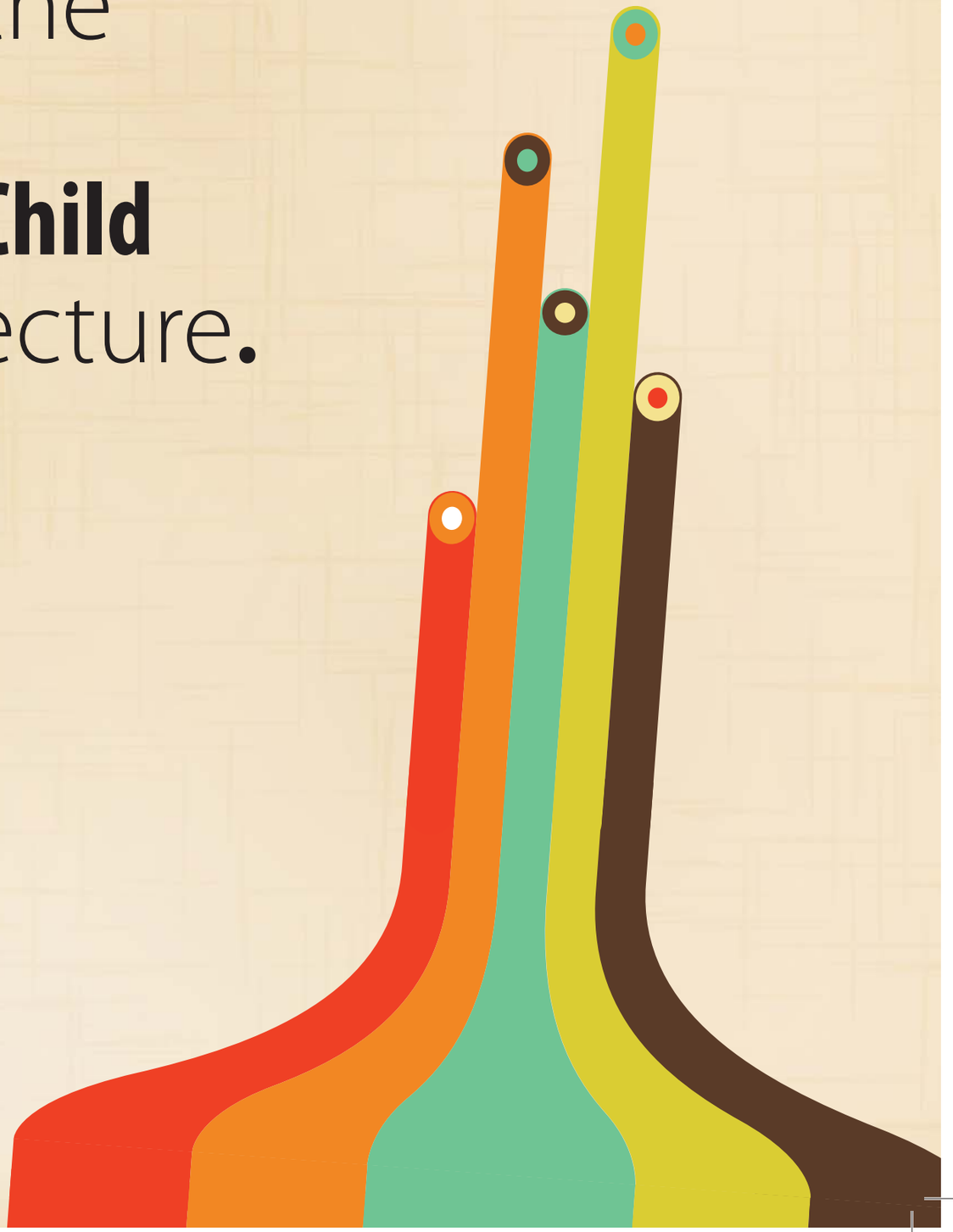
Reconsidering the **Family Unit,** **augmenting The Child** through Architecture.



I, Mary-Lee Tarry 0604350G, am a student registered for the course ARPL7003 in the year 2013.
I hereby declare the following:

I am aware that plagiarism (i.e. the use of someone else's work without permission and/or without acknowledging the original sources) 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 materials of others. I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my unaided work or that I have failed to acknowledge the source of the ideas or words in my own work.

Signed…… Date:……/……/……

This document is submitted in partial fulfilment for the degree:
Master of Architecture [Professional]
at the University of the Witwatersrand, Johannesburg, South Africa, in the year 2013

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ARPL 7003
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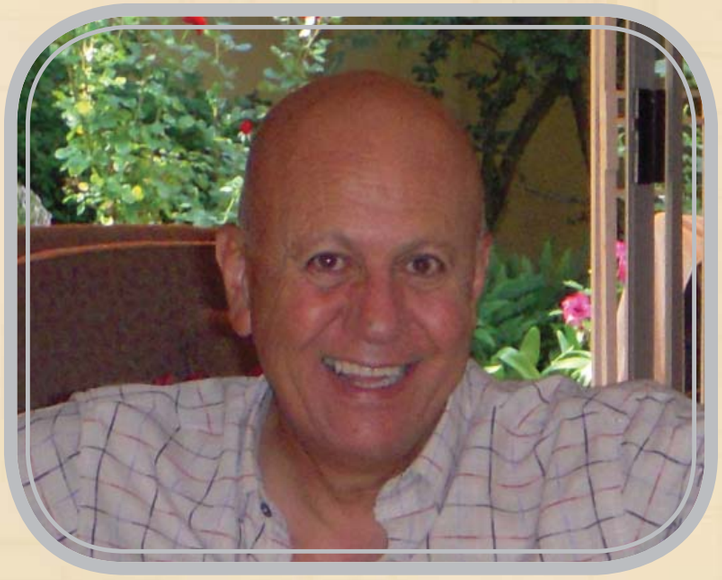

This thesis is dedicated to my Uncle Mike Rohana, who lost his battle with Cancer this year. I have thought of him during every one of those stereotypical moments of stress and have gained constant perspective and strength as a result. Nothing can be done to bring him back to us, however the ability to translate this grief into a book which is the representation of the process in having begun this course as a student and completing it, an architect, is one of the most rewarding ways of commemorating his memory.

The purpose of architecture is to move us. Architectural emotion exists when the work rings within us in tune with a verse / universe whose law we obey recognise and respect.

[Vers line Architecture 1923]

A thesis by

Mary-lee Tarry

Mohammed Munchi (Chief Supervisor)

(Mohammed was camera shy) Mohammed, has an amazing insight into the conceptual world of architecture and constantly motivated me to think about every aspect of my design. Mohammed supported my ideas and pushed me to meet the high standards he had envisioned my work becomming. My design ability is indebted to him and for all this I am grateful.

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Daniel, is one of the most inspiring people I have had the pleasure of working with, and I am so grateful for the personal time he took to invest in my thesis. Daneil's ideas are the works of the academic gods and I feel honoured to have had him as a part of this year long journey. Long may he continue to provoke people to think beyond conventional boundaries. I am eternally grateful for all his valuable help.

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Gerrard has been readily available to help me with any aspect of my degree since I began as a rookey student. He has patiently sat, crit session after crit session, those which often ate into his weekends, taken the time to understand the ideas I am trying to achieve and constantly push me to reach them. I am so grateful (and so very lucky) to be able to call you my mentor, my dear friend.

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Daddy Joe

Mommy Angie

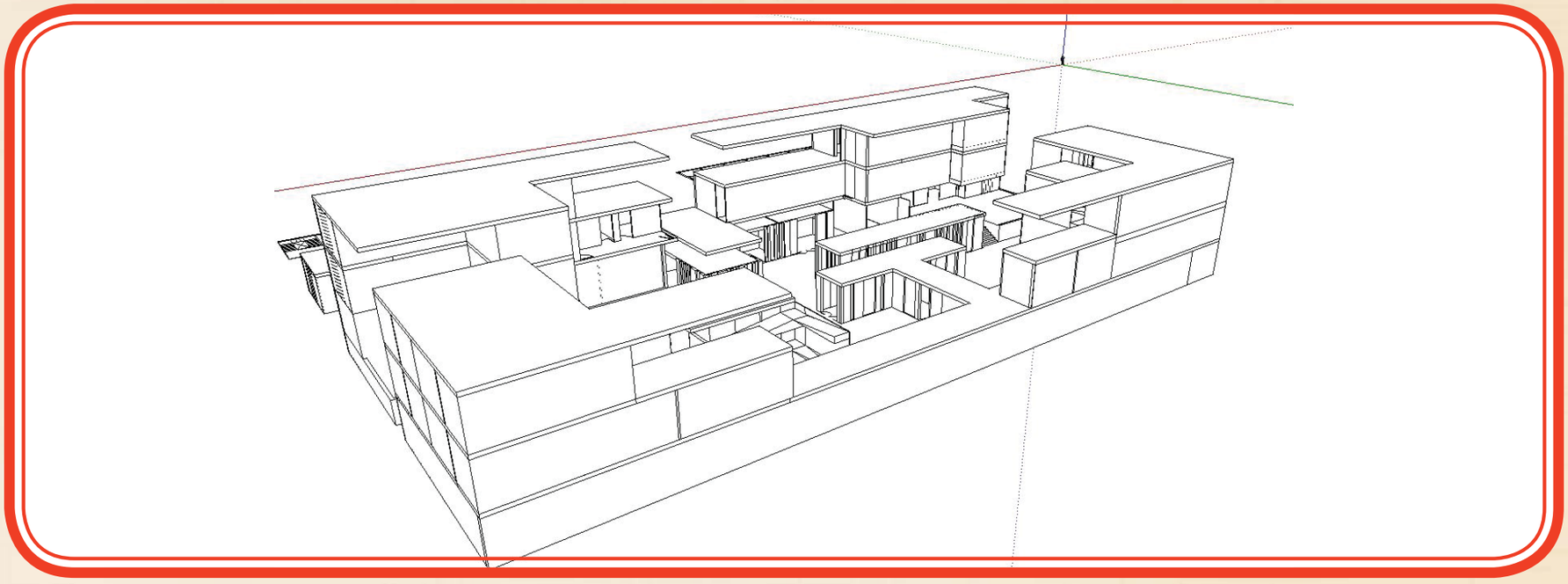
Sister Joey

No amount of words can express the love and appreciation I have for my three strongest pillars of support. My parents have been there for every stressful tear, and moment of doubt, and continue to encourage me with love and faith. My sister is my absolute rock, and I would never have been able to go through this year without her by my side, she has an undescribable faith in me. I am so grateful for everything my family has helped me to achieve.

Abstract

Focussing specifically on orphaned and abandoned children, this thesis aims to merge theories of psychology and phenomenology within the scope of empathic architecture. Psychology has become a common consideration in architecture, as it addresses the psychological impact of building forms. Phenomenology examines the way a person experiences space and environment. Architectural theorists have discussed how phenomenology is the process of orientating oneself within the environment, whilst psychologically the orientation process is cognitive and it is the brain that generates a perception of space, thus providing a balance between a person and her environment. Empathic architecture is the physical representation of this balance, as it is able to evoke an emotional dialogue with the user, who in turn identifies a connection between both building and environment.

Through inter-subjective processes, this thesis explores the orphaned or abandoned child's place within contemporary society. It observes how the built forms, programs and external environments (which provide methods of orphan- care) are either a pro-active or reactive portrayal of how these children are being provided for. A further examination is made on how society is accommodated within the city and the possible improvements are proposed, with respect to caring for the orphan child, through the reintegration of the community. The main conclusion that can be drawn from the thesis is that, through the combined application of psychological and phenomenological principles, it is possible to create empathic architecture which meets the needs of the user. This user is then able to connect with the building and environment and thus create the basis for communal reintegration. This thesis concludes with the Developmental Orphanage for Children; a building which provides innovative methods of community integration, centred on the child user, that aims at facilitating new approaches to the conventional prototypes of institutional and residential suburban building models.



CHAPTER ONE

A Brief History of Orphan-hood

The child as perceived by society

This chapter outlines the progression of the child within the family unit and society. Beginning in Ancient Times, the child is explored through the architecture of daily life. The way in which the child was treated and accomodated through space enables a greater depth in understanding the primary user, the child.

CHAPTER TWO

Precedent Appraisals:

The contemporary Child accomodated in Architecture

Through the analysis of three contemporary precedents, this chapter concludes the progression of the child throughout history. The precedents shall be appraised on the basis of pscychology and phenomenology introducing fundamental themes and concepts which have been adopted throughout the design process.

CHAPTER THREE

Site and Program Motivation

An introduction to the proposed piece of Architecture

The importance of Site is discussed in this chapter and further develops the concepts introduced in Chapter Two. The proposed site and program emerge in relation to the concept and the overall context of the proposed architecture begins to take shape.

