100



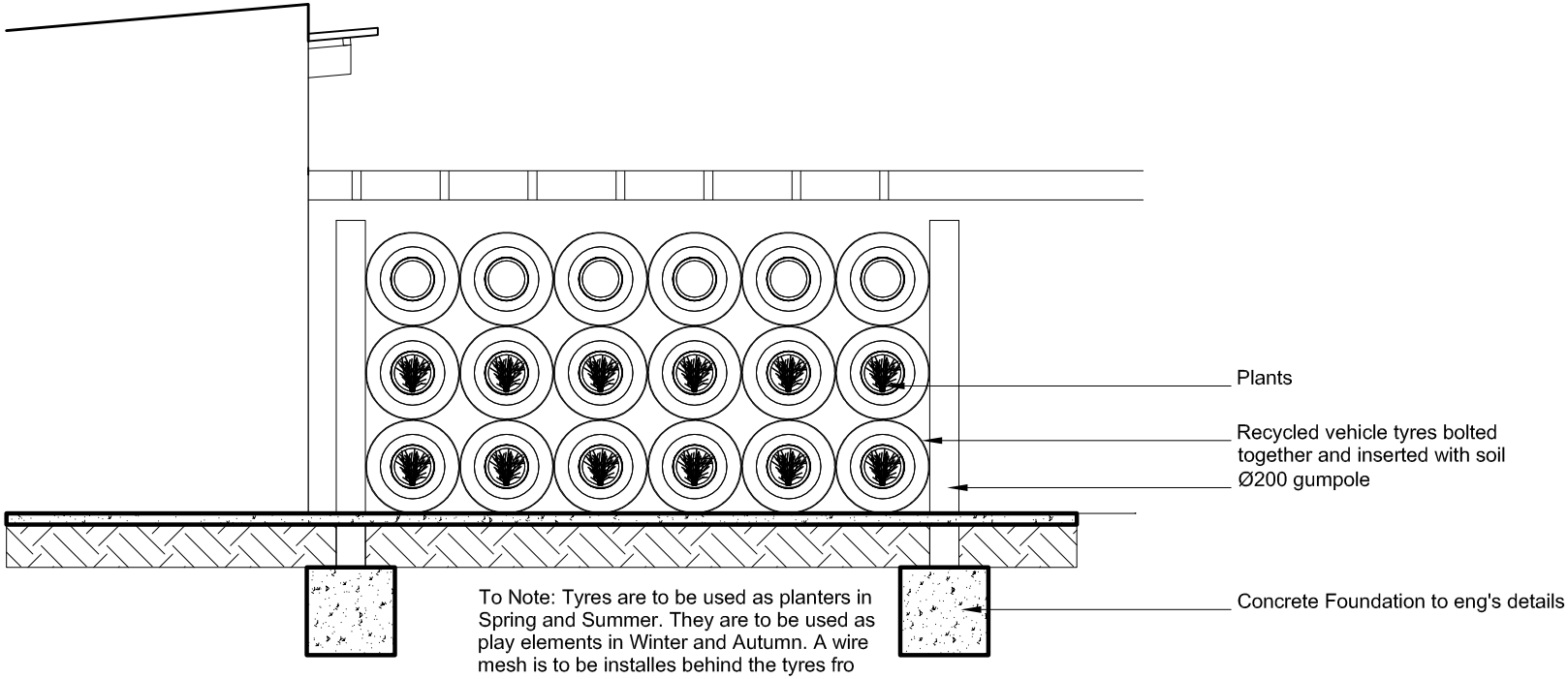
Section JJ Scale 1:100

Section through Playroom (0-1 yr old)