CHAPTER FOUR

Design: Conceptualisation to Completion

Form process, development and final outcome

The final building type is presented in this chapter, the entire process is illustrated from concept to final product. The link between the theoretical notions and the physical design process are illustrated and reveal how the final form was manifested.

CHAPTER FIVE

Technology Studio

Detailing an element within the building

This chapter illustrates how a specific piece of the building is detailed constructionally. The process in choosing the detail shall also be dicussed in realtion to the theoretical notions and design concepts which run throughout the previous chapters.

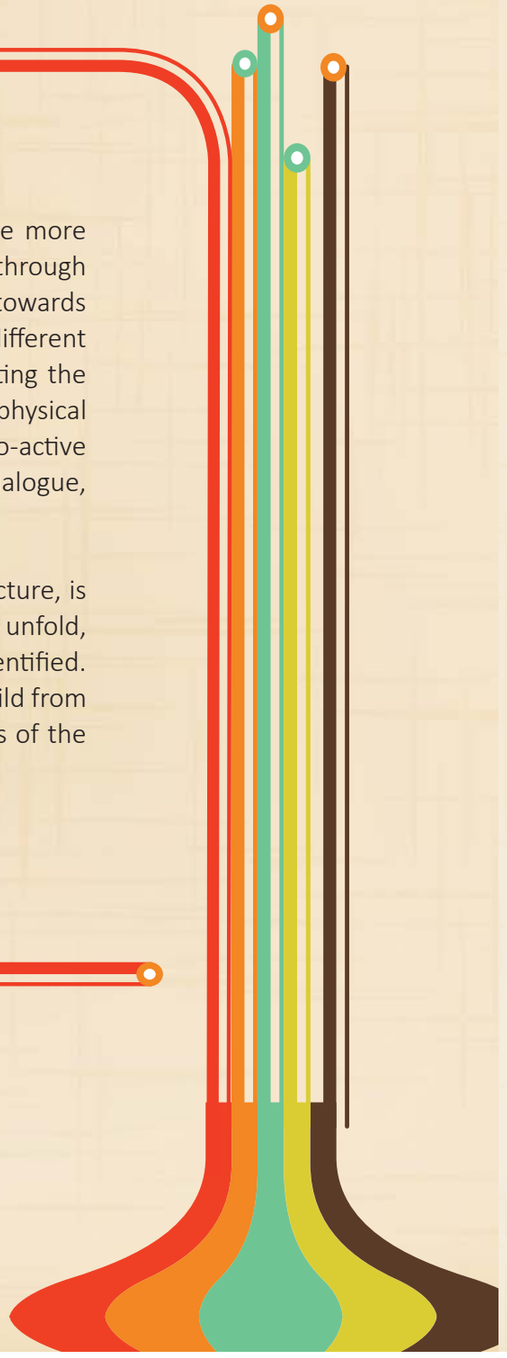
APPENDIX of IMAGES

CHAPTER ONE

A Basic History of Orphan-Care Introducing the proposed user

In order to begin the inter-subjective process, the child, more specifically the orphan, needed to be more thoroughly understood within the context of society. The first step in this understanding was to travel through a basic history of orphan-care and thus come to identify the history of society's changing attitudes towards the orphaned child. The examination of the basic history of orphan-care and a clear idea of the different pieces of architecture which partner it, will begin to outline the theme of empathy, further highlighting the issues surrounding orphan-hood in the 20th and 21st centuries. The architecture, which forms the physical environments, which, to a degree, facilitates the success of orphan-care, shall also be dissected as a pro-active or reactive portrayal of the social history being examined as this continues to outline the concept of dialogue, the connection between building, user and environment.

Finally, this introduction will create a foundation upon which the child, the primary user of the architecture, is further explored throughout the rest of the document. Simultaneously, the concept of dialogue begins to unfold, as the user, who is the catalyst between the connection of the building and the environment, was identified. Once a greater understanding of the orphan child was appreciated, a comparison was made with the child from a conventional home in order to assess the emotional needs that require compensation and the basis of the hypothesis begins to formulate.



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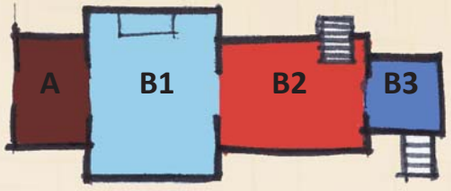
Abebe (2009) identifies the orphan child as “among the most vulnerable members of society” (p.1) as orphan-hood has been a part of society for centuries, dating as far back as the ancient cultures, where Colon (2001) states, that the Athenians adopted orphans as children of the state. Today, the state is still one of the social structures that provide orphan-care as well as other groups such as extended families, charities and Non-Government Organisations (NGO’s). However, the factor that appears throughout history and is still evident today, which ultimately dictates the outcome of the orphaned child, is the way in which society continues to define “what childhood ought to be” (Abebe, 2009, p.1), rather than empathising with what childhood actually is and how it can be a different experience for every child. Thus, unless the orphan has struck a conscious emotional connection with the adopted guardian, the methods of orphan-care are often manifested through institutional forms. These institutions, as Ennew (2005,p.6) discusses “are the rationale” general society used to remedy the child’s vulnerability when left to live outside the conventional family unit; as this would threaten the belief that “family is necessary” (Ennew, 2005, p.6) and result in a potential shift in general social norms and values which were believed to maintain a societal order. This situation creates a basic example of how inter-subjectivity can manifest itself through form. A lack of empathy results in the adult’s subjectivity towards the orphan child who, highly influential and somewhat incapable of channelling his own subjectivity, begins to accept those beliefs and thus is reduced to develop in a meaningless environment, which will result in the child personifying the emotions, or lack thereof, which the form evokes.

The Ancient civilisations begin to expose the lack of distinction between child and adult that is evident in general society, and the inability to accommodate the child in a suitable environment. The conventional home was testament to this fact as there were no distinctive areas for both the child and the adult. Although this example does not refer to orphans specifically, it illustrates the lack of empathy that arises between adult and child, as the focus was on the type of adult the child was to become, and little attention was paid to the process of childhood.



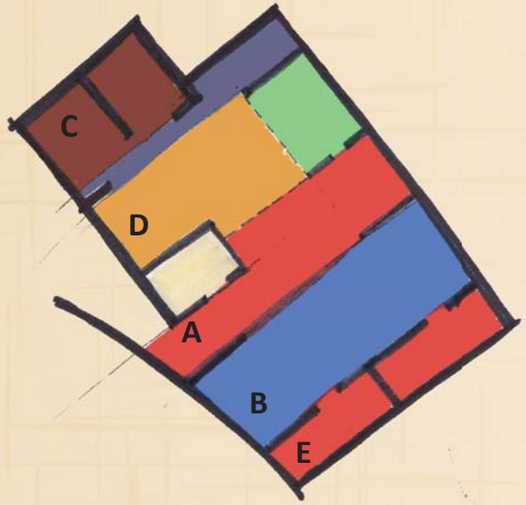


Figure 1. : **Prototypical Ancient Greek House**

A Greek home functioned similarly to that of the Ancient Egyptians. Seven rooms formed a basic house plan, however, unlike the Egyptians, poorer families could have a double story house, which saw the upper level for use by woman only. The house is comprised of different rooms, which held similar functions as the Egyptians and Romans.

A)An open court was central to the plan
B)Bedrooms, a separate kitchen
C)Dining area forming the surrounding rooms.
E) An entrance threshold led into the internal court and a staircase led to woman’s chambers above the ground floor.

Figure 2: **Prototypical Ancient Egyptian House**
Further Experience-Ancient- Egypt (2013) defines that:
A)The Front room became the threshold of the house where guests could wait off the street.

B1)The living room consisted of a shrine for their household god/goddess where they would conduct religious rituals daily.

B2)The living Room became an all-purpose room, for eating and sleeping and contained a staircase which led to the roof of the house which formed part of the living area.

B3)The roofless kitchen is where the woman and children would prepare meals, a staircase from the kitchen led to a cellar, which held food and beer.

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To contrast with their European neighbours, the African tribes acknowledged the role of the child and its transition to adulthood with traditional ceremonies. Although traditions vary from tribe to tribe, the child is acknowledged far more delicately in the field of social and intellectual development than the children of Europe were. Tembo (1998, p.5) discusses how the children were taught "customs, beliefs and cultures pertaining to the social roles of being a woman, mother and wife for girls; and a man, father and husband for boys". Tribes differed by following either the matrilineal or patrilineal lineage, that being descent or inheritance from either the mother or father's bloodline.

Since African tribal ancestry dated back to the ancients, it is no surprise that their village structures and households were designed similarly; however, instead of the whole family residing in one household, members were separated and lived in huts a few steps from one another, which together, created a circular structure. Tembo (1998) discusses how brothers and sisters were separated according to their gender and were under the rule of their grandparents, or older married brothers and sisters; however the biological parents were always present for traditional ceremonies and family gatherings. As for the treatment of children and orphans, the African tribes further developed the "kinship system" (Abebe, 2009, p.4) which as Tembo (1988, p.2) describes meant that any man "heir to a widow" would have the responsibility of adopting the whole family and in turn acknowledging them as his own.

This example illustrates the West Kenyan Villages of the Luhya who, according to Tyman (n.d, p.1), sought safety in numbers and clustered together in walled villages for protection. These villages did not vary drastically from other African tribes as Tyman (n.d, p.1) elaborates: "The tribal villages generally ranged from two to twenty buildings, arranged in a west established pattern."

The position of the entrance gate is first determined. The first wife is housed opposite the gate, close to the peripheral fence. The male head is situated in the middle of the compound. Once a second wife is taken, her house is built opposite to the first wife's hut. Similarly, as each new wife was acquired so the huts were built opposite one another with the male head remaining in the centre. Each wife would have a granary beside her house which held the homes food supplies.

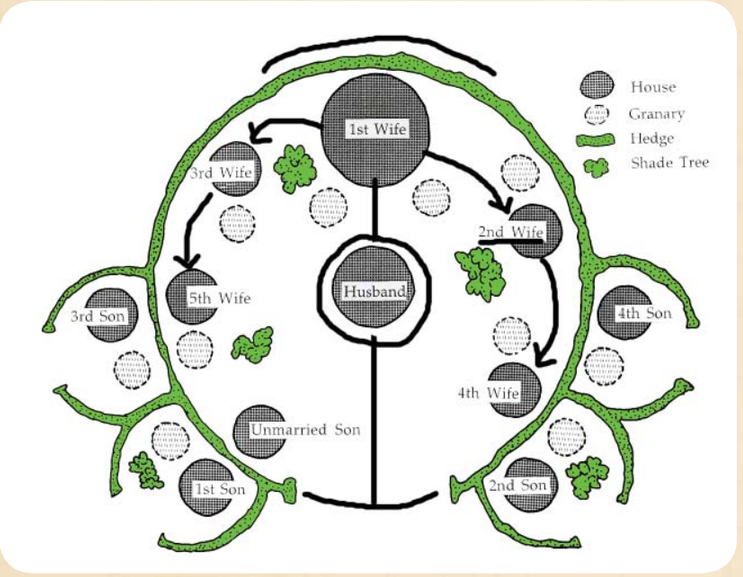

Figure 3: Plan of the prototypical Luhya Village, n.d.

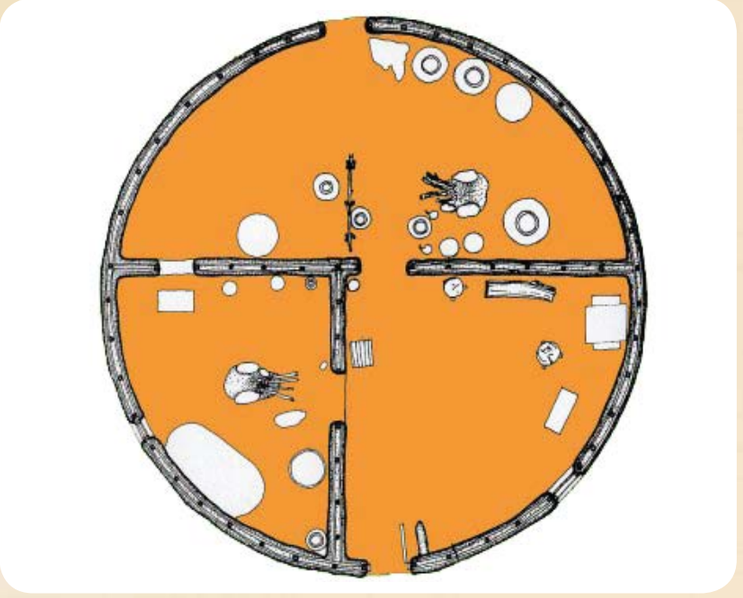

Figure 4: **Plan of the prototypical Luhya Hut, n.d.**

Another example, which now illustrates the lack of social empathy in orphan-care, can be provided upon the assessment of the Workhouse scheme. As Barrow (2010) states, it was one of the first orphanage types to develop out of the Victorian Age in Great Britain. The prototype of the Workhouse was strengthened when the Poor Law was passed as it began to house both male and female adults and children in one building. They were kept in isolation from one another under terrible conditions where the children were often hired out to work in factories and mines.

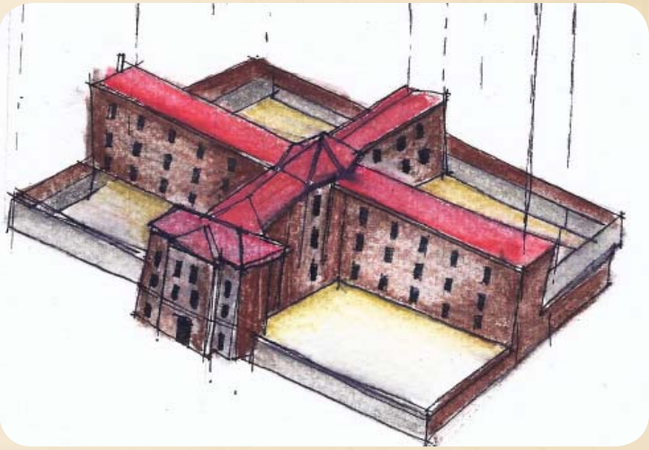

Figure 5: **Axonometric of the prototypical Workhouse**

Figure 6: **Perpsective of the prototypical Workhouse**

Figure 7: **Plan of the prototypical Workhouse, n.d**

The workhouse structure was large and comprised of several rooms, as Barrow (2010) describes: dining-hall for eating, dormitories for sleeping, kitchen, school-rooms, nurseries, rooms for the sick, a chapel and a mortuary. It was managed by staff including a master, matron, a medical officer and a school-teacher.

Later, according to Abebe (2009), subsequent to the Second World War, an attempt was made to redefine the institutional form; this illustrated the first step towards the modern approach to orphan-care, which shall be elaborated upon further into the chapter. The Save Our Souls Children's Village presents a reinterpretation of the institutional system, as the founder Hermann Geminer believed that "traditional Orphanages did not provide opportunities for the proper care and development of orphaned children" (Abebe, 2009, p.6). Situated in 133 countries around the world, SOS Children's Village Association states that, these institutions provide community-like programs to house orphaned and abandoned children. This structure portrays a more inclusive idea of community and enables the freedom of the child, encouraging more natural social environments.

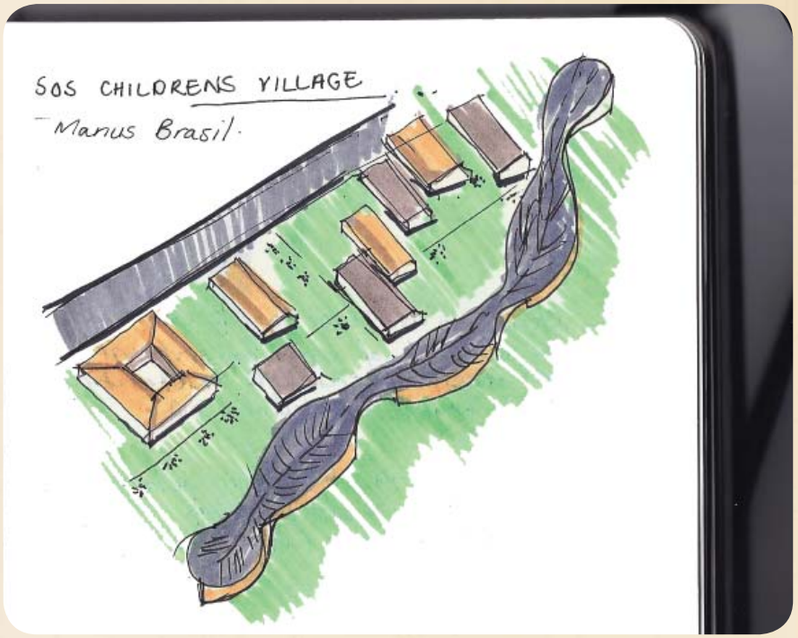

Figure 8: **An SOS Children's Village in Brasil**

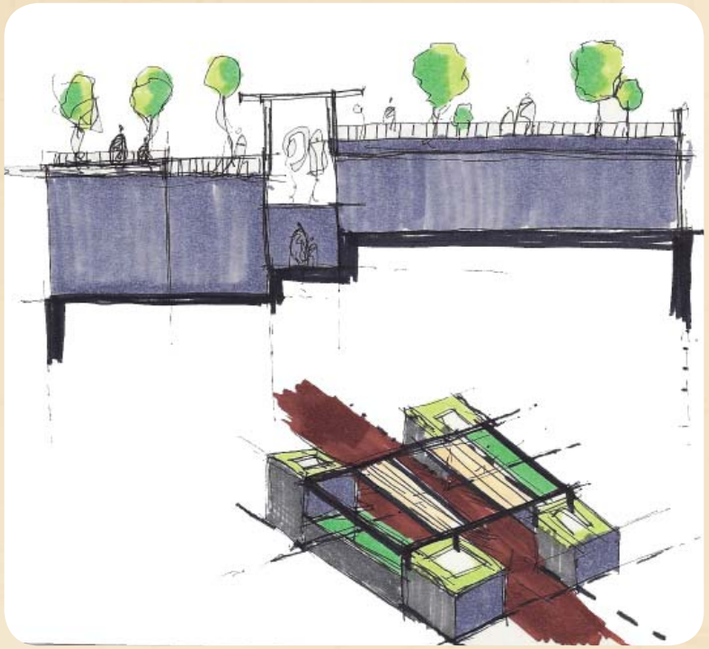

Figure 9: **A spatial interpretation of the SOS Village Typography within a suburban block**

The system of the SOS Children's Village, which originally began post Second World War, appears to be the first successful step in redefining the institutional forms, which were associated with orphan-hood. However, for the most part, general societies continued to reduce orphan-hood to a life of condemned isolation from conventional society. The early industrial revolution, according to Ennew (2003, p.8), identified the social role of the child as "an object of fear" and so the child was cared for until he could be used to perform adult labour. The 20th Century role of the child portrayed it as helpless and in need of rescue, as Ennew (2003) elaborates. Again this resulted in society's need to rescue the child by placing her into institutions where she could be easily controlled.

From the end of the 20th Century and continuing into the 21st Century, the complexities of global social structures resulted in the need to redefine the constraints with which a child could be referred to as an orphan. Abebe (2009, p.2) states that the term orphan cannot be defined strictly within the boundaries of a child without its original birth parents, as this places emphasis on the "biological aspects of parenting"; rather it should refer to the child who no longer "lived under the protection of their family" (Abebe, 2009, p.2), those children who had "fallen outside the traditional social safety net" (Abebe, 2009, p.2).

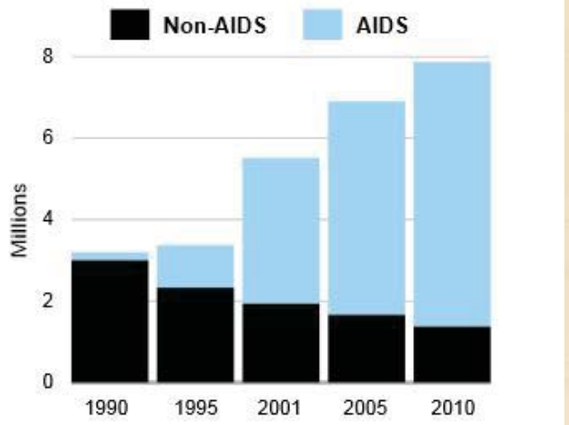

Figure 10:
Increase in Double Orphans in Sub Saharan Africa due to HIV-AIDS, UNICEF, 2010

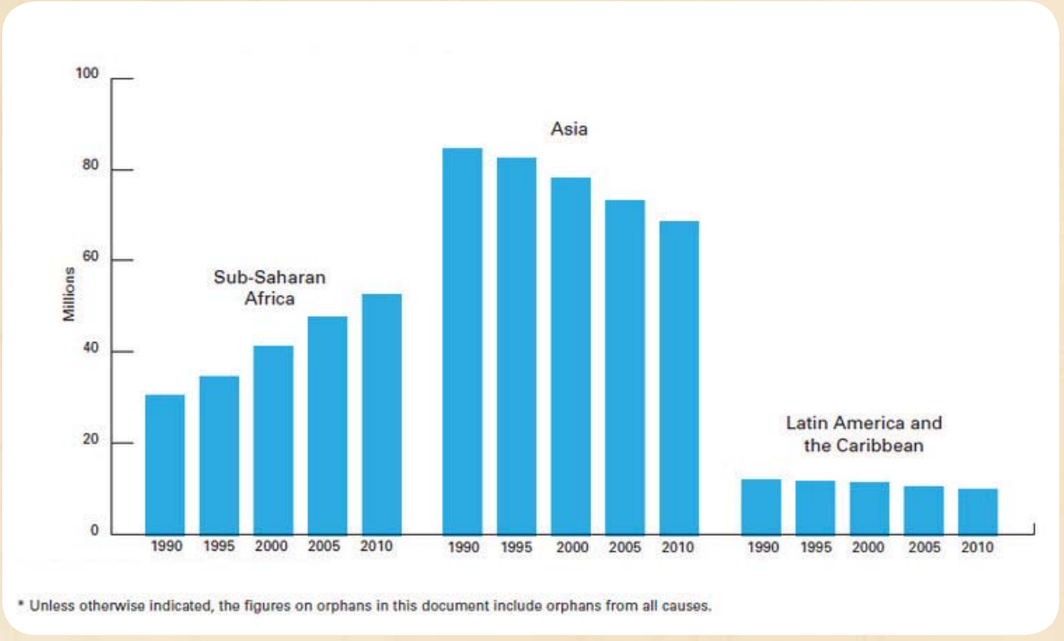

Figure 11:
Number of orphans ages 0 -17, by region, 1990- 2010, UNICEF, 2010

Abebe (2009) addresses how the AIDS pandemic has subsequently led to two categories of orphan-hood, which allude to their resulting circumstances; AIDS orphans and Non-AIDS orphans (Fig.10). Non-AIDS orphans have been orphaned due to global poverty, which is a result of famine, civil war and disease. These global categorisations have thus further defined the types of vulnerable children different circumstances may produce. (Fig.11) Global cognition of these varying types of orphans has spurred international aid communities, such as local NGO's and charitable institutions like the United Nations Children's Fund (UNICEF), to seek the provision of greater forms of protection in order to create healthy living environments to accommodate the different needs the orphans have. Psychologically this "subject of attention" (Abebe, 2009, p.2) has resulted in what Ennew (2005, p.5) terms the "Donor-Media-Complex". This complex has over emphasised the child's vulnerability, and through this simultaneously demised the child's ability to adapt to his new circumstances; thus resulting in the further marginalisation of the child, preventing his reintegration into a conventional society.

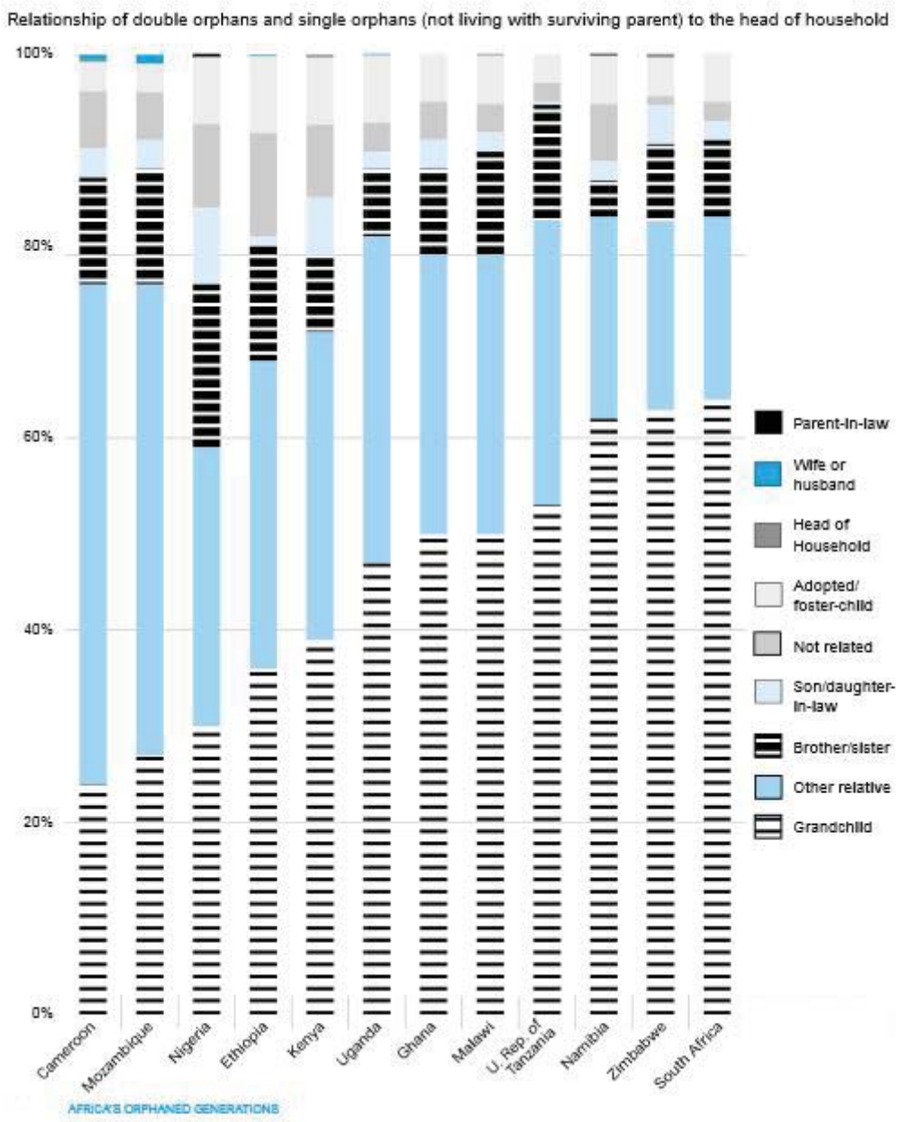

Figure 12: **Extended Families Traditionally Care for Orphans**

The orphan-care strategy, which has emerged in order to provide care for the aforementioned types of orphans, has been divided into four approaches as categorised by Abebe (2009, p.1): "familial [care], community-based [care], institutional and rights- based [care]".