Detail 3 Scale 1:50

148

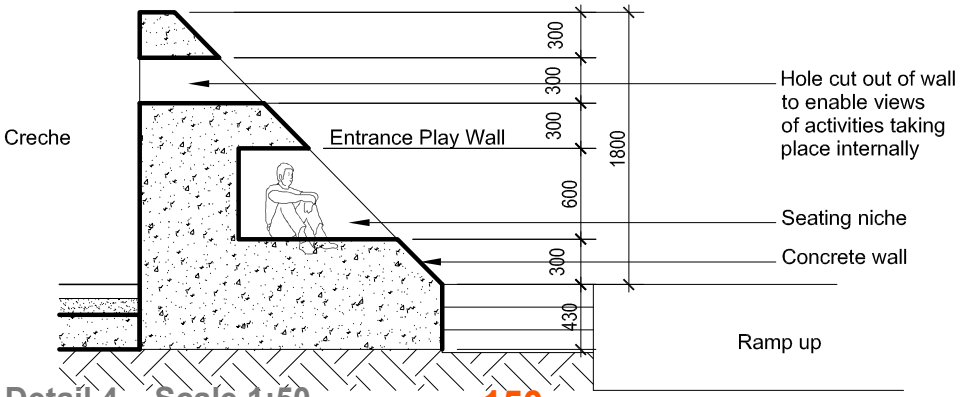


Detail of Tyre Wall Scale 1:50

149

148
Edge Detail of Playroom (0-1yr old) (Author: 2008)

148
Detail of Tyre Planters (Author: 2008)



Detail 4 Scale 1:50

150



151

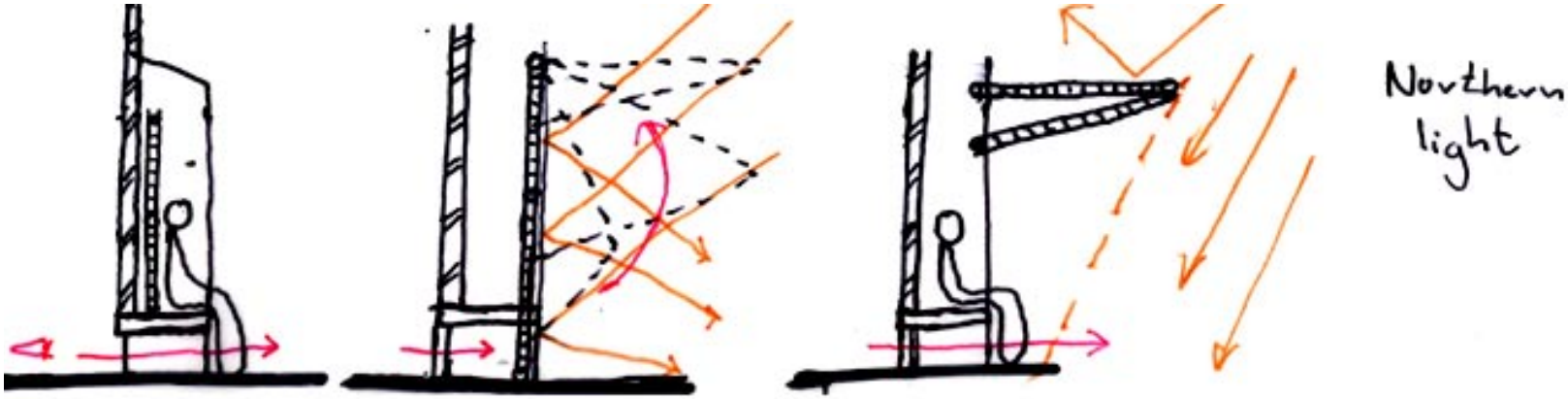
Entrance Play Wall

The wall encourages children in the community to engage with those in the centre through even the mere use of their voices as each of them play on different sides. Varying textures will be applied on the inside of the walls to stimulate the sense of touch and to evoke a sense of curiosity in the children, for them to explore other niches in the wall with different materials.

Folding Louvre

The folding louvres will be made from treated timber and will be attached to the outside of the building. People passing by are allowed to adjust the louvres to provide them with a resting or seating space. This notion encourages interaction in the community of Kwa Thema and embraces passive surveillance.

The timber folding louvres seem to be a prominent feature in Northern African Architecture. Not only do the louvres promote sustainablity as they are made from natural materials, but they are also cost effective. They provide a sufficient way of keeping the elements out, noise reduction, provision of shade, keeping out light when the children are sleeping, creating interesting shadows on the floor that stimulate children to play and it seems that they add to the aesthetics of the building and a complexity in the materials.

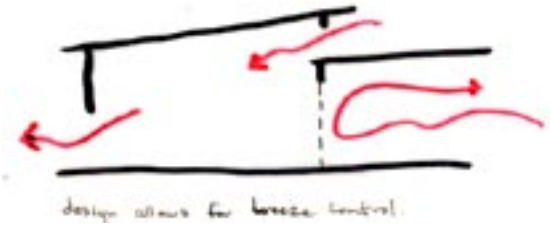


152

150
Section through
Concrete Play Wall
(Author: 2008)

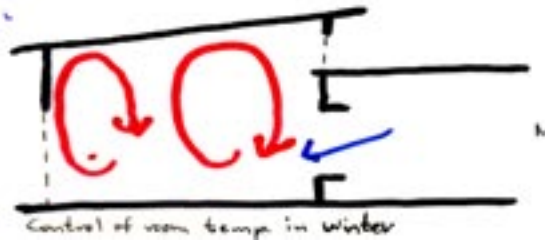
151
Sketch of pivoting
timber louvre.
(Author: 2008)

152
Analytical sketches of
pivoting louvre
(Author: 2008)



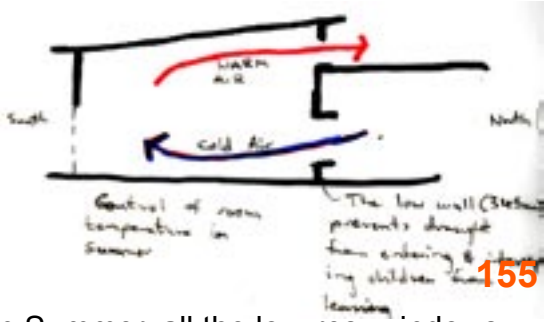
153

The building(s) are designed with changes in climatic conditions in mind. Children seem to be very susceptible to changes in the climate, thus the buildings need to have natural and inexpensive ways of controlling the internal conditions.