Abebe (2009) states that familial care is practised by the state, which takes on the responsibility of the child's rights and wellbeing, making use of international social work and networks which place the child with extended family (Fig.12); assuming to secure a continued healthy upbringing. This method is not a new concept for African communities, as it was practiced in the early modern period, where the family structure supported the child being brought up by its immediate relatives. However, local NGO's have observed that the issue that arises from this system of care is the fact that it cannot be thoroughly facilitated in developing countries due to scarce resources. This often results in children having to survive on their own in their existing circumstances, which do not facilitate a healthy upbringing. The architecture for this system remains the family unit, whether it is in the context of an African village or a western home. Psychologically, this system would make for an easy transition for the child (as the new living environment would reflect the child's original one), creating a meaningful place which phenomenological principles outline, according to Schulz (1980), as the main component in the definition of a home.

Abebe (2009) describes how community-based care emerged from the 1980's and is practised by NGO's, such as the Johannesburg Child Welfare (JCW), who through fundraising initiatives (such as the 'My-School-Card') are made the beneficiary of major corporations, enabling their sustainability. This method relies on local communities to support the children and is formulated through the use of existing community institutions, such as foster homes and large orphanages. The architecture of these will be examined as a precedent in the proceeding chapter. Although the system promotes the empowerment of the child upon recognising its specific needs, Ansell and Young (2004) observe how this requires an existing stable community, which is grounded on common beliefs and values. However Ansell and Young (2004) continue by suggesting that, realistically, this is a difficult feat to accomplish and issues of ill treatment may arise due to poor host families.

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Institutional care is the “traditional provisions for orphans outside families” (Abebe, 2009, p.9). As these institutions are financed through donations, the standard of care and quality may vary as well as the typology of the institution. Many institutions have broken historical conventions and have begun to incorporate “family based dormitories” (Abebe, 2009, p.9). Further modifications to the historic system have been made, as discussed by Abebe (2009), through the implementation of training programs for staff and the more thorough address of the developmental needs of children. This was previously illustrated through the SOS Children’s Village, whose scheme aims to de-institutionalise through the implementation of “family-like” (Abebe 2009, p.6) social and physical structuring.

Lastly, rights based care is linked to a “wider economic, political and cultural context in which orphans find themselves” (Abebe, 2009, p.7). This system looks to identitfy all children without homes, not only those who have been orphaned physically. Rather by contextualising the child within a larger social issue, such as poverty, this enables the equal distribution of resources, such as access to education, medical care and sanitation facilities to entire communities who are disadvantaged.

Thus what can be deduced from the above methods of care is that the aim of the international-aid organisations is to ultimately create as normal an environment for the orphan child as possible. So far, the most obvious method in which this can succeed is ironically through the method of institutional care, where the SOS Children’s Village saw the reinterpretation of institutional form, and has created an enriched environment for both the child and adult; this reflects an empathic architecture. This empathy can further be interpreted, according to Goodman (1991), who describes it as “a condition for healing”. This notion directly corresponds to the aforementioned resources, which Abebe (2009) describes are sought after in order to provide a caring environment for the orphan child. One dimension of the resources can thus be conceptualised as those buildings which provide a secure environment for the child and protect it against disturbances which could disrupt future development. The building thus begins to evoke a sense of healing within the child, which further elaborates the influence of empathic architecture. However, the issue arises where the parameters which are needed to implement a program of this nature are not conducive to the general setting in which orphaned children find themselves and the process of empathic healing needs to manifest itself through a compromised form.

The most obvious form, which is able to facilitate this compromise, is the conventional suburban household, which claims to promote a safe and healthy environment in which a child can develop. However if one is to thoroughly consider the conventional child’s environment, what can be observed is that to some extent, the general language between the user, built form and environment has become over rationalised, both socially and physically. The dialogue between those three elements has thus begun to degenerate. Therefore, even the conventional environment, which could potentially facilitate the orphan’s sense of normalcy, has ironically begun to duplicate the environment which previously accommodated the orphans in history. What can now be observed is how the modern home in the city is slowly becoming the host to the historic principles of the institution (Fig.13).

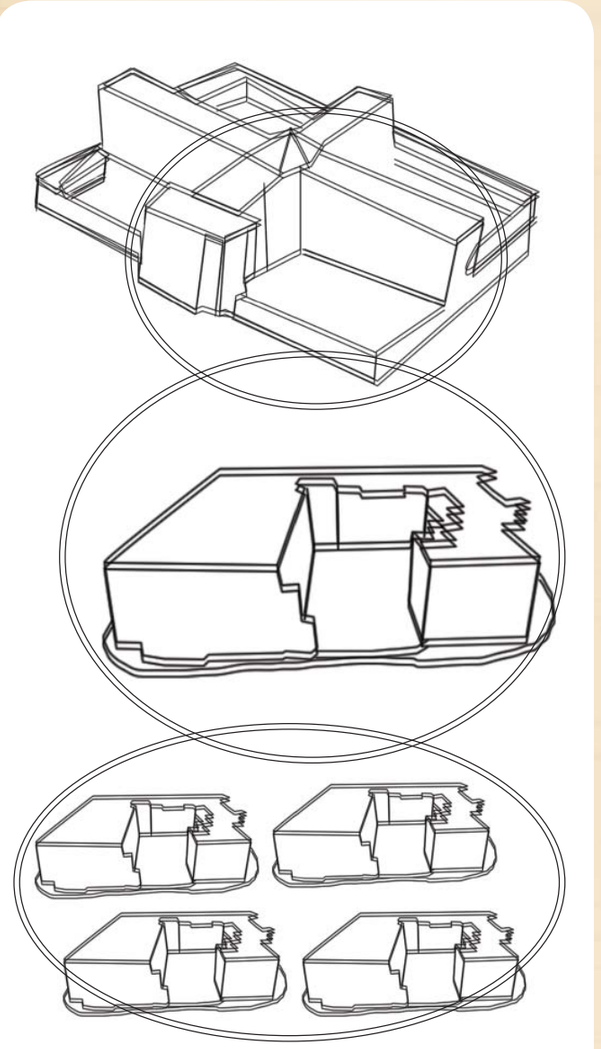


Figure 13 **The progression of the Institutional prototype**

Modern Housing Schemes have begun duplicating the isolated environment of the Historic Orphanages, whereby the user is removed from the external street and functions within the building.

This notion further gives rise to Van Eyck's theories on phenomenology (Fig.14) where he states "a city is not a city if it is just an agglomeration for a very large population, a meaningless accretion of quantities with no real room for anything beyond mere survival" (1962, p.350). Society is incapable of truly understanding the importance of childhood due to a lack of empathy, and seeks to rather control through institution. Similarly, a need for surveillance and safety has removed both the child and adult user from an embodied experience of place, time, environment and form. This has resulted in the simultaneous demise of the city as a meaningful environment, where "mere survival" appears to have become the foremost priority of the general population.

A brief introduction to Professor Juhani Pallasmaa (whose work shall be elaborated upon in greater detail within the following chapter) further defines how the progression of this "technological culture" (Pallasmaa, n.d, p.1) has created a juxtaposition between user and spectator. Thus the conventional child, to some extent, has become so carefully considered within the context of safety and protection that it too, has become a part of the controlled isolated environments that the international aid organisations are trying to dissolve in order to create a more holistic developmental environment.

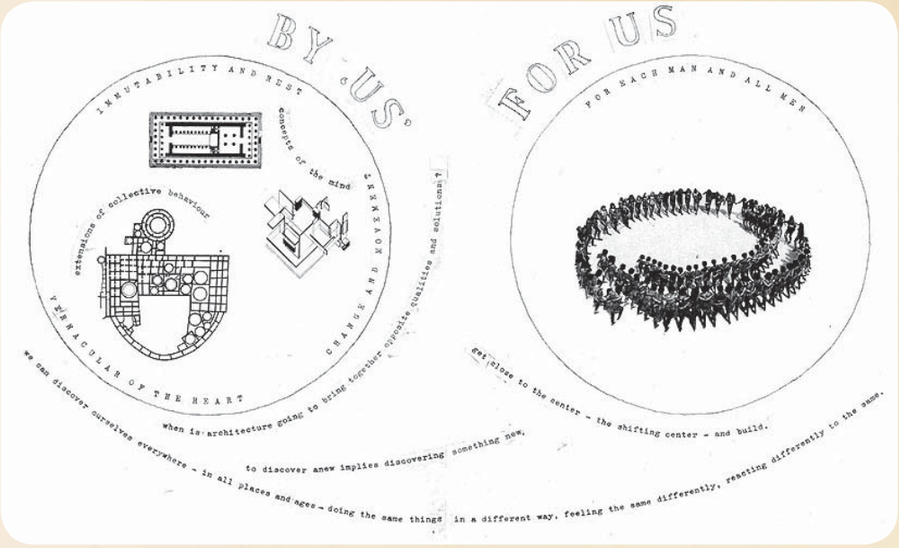


Figure 14: **The Otterlo Circles, 1959**

This above diagram was created by Van Eyck and presented at the last Congrès internationaux d'architecture moderne (CIAM) congress in 1959. The diagram is a representation of Van Eyck's union of cultural and philosophical approaches towards design as discussed anonymously by a website dedicated to the Team 10 group to which Van Eyck also belonged .The words in the image read:

"When is architecture going to bring together opposite qualities and solutions?
We can discover ourselves everywhere- to discover anew implies discovering something new -get close to the centre - the shifting centre and build
in all places and ages-doing the same thing in a different way- feeling the same differently- reacting differently to the same"

These observations thus begin to construct a basic hypothesis, which observes how the orphans place in history has become the child's place in contemporary society. This concludes the examination of the first component of dialogue, the user of the architecture. This chapter enabled the context of the orphaned child to be introduced in the aim to achieve a connection with the proposed child user. This connection was established upon a greater understanding of the history of orphan-hood. The precedents examined in Chapter Two provide the final and full progression upon identifying the general child's place in society, both in orphan-hood and conventional family structures. The following chapter will explore the second component of dialogue, the building environment, and its importance in balancing the connection between the user and building. Again, the use of phenomenological and psychological principles will be explored as a means to emphasise the environment's importance as well as contribute to the theoretical groundings which aid in developing the concept of dialogue.

CHAPTER TWO

Precedent Appraisals An Analysis of Community, Form and the Child

This chapter explores, through the appraisal of more current precedents, the importance of the immediate environment based on phenomenological and psychological principles. The element of community, or lack thereof, in 21st Century cities serves as a basis with which to explore the precedents. The chosen precedents are addressed in both local and international contexts and shall be used to identify issues of community, space and form in relation to the child, both orphaned and conventional.

The development of the theory of the phenomenology of architecture will serve to emphasise the importance of environment, of which encompasses all aspects of a built form, as Schulz (1980, p.15) summarises “the existential purpose of [architecture] is therefore to make a site become a place, that is to uncover meanings potentially present in the given environment”. In identifying the importance of environment, the phenomenological aspect is partnered with a psychological perspective, furthering the identification of an environment’s ability to nurture; supported by Coon and Mitterer’s (2012, p.100) statement that the environment is the “sum of all external conditions that affect a person”.

As concluded in chapter one, it may appear that the more privileged child, family and even community are not a part of the enriched environments that the international aid organisations are striving to provide for orphaned or abandoned child. Thus the precedents will highlight the conclusion that a new environment needs to be developed. This environment needs to encompass the positive elements of the 21st century suburbs and renew the vital connections between user, built form and environment. Those connections, some of which have been lost through the need for secure environments, have resulted in a disjointed sense of community and the dilution of a wholesome environmental experience.

C²

The previous chapter identified, through the examination of orphan-hood in the broader context of society's perception of childhood, empathy, or lack thereof, as one of society's greatest downfalls. This inability to empathise resulted in the adoption of isolated environments which was manifested through the use of institutional forms. The intent of the historical Workhouses was to purposefully ostracise their occupants from the external environment and to further exercise their control over occupants, through a series of internal environments.

A basic outline of contemporary housing schemes, whether they are upper class suburban complexes or low cost community houses, appears to have replicated the structural affordances of the aforementioned historical types. There is a fundamental lack in recognising the importance of environmental meaning and its affect upon the way people function within it. As a result, a pattern of internalised living has taken over, whereby the user moves from one isolated environment to another. Professor Juhani Pallasmaa (n.d) identifies that this pattern began to develop from the late 18th century, whereby architecture was " taught, theorized and practised as an art form of the eye", (Pallasmaa, n.d, p.1) resulting in visual hegemony. This dominance is clearly expressed in the above example of the Workhouse, where a lack of empathy resulted in the need to visually control the unknown through rigid, institutional architecture, which promoted surveillance and thus supressed the user (Fig.15 & Fig.16).

The subconscious progression of apathetic architecture has resulted not only in a lack of, but also in a misunderstanding of the meaning of environment; a meaning above cultural practice, a meaning which addresses the senses that the body evokes when in dialogue with the building. Pallasmaa (n.d, p.4) captures the notion absolutely, "instead of promoting positive experiences of rootedness and intimacy" (a result one would expect upon historical reflection) "the age of communication is turning into an age of loneliness and alienation" (Pallasmaa, n.d, p.4). If we consider Lynch's notion that the "city is in itself the powerful symbol of a complex society" (1960, p.5), surely we should begin to develop it in order to maintain the social, economic, political and environmental complexities, instead of removing ourselves completely. Lynch (1960) outlines the basic principles with which the city is defined and how those principles, such as the relationships between built form and natural surroundings, create a person's environmental image. The environmental image is the individual's perception of the city, and Lynch further discusses how this perception has been "fragmented" (1960, p.2), as city inhabitants are only aware of the city's negative elements and fail to recognise "the potential value of harmonious surroundings" (Lynch, 1960, p.2). Thus, the child is claimed to be more greatly understood and considered in this century, but still being forced to perceive spaces as an adult would, as according to psychologists Coon and Mitterer (2012, p.58), "children base their understanding on particular examples". Surely then, the city and its architecture should reflect the social and intellectual progressions that the world is striving for and develop an enriched environmental image, which Lynch (1960, p.150) states "gives its possessor an important sense of emotional security".

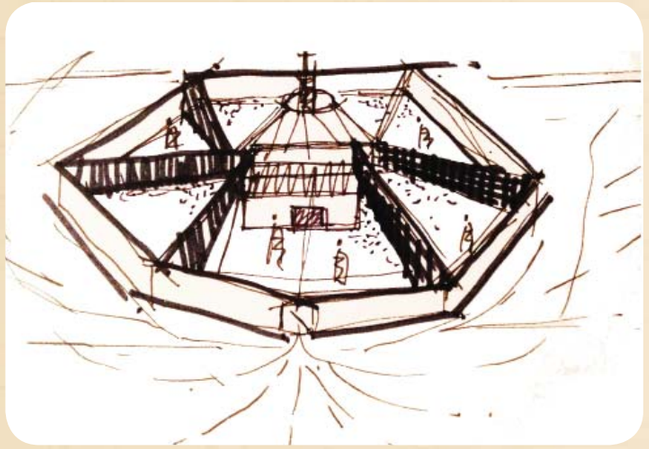


Figure 15: **Adapted from Pugin, 1836, Workhouse Plan**

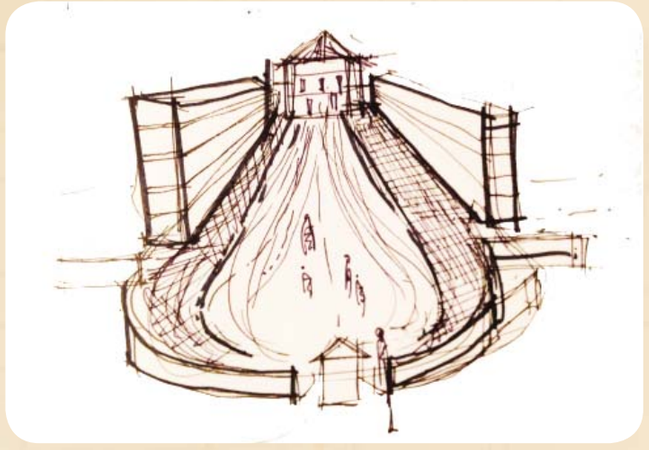


Figure 16: **The Thomas Coram Foundling Hospital**

English sea captain, Thomas Coram pioneered The Foundling Hospital, which sought to rectify the lack of childcare in Great Britain. The term foundling was defined in the Victorian age as "an infant or small child found abandoned or a child without a known parent or guardian" (Robert, n.d, p.1) as compared to the term orphan which was defined as "a child "a child who has lost both parents through death" (Robert, n.d, p.1)

Pallasmaa begins to address the fields of psychology and phenomenology, as they further develop the concept of empathic design. These fields dissect the physical and emotional environment even further and scrutinise how they have an effect on the way people function. Psychologists believe that "environmental forces guide human development for better or worse throughout life" (Coon, 2012, p.102), specifically children, who are predisposed to environmental influences which determine their developmental growth (Fig.17). The method of inter-subjective design is one way in which the issues of environmental awareness and empathy have been addressed architecturally. In order for architecture to facilitate a reconnection, the architect has to consider the user through the recollection of personal experience. This moment of overlapped subjectivity between the user and architect is channelled into the process of conscious design. The architect's ability to empathise with the user's needs enables a physical manifestation of a form, which is able to facilitate a dialogue between the body and the building. It is not a dialogue of language but rather of emotional provocation. In the case of the primary user, the child, it becomes a process of uprooting archived experiences in order to understand, as Lefaivre and Tzonis (1999) discuss, how the child operates in a fundamentally different way to the adult and furthermore reflecting this understanding through built form.

The following precedents are offered as a means of highlighting inter-subjective methods of design and exploring both the positive and negative ways in which the immediate building environment can be created and experienced by its inhabitants, more specifically children. The architectural type will be scrutinised under two programs, the institutional home and the conventional home, both of which are situated in various cities. These programs will be examined under the issues of environmental, social and political contexts and the way in which the form responds to its immediate and extended surroundings. Also, the way spaces that have been created to facilitate progressive learning environments for children, of which psychologists state is able to "literally shape the brain" (Coon & Mitterer, 2012, p. 98), will be examined. It is through a more concise understanding of these contemporary pieces of architecture that the child of the 21st Century may be fully contextualised, as it is the final progression in identifying the child's place in society.

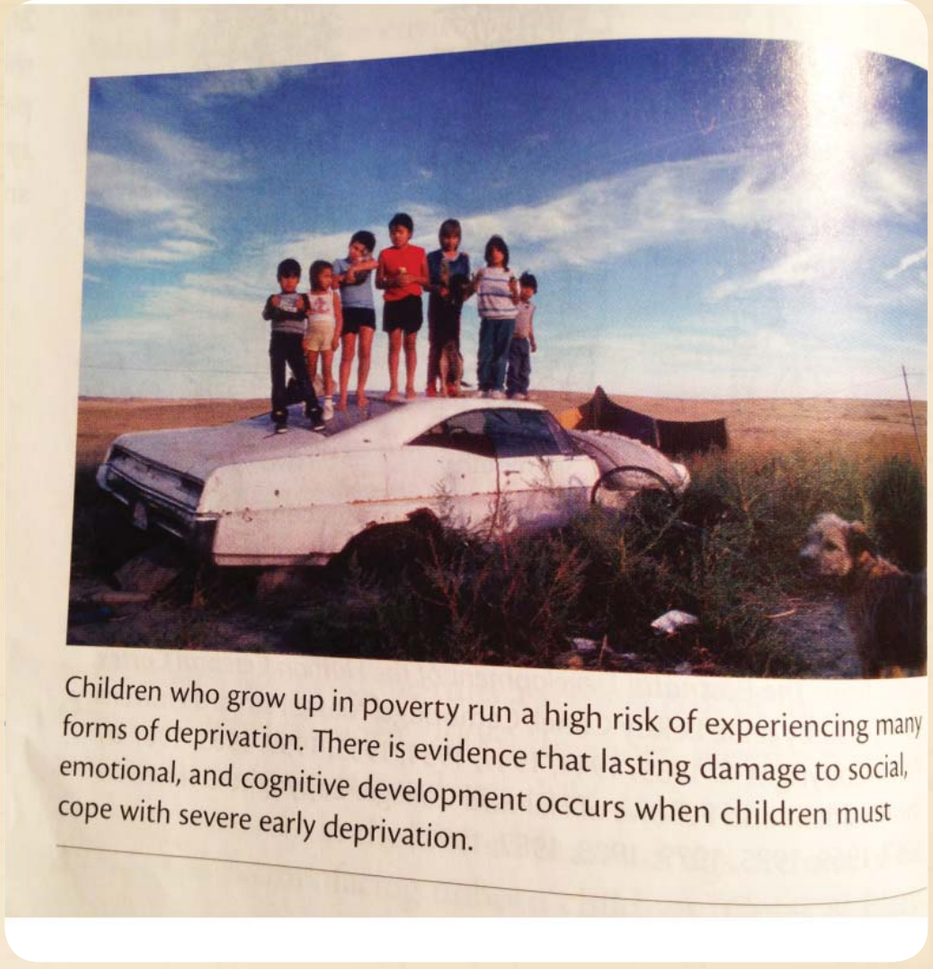


Figure 17: *Children who grow up in poverty*, **2010**

Coon and Mitterer (2012, p.102) state in the above photograph:
"Children who grow up in poverty run a high risk of experiencing many forms of deprivation. There is evidence that lasting damage to social emotional and cognitive development occurs when children must cope with deprivation".

This serves as an example as to the extent of damage poor developmental environments have on children and the importance of enabling an enriched space for the child to grow up in.

Precedent ONE__Municipal Orphanage, Amsterdam, Aldo Van Eyck

The first precedent is Aldo Van Eyck's Municipal Orphanage in Amsterdam. Aldo Van Eyck was part of the post war movement of architecture during the 1960's, where he began to develop new strategies that sought to accommodate specific user needs and explore the opportunities that building sites presented. A decade prior, Van Eyck made frequent trips to central Africa as his interest grew in anthropology and primitive dwelling forms. As a result he became closely concerned with how people experience form and space, and so conceptualised two significant terms. Twinphenomena, his first term, describes "the both/nature of things" (Van Eyck, 1962, p.347), a term aimed at the juxtapositions a space could present such as "unity and diversity, part and whole, small and large, simplicity and complexity" (Van Eyck, 1962, p. 348). The second term is identifying devices, those "elements that make space humanly comprehensible" (Van Eyck, 1962, p.347). Both notions are able to directly merge with the concept of empathic architecture through inter-subjective design, as it is through a first person understanding of the user, which enables meaningful architecture. By considering all of these elements, Van Eyck would begin to reshape the architecture within the city of Amsterdam, more specifically the role of the child within the city.

Van Eyck began with an interest in the forgotten spaces of Amsterdam and, through the implementation of playgrounds (Fig.18), began to "transform left over city sites from blind spots on a city map to an inescapable reality" (Lefaivre & Tzonis, et. al Voelker, 1999, p.17). Aldo Van Eyck was then commissioned by the city of Amsterdam to design the Municipal Orphanage, situated on the outskirts of the city, which would house 125 orphans and children from broken families. The orphanage was to have 30 – 40 staff members of which about 15 would live on the premises.

Nearly a decade after the war, the universal population began being driven by a new consumerism, affecting the quality of human relations and community, as Lefaivre and Tzonis (1999) discuss. The orphanage had the power to illustrate the "humanist" (Lefaivre & Tzonis, 1999, p.92) architecture that post war artists were trying to practise (Fig.19). The term humanist fully encapsulates the concepts of empathic design as well as Van Eyck's notions of identified devices, as all elements would contribute to a form being considered Human-like, able to connect with the user at a human scale. The program and architectural language began to form a precedent on how to create "interaction and community" (Lefaivre & Tzonis, 1999, p.92). Communal interaction is a highly critical part of childhood development, as psychologists emphasise how the environment provided for children to grow up in "may determine their developmental paths" (Coon & Mitterer, 2012, p.104), where poor environments could damage a child's "socio-emotional development".