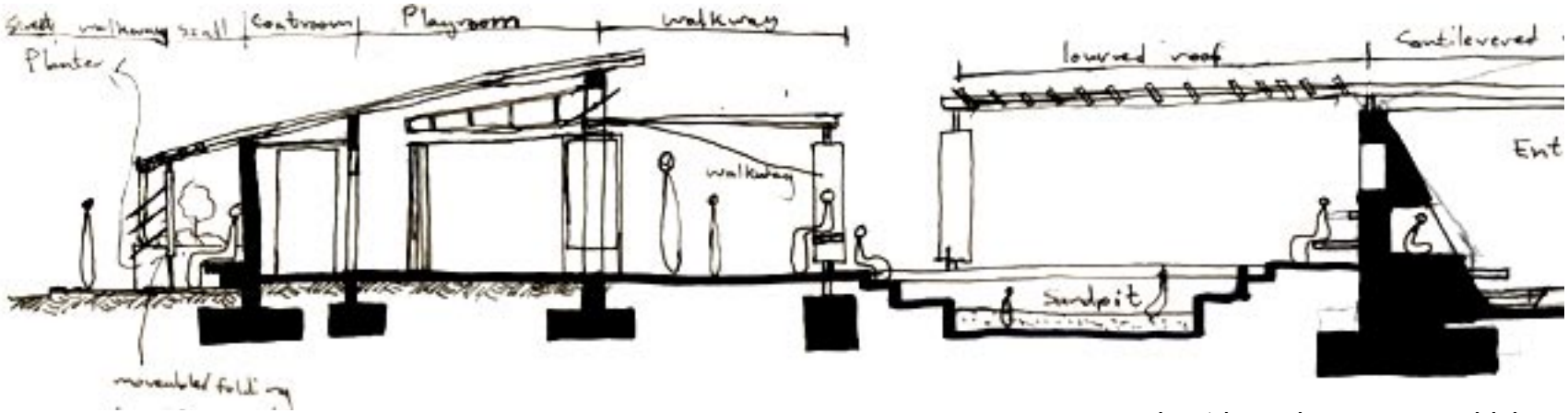
154

In Winter, the windows located along the south facade may remain close together with the manual timber louvres located infront of them. This will cause heat to be trapped and warm air will circulate in the playrooms, keeping the spaces warm.



155

In Summer, all the louvres, windows and folding doors may be kept open. This may encourage the children to play outdoors. It also brings the outdoors to the inside and visa versa. The playrooms have been planned such that they will open out onto



Windows are located both along the front and back facade to allow cross ventilation to prevail throughout the building. Some day care centres in Kwa Thema fail in this aspect, thereby, creating conditions for illness and disease.

North light can penetrate the clerestorey window to keep the air warm. The side folding window may be kept slightly open during this time to allow a continuous flow of fresh air into the playrooms.

covered outdoor play spaces, which further extends the groups of children and encourages them to engage and interact with one another.

156

153
Analytical sketch of natural climate control.
(Author: 2008)

154
Analytical sketch of natural climate control in Winter.
(Author: 2008)

155
Analytical sketch of natural climate control in Summer.
(Author: 2008)

156
Sketch of typical section through playrooms.
(Author: 2008)

Kindergarten

The kindergarten is has been designed very much similar to the nursery school/creche. The school accommodates children from the age of 3-6 years. One may suggest that it seems important to separate the creche from the kindergarten, as the different groups have different needs for their development.

Access

The kindergarten is accessed via the main entrance. Once one arrives in the courtyard, a gate will lead one towards the admin block, from where one may be directed towards the correct playroom.

Design concept and Approach

The architectural approach of the kindergarten is similar to that of the creche. The major differences are the sizes of the playrooms since the older children require more space to run around in. Load bearing brick with plastered walls, which are painted in different colours to encourage the children to acknowledge their identity with a particular group of children. The spaces are more generous because the playrooms are more organised. Some important features are the service blocks, which anchor the private courtyards. They spaces have been divided according to the children's needs and designed to their scale. The service blocks contain the entrance hall with seating. The back wall is used as a display space for the work that the children have done. The coat rooms proceed from there and contain named shelves in which the children store their bags and extra clothing. The blocks also contain an office that belong to the head mistress, store rooms, a toilet for the teachers and a separate toilet for the children. The children's toilet has an open plan as children at that age don't require much privacy; a storage space for the teachers and cleaners.

The playrooms have been divided into four spaces, namely the common room where desks and chairs are located, the building space, group work or sleep space with a movable round table and an intimate space.



157
Rendered image showing Kindergarten playground (Author: 2008)



1. Public Courtyard
2. Walkway
3. Covered Entrance Foyer
4. Entrance
5. Tuck Shop
6. Entrance
7. Multi-purpose Hall 80sqm
8. Removable Stage Space
9. Kitchen 23sqm
10. Pantry 4sqm
11. Male Toilet 12sqm
12. Female Toilet 10sqm
13. Paraplegic Toilet 5sqm
14. Waste Collection with access control 28sqm
15. Laundry 5sqm
16. Entrance/Waiting Area 7sqm
17. Coat Rm 5sqm
18. Store 2sqm
19. Office 9sqm
20. Staff Toilet 4sqm
21. Children's Toilet 10sqm
22. Cleaners 1sqm
23. Bonding/Building 11sqm
24. Common Space 40sqm
25. Intimate Space/Make-belief 16sqm
26. Group Work/Sleep Space 25sqm
27. Group Work/Sleep Space 25sqm
28. Intimate Space/Make-belief 16sqm
29. Bonding/Building 11sqm
30. Common Space 40sqm
31. Coat Room 5sqm
32. Entrance/ Waiting Area 7sqm
33. Coat Rm 5sqm
34. Children's Toilet 10sqm
35. Staff Toilet 4sqm
36. Office 9sqm
37. Bonding/Building 19sqm
38. Common Space 38sqm
39. Intimate/Sleep Space 16sqm
40. Group Work 18sqm