The Orphanage comprised of many different functions, which were all situated under one roof, as Lefaivre and Tzonis (1999, p.92) discuss, a "constellation of locations… facilitating interpersonal inbetweening" (Fig. 21(a)). The concept of the in-between is a phenomenological aspect, which as defined by Herzberger (1991, p.32), addresses thresholds and is "the spatial condition for the meeting and dialogue areas of different orders". The in-between may also become an explorative, transitional space which facilitates flow between internal and external environments (Fig. 19).

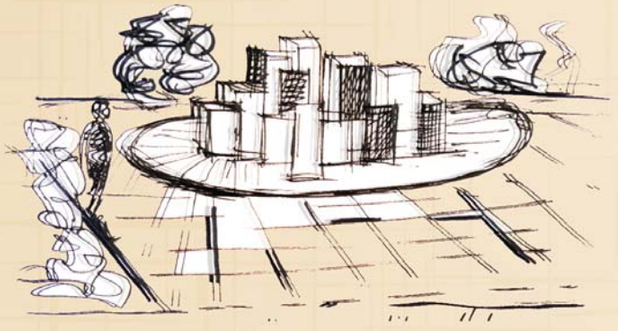


Figure 18: **Nagele School Playground, Aldo Van Eyck**

"The playgrounds were literally inbetween realms, between I and You" (Lefaivre and Tzonis,1999, p.70)

Figure 19: **Function, space and Threshold within Van Eycks Municipal Orphanage**

Van Eyck was inspired by his playgrounds when he approached the design of the orphanage as it was through exposing “small, uncovered areas” (Lefaivre & Tzonis, 1999, p.92) and the addition of some simple forms that the concept of the in-between was first manifested (Fig.21(a)). Lefaivre and Tzonis (1999, p.93) discuss further that just as the playgrounds were identified as “centres for human encounter” so too did the orphanage mimic the ideas of the playgrounds by incorporating pockets of open space from which the internal program would stem (Fig. 21(b)) . Small open areas where minimally furnished with equipment and began to encapsulate the notion of the in-between. Lefaivre and Tzonis (1999, p.93) described them as “points of interaction and exchange between various areas of the facility”. The centres were further articulated through the use of paths, which sought to empower the pedestrian by “segregating them from vehicles” (Lefaivre & Tzonis, 1999, p.94), and encouraging an intensified interaction and integration of users, (Fig. 21(c)).

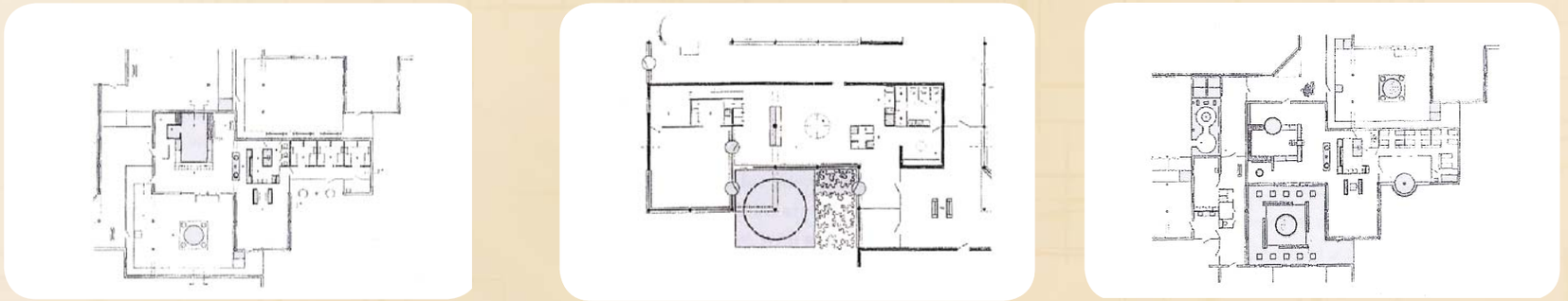


Figure 20: **Parts of the Orphanage ground plan, 1954- 1955**

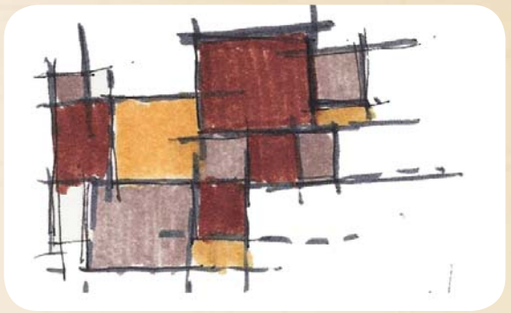


Figure 21(a): **Location Analysis**

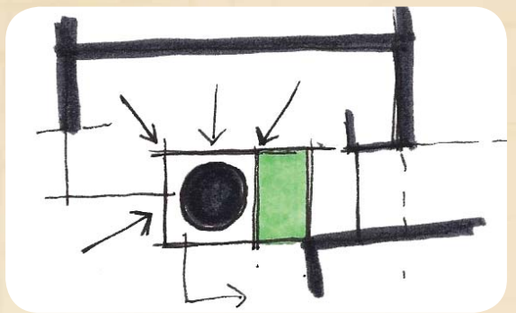


Figure 21(b): **Area Analysis**

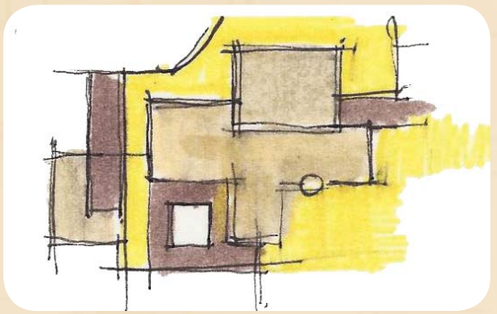


Figure 21(c): **Pockets of Space Analysis**

A circle and square theme re-emerged in the plan, a system Van Eyck used to design his playgrounds. Lefaivre and Tzonis (1999, p.104) discuss how it was a system, which enabled “the basic co-ordinating of space” and a “fundamental configuration” which encouraged group gatherings.

All of these factors formed a “diamond composition” (Lefaivre & Tzonis, 1999, p.93), a form that would come to fundamentally express the building. The building is arranged in staggered sections (Fig.22(a)), which open to the landscape and create a “highly rigorous modular system” (Lefaivre & Tzonis, 1999, p.104). A relationship is formed as the diamond shaped plan lends itself to certain “spatial configurations” (Lefaivre & Tzonis, 1999, p.104), which reinforce basic functions of the form, such as circulation, which is emphasised by the subtle use of path design, while the staggered form lends itself to the open surroundings, (Fig.22(b)). Essentially the form is a series of irregular and dispersed patterns, which come together to form a single unit. A greater connection is enabled between internal surroundings through light and pocketed transitions in space.

Van Eyck began to revolutionise the way in which the child became considered within the city through his series of playgrounds, which as Lefaivre and Tzonis describe, became “woven into the neglected holes of urban fabric” (1999, p.17). The playground thus becomes a symbol of the child, who- once kept within the holes of society - begins to emerge as a form of the in-between. The Municipal Orphanage sought to adopt those principles. The immediate form acknowledges the natural movements of the child, through punctured spaces, which are articulated with pathways and a constant transition between immediate surrounding and form.

What has been purposefully retained until now, however, is the context in which the orphanage was built. The orphanage is located in a vast open area outside of the city, on the south-west periphery. Its closest neighbours were a stadium, highway and ten kilometres further, the national airport. Van Eyck (1962, p.347) referred to the city as “a huge house and a huge house a tiny city”, and adopted this concept in dealing with the severe isolation of the site, where external interaction was in the form of “car imprisoned crowds… on their way to the airport or sports stadium” (Lefaivre & Tzonis, 1999, p.94). Therefore Van Eyck aimed at creating a home for children within a small city plan, as Balters (2011, p.2) discusses further “ Van Eyck was interested in a non-hierarchical development of cities and in the Amsterdam Orphanage he created a building with many in-between conditions to break down the hierarchy of spaces”.

Figure 22 (a) : **Modular System of Form**

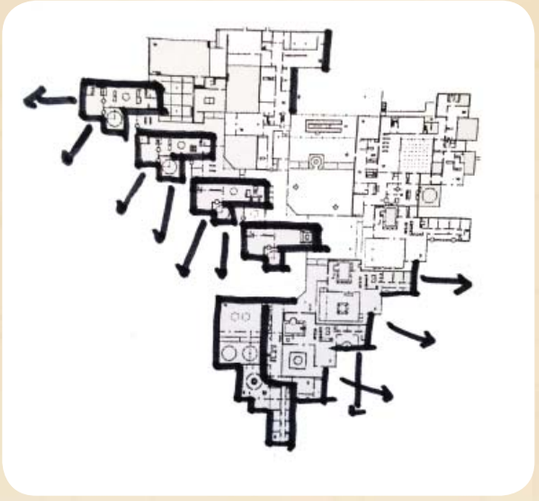


Figure 22 (b) : **Form and Surrounding Diagram**

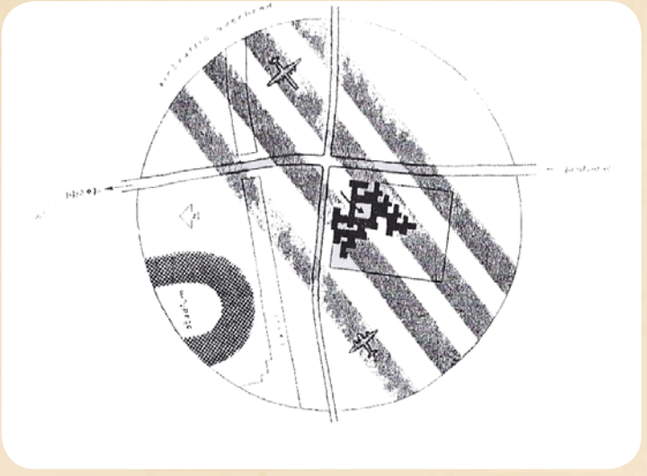


Figure 23: ***Path of Planes*, 1960**
This illustration emphasises the depths to which the site was isolated from the greater Amsterdam community.

The irony of the project lies within the fact that although Van Eyck sought to compensate the isolation of the site by creating a micro-city, it is that very compensation that prevents the building from truly being a humanist piece of architecture. The building functions from within and inhibits the user from a natural connection to the extended environmental context. The form sits alienated from the city, and so the child, instead of being integrated into the society of Amsterdam, is forced to mimic the place of the historic orphan. The freedom of the internal structure and space is hardly enough to balance the lack of connection to the greater community. It is this fundamental flaw that highlights the importance in conceiving the notion of dialogue, which should be presented to the user as a natural relationship between space, environment and people; if one element is not present, the architecture is mute.

Precedent TWO_ Quinta Monroy, Chile, By Elemental

The next precedent, Quinta Monroy, is a low cost housing project in Chile by Alexandro Aravena, partner architect and executive director of Elemental. Elemental is an equal partnership between an architect, an oil company and a university. Together these organisations focus on housing, infrastructure, transportation, institutional buildings and public spaces. Elemental's philosophies partner those of previous theorists such as Lynch, as they too "see the city as a powerful instrument that has the potential to create… and act as a medium through which [they] can generate quality of life" (2013, p.1).

As outlined in Chapter One, one of the issues of concern regarding orphan-hood in the method of "rights-based care" (Abebe, 2009, p.1) is how the greater global issues of poverty and inequality, which enables orphan-hood, are not considered foremost. Instead of considering the needs only of the orphan child, international aid organisations should adopt a preventative approach to orphan-hood that is derived through holistic schemes of communal empowerment. This approach should address the needs of entire disadvantaged communities and provide the program and resources needed to prevent the dissolution of family units, which is one of the catalysts of orphan-hood. Elemental's scheme provides a prototype (Fig.24), which develops a tangible solution, enabling equality and a potential for economic growth, as old scenario's expected families to move into wealthier area's as they became more financially stable. This resulted in families being forced to live in smaller homes in more modern areas, belonging to communities to which they were unable to adapt.

A new government program allocated 7,500 USD for the subsidy of land, infrastructure and building costs of one house per family. Cumberlidge and Musgrave discuss further how this figure would have resulted in only 25 – 30 square meters of space, which meant that families would have to still provide funding in order to produce a "full-dwelling" (Cumberlidge & Musgrave, 2007, p.200). Elemental was thus formed out of concern for the sustainability of social housing, based on existing economic and social networks. The cheapest land was found at the periphery of the city further isolating the families from economic opportunity, resulting in "belts of unemployment, resentment and violence" (Cumberlidge & Musgrave, 2007, p.200). An isolated house in the middle of an alienated piece of land defined the common typology. Elemental proposed that sites be better located within the city to provide equal work opportunities for the poorer families, and the types of houses designed should be multiplied in order to create a sense of community (Fig.24), an environment which "contributed to a better quality of urban space" (Cumberlidge & Musgrave, 2007, p.200).