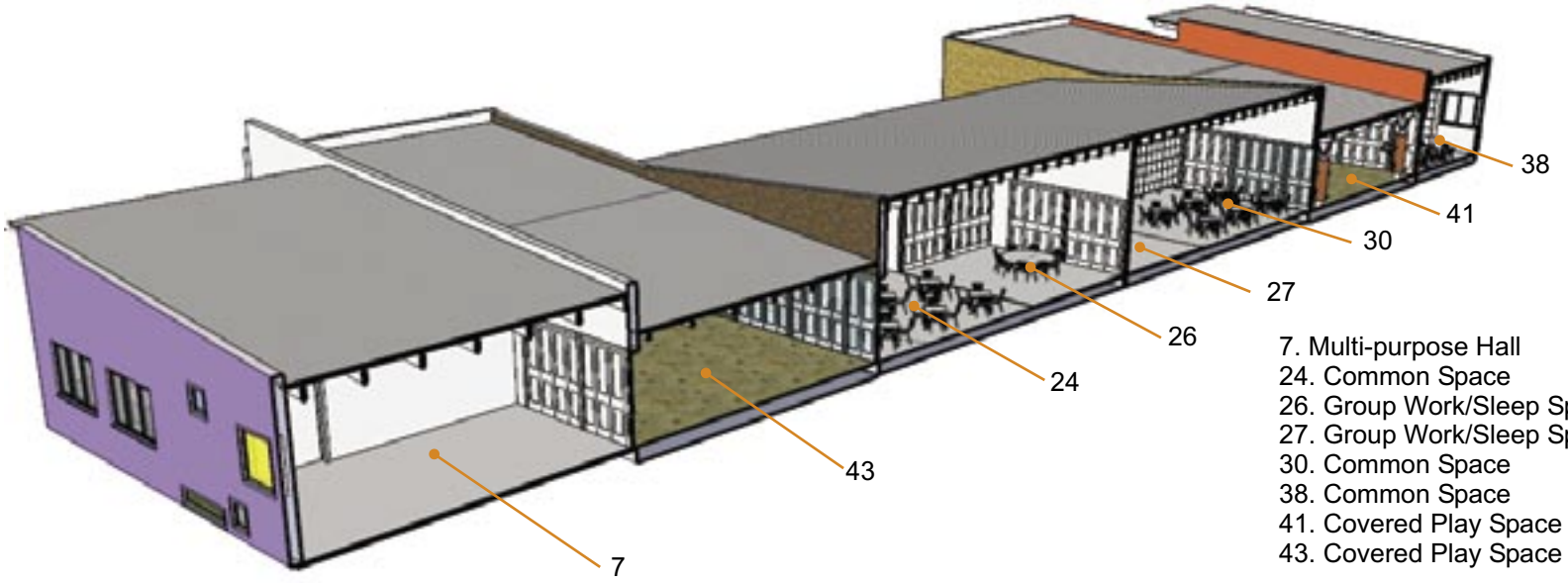
Playrooms
Multi-purpose
Services
Admin

Ground Floor Plan Scale 1:200



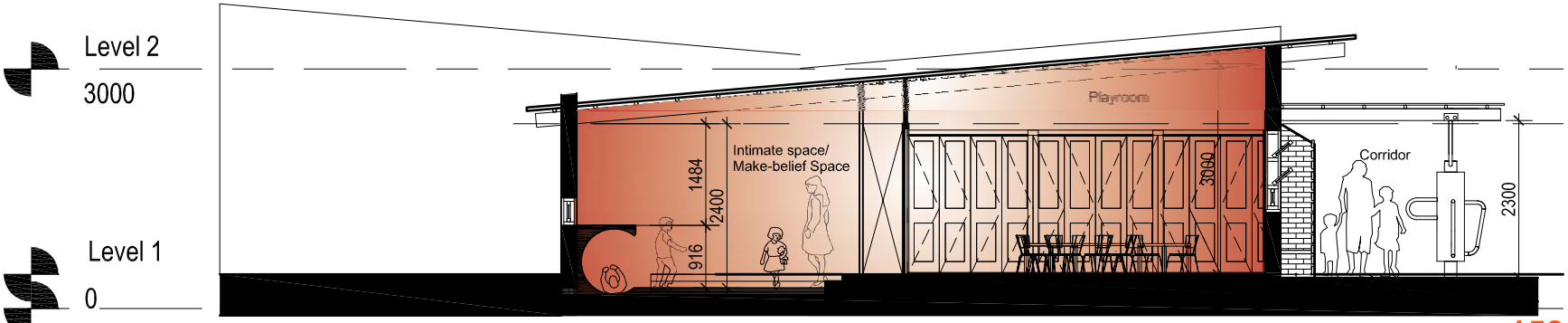
Sectional Perspective showing plan of Kindergarten

41. Covered Play Space
42. Covered Walkway
43. Covered Play Space
44. Open-sky Courtyard
45. Playground
46. Sand Pit
47. Climbing Wall
48. Park Set
49. Telephone Tubes
50. Playground Set
51. Merry-go-around
52. Amphitheater
53. Paddling Pool
54. Reception and Waiting Rm
55. Storage
56. Unisex toilets
57. Boardroom
58. Kitchenette
59. Office
60. Staff Room
61. Tool Store
62. Courtyard
63. Controlled Access
64. Controlled Access
65. Vegetable Garden



7. Multi-purpose Hall
24. Common Space
26. Group Work/Sleep Space
27. Group Work/Sleep Space
30. Common Space
38. Common Space
41. Covered Play Space
43. Covered Play Space

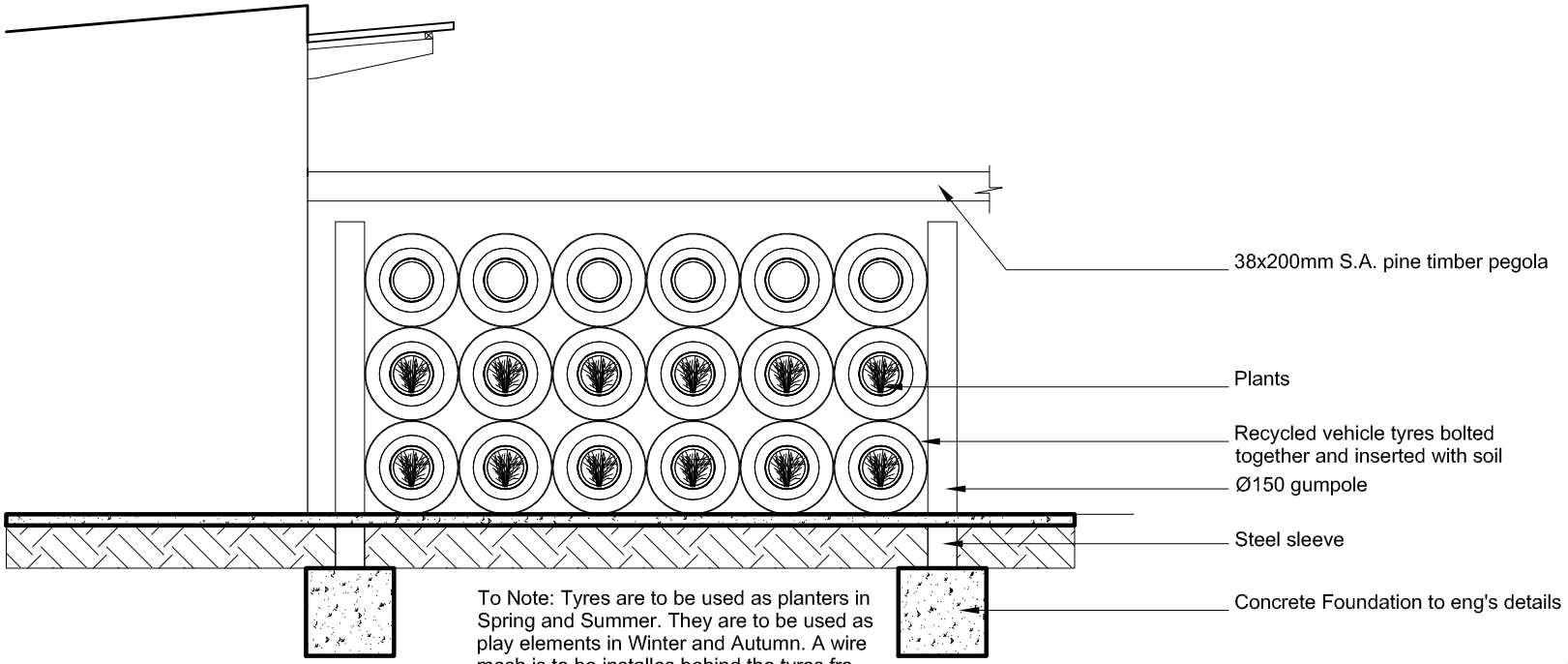
Sectional Perspective of Kindergarten



Section KK Scale 1:100

158

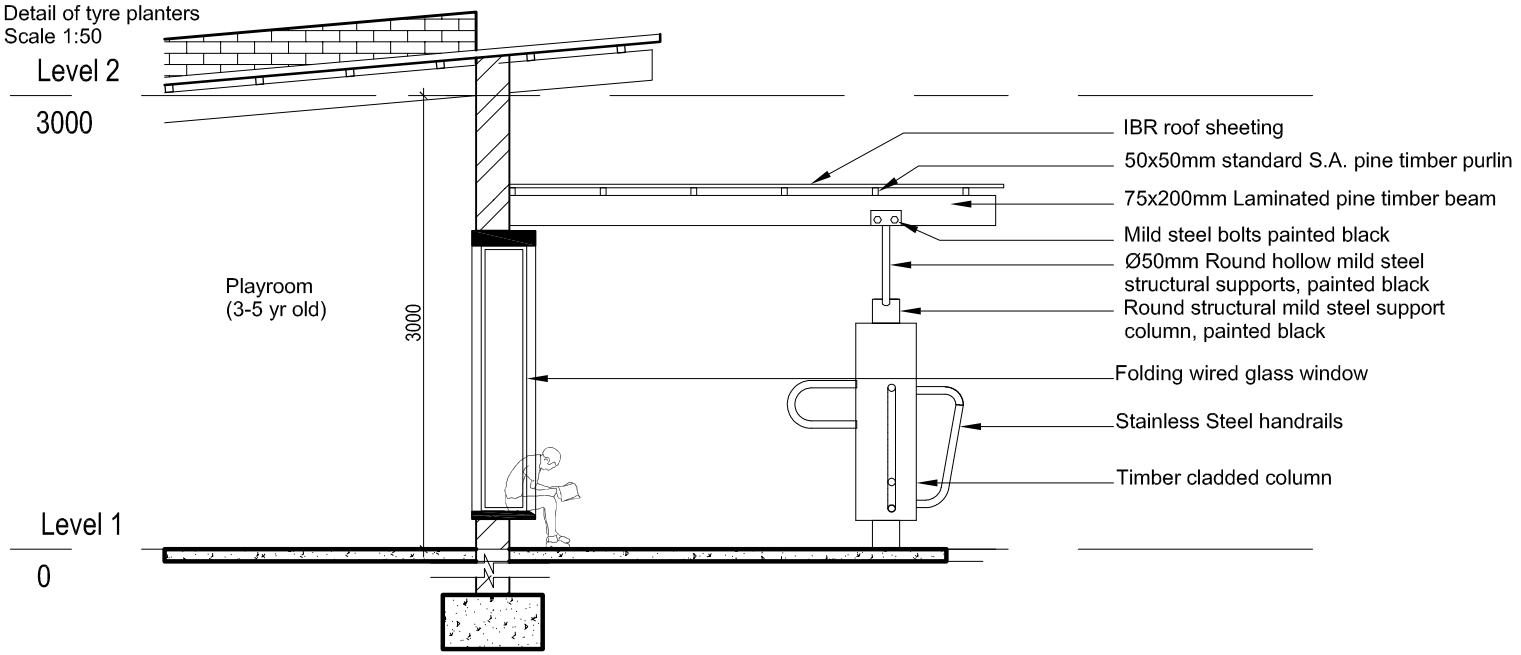
158
Section through playroom (3-4yr old) (Author: 2008)



To Note: Tyres are to be used as planters in Spring and Summer. They are to be used as play elements in Winter and Autumn. A wire mesh is to be installes behind the tyres fro security reasons.

159

Detail of tyre planters
Scale 1:50



Sectional Detail 5

Sectional detail through folding window of playrom (3-5 yr olds)
Scale 1:50

160

Sectional Details Scale 1:50

159
Detail of Tyre Planters (Author: 2008)

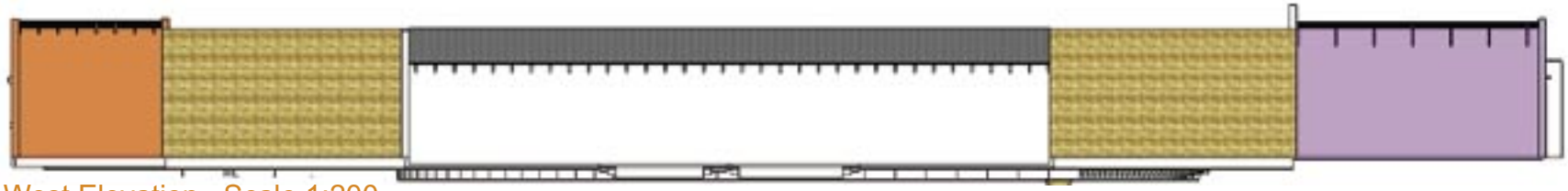
160
Edge detail of playroom (3-4yr old) (Author: 2008)