Figure 24: ***Elemental Conjunction,*** 2003

According to architecturebuildings[dot]com, assuming that one house holds one family which occupied in a one lot area, the design was able to host just 30 families in the site. Elemental thought to achieve enough density without overcrowding, in order to be able to pay for the site, which because of its location was very expensive. The collective space (a common property with restricted access) is an intermediate level of association that promotes the empowerment of the families who were previously housed in delapidated areas.

Cumberlidge and Musgrave discuss how the project was tackled from a number of different angles, namely architectural design, engineering and constructing, in order to develop prefabricated components and social and community work - a pre and post construction guide to residence. The prototype that was created enables the user to expand upon the existing form, as their economic circumstances gain momentum (Fig.25)

Quinta Monroy thus reflects an empathic architecture, as the architect, Aravena, used psychological principles of identification and orientation to address the user and his relationship to his surrounding context, by maintaining social and work networks. The location of Van Eyck's Municipal Orphanage was on the outskirts of Amsterdam and completely removed from the city, creating an isolated building environment. Quinta Monroy is situated in the centre of port city Iquique. Iquique is one of Chile's most visited cities according to Hamre (2013) and is trying to define itself as a commercial city. The project provided housing for nearly one hundred squatter families, who had previously occupied a site near the city centre illegally. Due to this fact, the cost of the land was far greater than that of the peripheral suburban areas the poorer population were forced to inhabit. Elemental decided to concentrate on the bare essentials of a house (Fig.27). The basic framework was provided, consisting of a kitchen, bathroom and bedrooms. Technical and design workshops were then formulated in order to help the communities participate in the building process in order to provide them with the skills they would need to develop their homes further (Fig.26).

Figure 25: ***Quinta Monroy Social Housing Project in Chile*, 2003**
Photograph illustrating the exterior facade of the Scheme during construction

Figure 27: ***Man and Son in Elemental unit,2007***

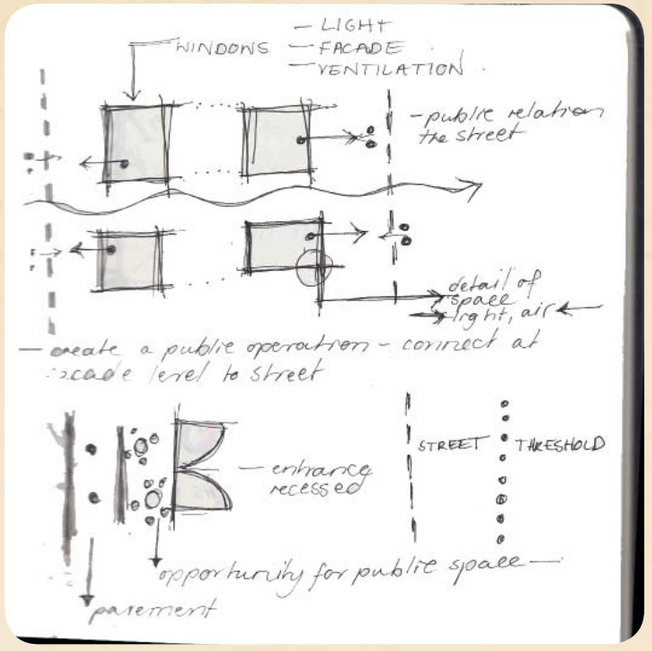


Figure 26: **Conceptual Sketch examining posibilities of courtyard housing schemes**

The planning of the development is based upon communal space, where houses are grouped around courtyards, which contain around 20 families. The typology comprises of two floors. The ground floor units are created as flexible modules, which, if needed, can expand horizontally, and the top floors have been designed to enable vertical expansion (Fig.28). It is these factors that contribute to the notion of dialogue. The design lends itself to the user being able to connect intimately with his surrounding space and the people who directly occupy it, as well as maintaining a connection to the city, through location. Further, the architecture addresses the conditions of the families within realistic parameters and becomes a tool for adaptation (Fig.29). This process identifies a notion, which Schulz (1980, p.14) discusses, by encouraging the user to develop his own space, as "the existential purpose of building is therefore to make a site become a place that is to uncover meanings potentially present in the given environment".

A far less complex scheme than that of Van Eyck's Municipal Orphanage, Elemental begins to outline components, which facilitate empathic architecture. As previously discussed, the concept of empathic architecture recognises that the building does not possess human emotion (as it is a material object), but it is rather the representation of the feelings the user experiences when engaging with the architecture.

By literally empowering the user to define his own space, the form reflects a greater example of the humanist architecture Van Eyck sought to achieve, where humanist architecture partners the dialogue of empathic architecture. This humanly attuned sense of form also draws a parallel to the typology of the SOS Children's Village, addressed in Chapter One, whereby the orphaned child was empowered through the creation of "family-like environment[s]" (Abebe, 2009,p.6) facilitated through a series of homes built in a village formation. This is not to say that Van Eyck failed completely at providing a healthier environment for the orphaned children of Amsterdam, however, the site's location and the program of the orphanage did little to provide a future for the child within the architecture. It conforms to the aforementioned scenario of architectures inability to adapt to the user. Elemental achieves existential space (lived space) through empathic design as it "supports its residents' future self-defined designs... building their sense of pride and ownership" and has created "communities that have a long-term sustainability within the city" (Cumberlidge & Musgrave, 2007, p. 202). Although the architecture is not specifically aimed at the orphaned child, through the aforementioned method of addressing the 21st century issue of rights-based care, Elemental creates a preventative strategy. In this strategy, the child is empowered through community, site selection and freedom of space, which is the ability to manipulate the existing form.

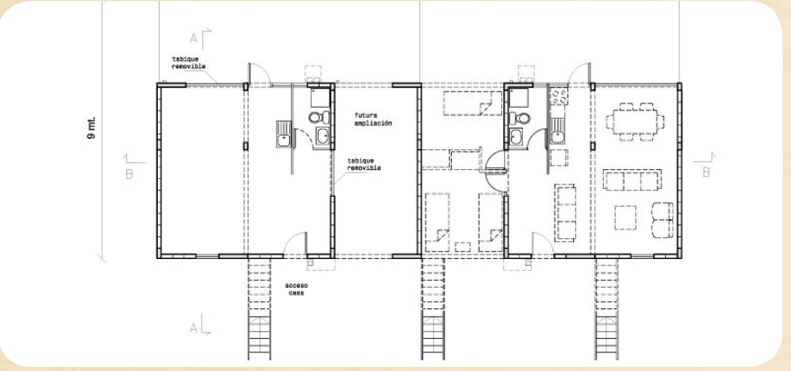


Figure 28: ***Quinta Monroy Plan Elements,2007***

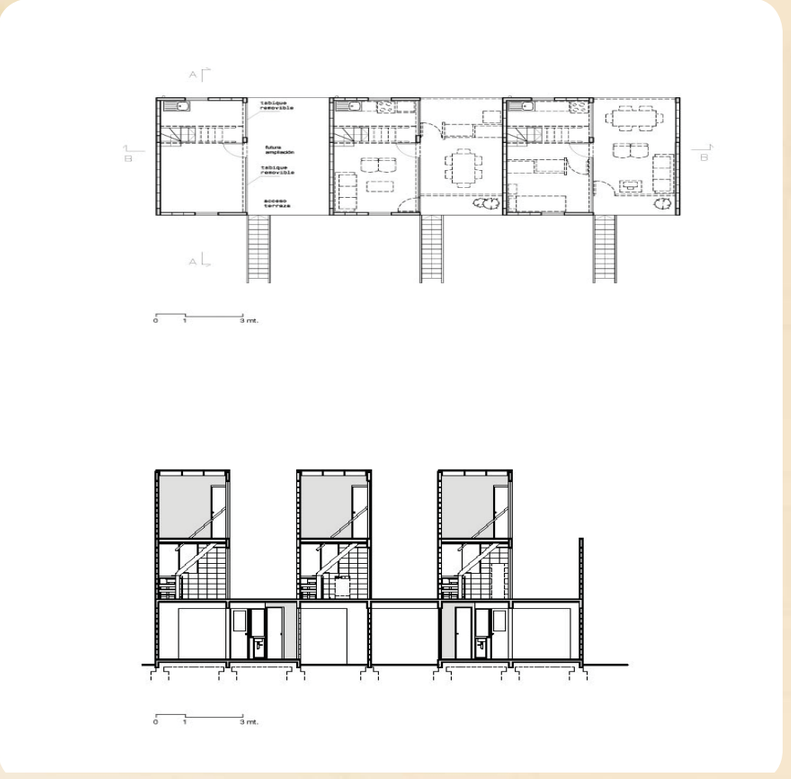


Figure 29: ***Quinta Monroy Plan to Section,2007***

Precedent THREE__New Jerusalem Children's Home, South Africa, 4D+A Architects

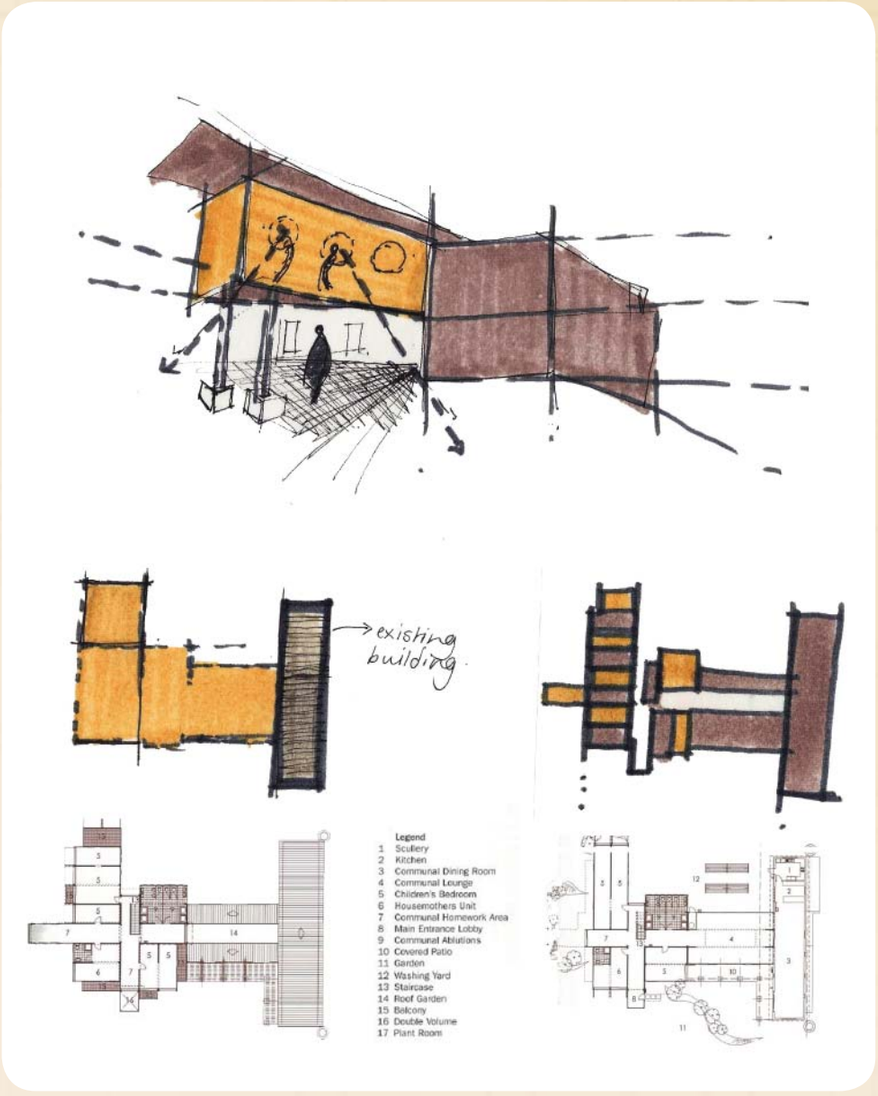


Figure 30(a): **Sketch analysis of the New Jerusalem Childrens Home**

Figure 30 (b): *South West Elevation*

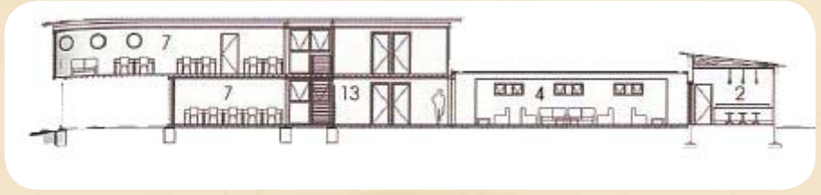


Figure 30 (c): *Section*

Figure 30 (d): *North West Elevation*

Precedent THREE__New Jerusalem Children's Home, South Africa, 4D+A Architects

The final precedent is the South African orphanage, the New Jerusalem Children's Home (Fig.31), founded in 2000 and continues to be run, by two sisters, Anna and Phina Mojapelo. Parker (n.d) discusses how Anna was the first of the sisters to begin the charity, and as it began to expand she recruited the help of sister, Phina, who had worked as a social worker for 17 years at the time. As a non-profit organisation, the home functions through "the help of volunteers, government and community agencies and donations" (Parker, n.d). The home is shelter to 80 children aged 1- 18 who are orphaned, abandoned, abused or HIV positive.