Sectional East Elevation Scale 1:200



Sectional South elevation Scale 1:200



West Elevation Scale 1:200

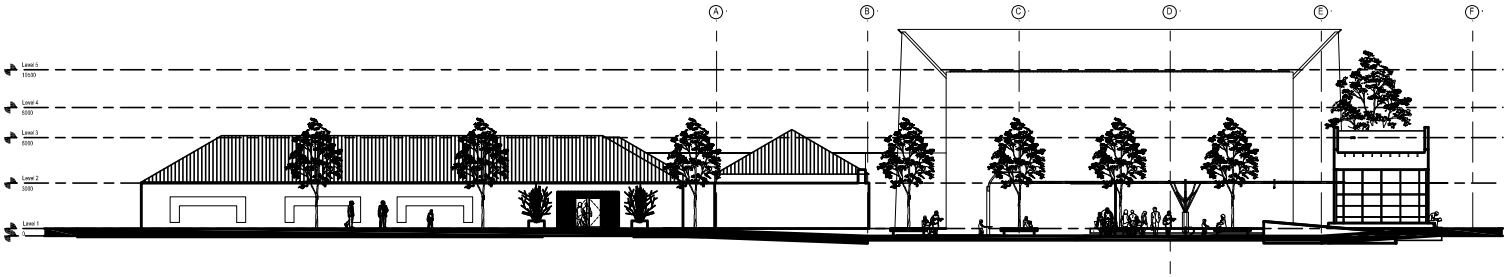


North elevation Scale 1:200

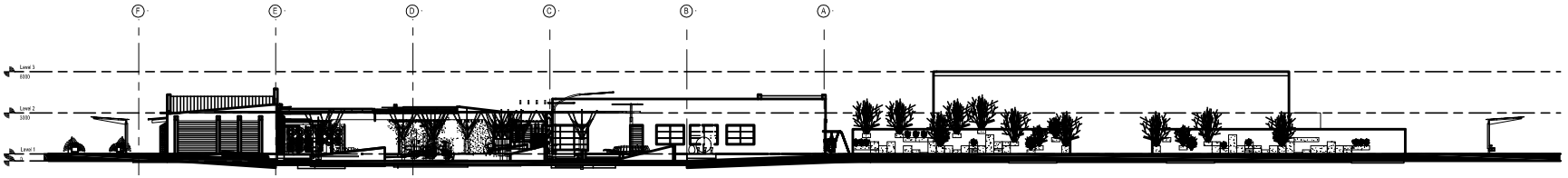


South elevation Scale 1:200

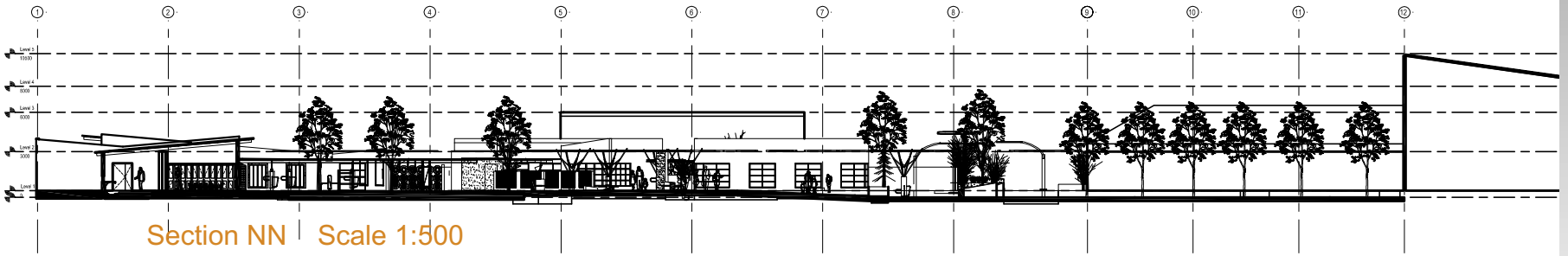
161
Rendered Sections and elevations of the Kindergarten. (Author: 2008)



Section LL Scale 1:500

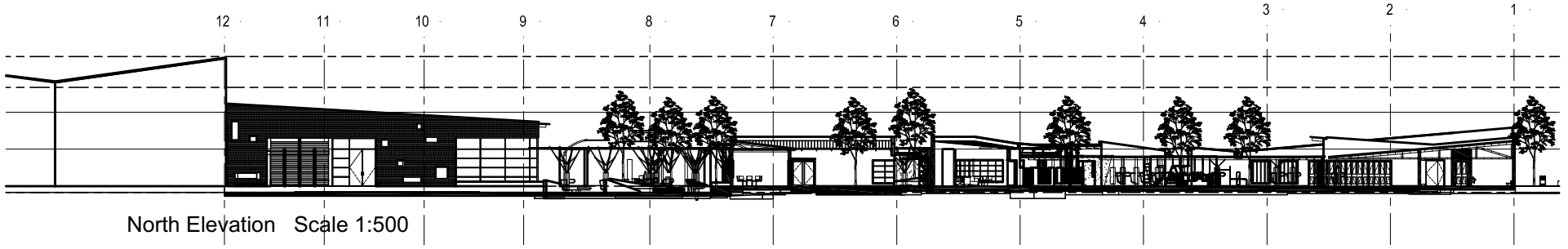


Section MM Scale 1:500

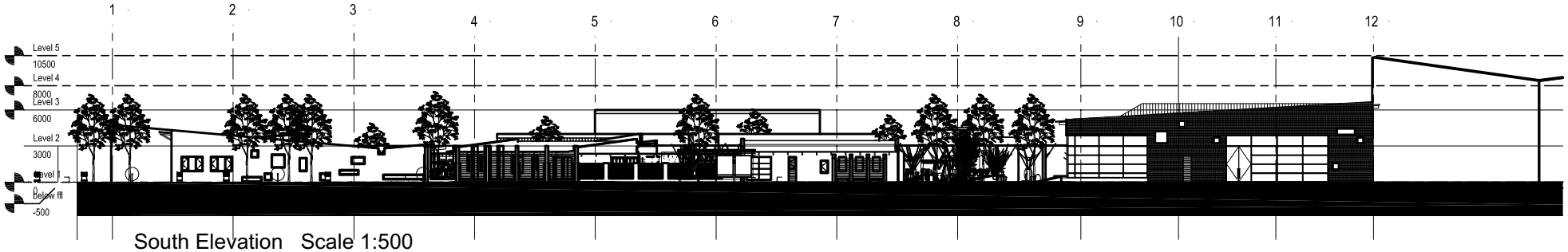


Section NN Scale 1:500

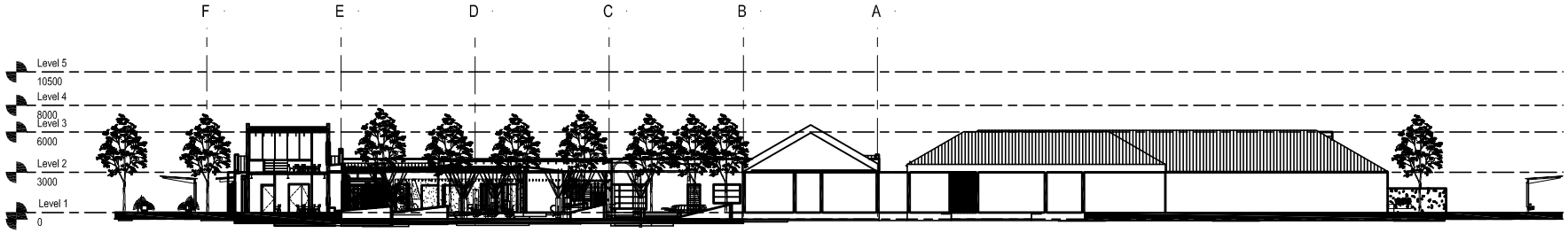
162
Sections through the site.
(Author: 2008)



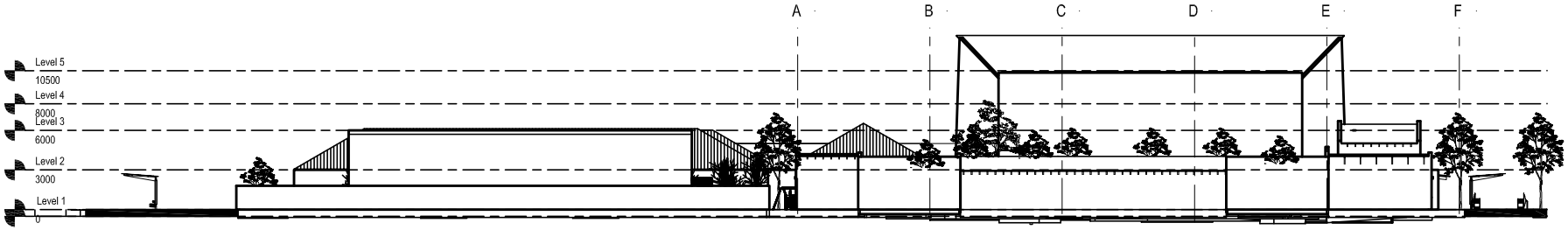
North Elevation Scale 1:500



South Elevation Scale 1:500



East Elevation Scale 1:500



West elevation Scale 1:500

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Daphne Clarke - Teacher, 14 July 2008
Smangele Sangoni - Foster Care Parent and Creche Owner - 15 July 2008
Zanele Shoba - Shop Owner (Smangele's daughter) - 15 July 2008
Cynthia Morrison- Child Psychologist - 5 August 2008

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