The program is centred around the education of the children within a safe environment. Current facilities include nurseries for the babies, a crèche, a Montessori pre-school, play and sports facilities and a substantial permaculture vegetable garden. Volunteers assist in the care and development of the children through different projects. The home is situated in President Park, Midrand, Gauteng and also serves the surrounding populations of Ebony Park, Ivory Park, Tembisa and greater Midrand, all of which contain a diverse range of people, from informal settlements to working and middle class communities. The home's ultimate aim is to create environmentally friendly houses in which the children can grow up, where each home houses a family of 12.

Figure 31: ***New Jerusalem Children's Home*, 2013**

Figure 32: ***Perspective of New Jerusalem Children's Home*, 2012**

A container house was designed by 4D + A Architects as part of the residential typology, which was part of the home's rejuvenation. The original dormitories were not conducive to healthy living conditions, with over-crowding and degeneration. The container house is a family-type home that was designed to accommodate New Jerusalem's criteria to satisfy a social response. The container takes on the form of a crucifix and comprises of 28 recycled shipping containers, which connect to an existing brick building that has been renovated, consisting of a kitchen and dining room (Fig.30). The nature of the containers enabled the form to be manipulated individually and simply plugged into the original structure and so, the home could be built within six months. The house accommodates 24 children, 12 girls upstairs, 12 boys downstairs and two house mothers. The containers are between 12 and 6 meters in length, and the crucifix formation houses different programs, such as a homework room, which cantilevers over the main entrance (Fig.32). Floor-to-ceiling aluminium framed windows establish a visual connection with the outside as well as naturally lit and ventilated spaces and verandas have been designed at the end of the containers to create a threshold between inside and outside (Fig.30).

Not only does the home provide for the children who permanently reside there, but the extended facilities and volunteers have been able to provide for the area's community at large. Children come from the surrounding areas to attend crèche/nursery school at The Orange Babies Montessori pre-school and nursery school (Figure 26). The eco-friendly approach to the entire facility is maintained through basic principles of recycling and passive and natural environmental controls, such as solar heating and grey-water recycling. Thus, although the home is located on vast agricultural site of 26000m2, the program has been developed to connect the children living on the premises with the rest of the community through sustainable projects and the schools which cater to the children in the surrounding community. This allows for a balanced environment between personal space and sense of community as the architect Wall (2012,as cited in Anon,2012) elaborates, "The idea was to create a home [and provide] a sense of personal space… one of the biggest changes [in the children] is the sense of pride and ownership that they have developed".

The New Jerusalem Children's Home addresses the aforementioned psychological and phenomenological principles of environment, as specific attention was given to the types of spaces that would house the orphaned children. These spaces can be identified within phenomenology as "objects of identification" (Schulz, 1980, p.18), defined by the forms provision of "concrete environmental properties" (Schulz, 1980, p.18). It is those properties of the environment, which enable the user to develop a relationship with the building and its immediate environment combining them and thus recognising them as one object. This type of connection, which Schulz (1980, p.18) adds "[develops] during childhood", proposes a method of dialogue.

Figure 33 (a): ***Snack time at Orange Babies Montessori Preschool,2011***

Figure 33 (b): ***One of the two spacious classrooms,2011***

These three precedents have provided examples of the different ways empathic architecture is able to engage in the concept of dialogue, where the connection between user, building and environment is facilitated through the constant inter-changing between which aspect provides the basis of connection. One of the first processes can be identified in the way a building is programmed in order to facilitate community interaction, which is successful when the space the form creates encourages social engagement. This was illustrated in the New Jerusalem Children's home, who, through additional programs integrated the community in social, educational and ethical programs. Thus the architecture that is host to the programs can be recognised as empathic, as it promotes enriched environments which encourage the users to empower themselves.

One of the first processes can be identified in the way a building is programmed in order to facilitate community interaction, which is successful when the space the form creates encourages social engagement. This was illustrated in the New Jerusalem Children's Home, who through additional programs, integrated the community, in social, educational and ethical programs. Thus the architecture that is host to the programs can be recognised as empathic, as it promotes enriched environments, which encourages the users to empower themselves.

A second process of dialogue, which produces empathic architecture, is the direct connection the building is able to create between user and environment. This connection is recognised through the Chilean precedent of Quinta Monroy, where the planning scheme inevitably created a sense of community. The environments that the spaces created were physically controlled by the user, through the forms ability to continually be constructed upon.

Finally, Van Eyck's Municipal Orphanage was designed to specifically accommodate the needs of the child. Van Eyck had tried to understand these needs through his previous experience with the children's playgrounds and his interest in the cognitive development of children.

The 20th and 21st centuries appear to have become more sensitive to the social, environmental and political conditions that create the different types of communities around the world. Architecture, although generally a bystander to these new ideals, is slowly being developed to represent and empower communities. The sporadic examples that culminate these principles are inspiring pieces of built form, however simple they may be.

The following chapter continues to examine the external environment within a greater context and within more detail. The concept of dialogue is further explored, as the third component of dialogue, the environment, is completely identified and engaged with. This process enables the introduction and analysis of the chosen site of the thesis and the program the form shall become host too. The chapter is comprised of three parts: the theoretical introduction and consolidation of the importance of environment in the context of dialogue and the theories which support it; the introduction and description of the thesis site; and the final progression to the thesis program which was derived as a combined result of the former research, precedent appraisals and theoretical underpinnings.

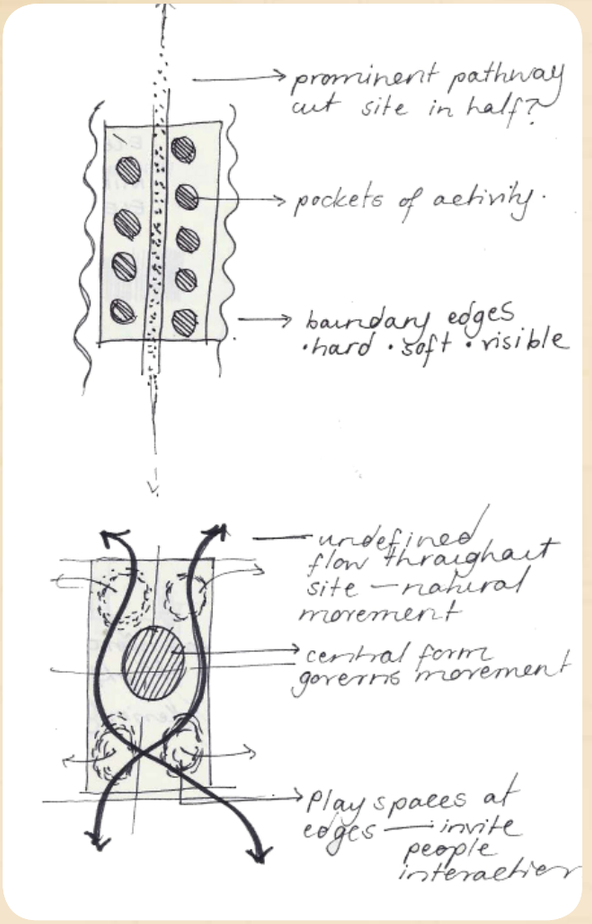


Figure 34: **Conceptual Sketches based on my aquired knowledge of the aforementioned precedents.**

CHAPTER THREE

Site Selection and Program Motivation

This chapter begins to look at the greater context within more detail. The site of a built form holds as much importance as the user in the relationship to the architecture. Thus the dialogue between user, architecture and environment is further explored, more thoroughly identified and will be addressed within a greater context. Upon the completion of examining the final component of the site, the conceptual process of empathic design may begin.

The proposed site of the thesis shall be introduced in the first half of the chapter and shall be elaborated upon within the concept of empathic architecture through inter-subjective design. It is through the detailed understanding of the site's historical, social, political and environmental context that a progression can be made to the second half of the thesis, the program development. The program will be presented and partnered with psychological theories of childhood development.

Chapter Two, through the use of precedent appraisals, places greater emphasis on the immediate building, its environment and the relationship it creates with the user. This chapter shall relay the important influences the site has on a proposed form. The proposed site environment and its users shall be understood within the historic, social and political contexts, which will provide the penultimate step in fully conceptualising the importance of dialogue. The program will form the final step towards an empathic design. By being paired with psychological principles, it shall fully encapsulate the physical and mental processes of the child user.

C3

The next layer in the design process is ascertaining the site and its context, as it is the third component in the dialogue of empathic design, as Sahabuddin (2011, p.1) so eloquently states, “we need to know what is there before we can insert anything new”. Context, according to the Oxford English Dictionary is defined as the “circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood”. The site for a proposed piece of architecture is analysed under the same topics as the history of the user; those being the physical, social, environmental, economic and political issues. The site, in application to the primary user, the child, is of as much importance as the form itself. The expanded environment, which the site creates, can be seen as the physical guardian of the child, where the home is the parent.

As discussed in the previous chapter, psychologists highlight the effects the environment has on the developmental process of the child. If one is to consider the contemporary orphan more closely, the environment plays a far greater role compared to that of a conventional child, as the orphan identifies the city streets as her home. Global environmental influences such as poverty, HIV-AIDS and drugs, issues which Abebe (2009) discusses, are bred in both physically and emotionally polluted environments. It is those environments, which large organisations such as the United Children’s Fund, and small charities, like the local Cotlands Baby Sanctuary, are fighting to improve, in order to avoid an increase in orphaned children and broken families. Those environments are the places, which Schulz (1980, p.2) states are “a totality made up of complex things, having material, substance, shape, texture and colour” and it is these elements which “determine environmental character” (Schulz, 1980, p.2). Psychologists state further that as much as a child’s heredity plays a part in its development, those genes are ultimately stimulated or agitated through “environmental influences such as disease and culture” (Coon & Mitterer, 2012, p.98).

The psychological effects caused by the type of surroundings a child is exposed to, further defines the importance in understanding the social, political and environmental context of the site. As discussed by Coon and Mitterer who state that, during the cognitive stage of development (Fig.35), children experience a sensitive period where they are more “susceptible to particular types of environmental influences” (2012, p.102). Thus a site and its context, once understood, can be empowered to promote a pro-active foundation to the proposed built form, by providing an extension of the enriched environment which the building alone aims to achieve.

Sahabuddin discusses how a site and its context “promote continuity between building and local circumstances” (2011, p.1). The site is the unspoken connection to past cultures and programs, which enables a “symbol and identity” (Sahabuddin, 2011, p.1) that defines the site to a certain extent. In the context of South Africa, more specifically Johannesburg, the majority of orphanages are housed within old suburbs. Once progressive, poverty and a lack of maintenance have left these suburbs strewn with drugs, prostitution and illegal businesses. They remain, like the historic institutions, forced to function from within and, isolated from the extended external environment. The child is thus removed even further and the notion of dialogue is broken. The child user can therefore be seen as ‘orphaned’ from a greater social context.

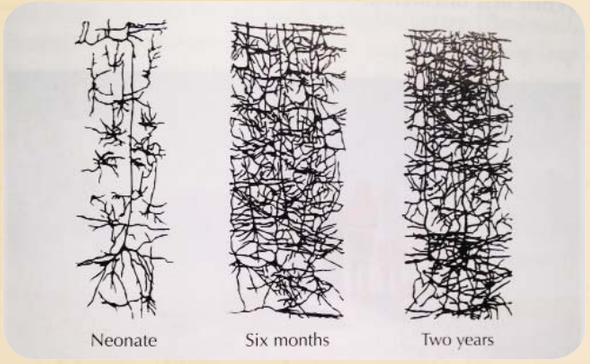


Figure 35: ***The postnatal Development of the Human Cerebral Cortex, Vols. I-VIII,*** **1991**
Coon and Mitterer (2012,p.100) state that a child’s brain is “highly plastic” and new nerve connections are created everyday for the first three years of the child’s life. If the child is not stimulated accordingly, those connections “disappear” thus the brain can be manipulated to ensure development.

Figure 36 **The proposed site in Yeoville, Johannesburg**

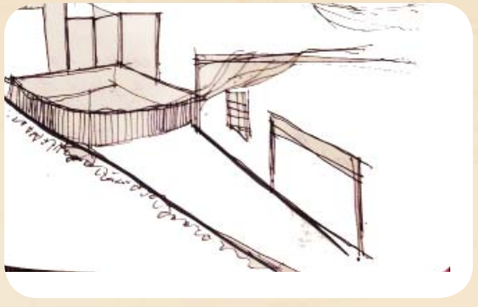


Figure 37 **Photographs of the Orange Babies Montessori Pre-School.**

The chosen area is the inner city suburb of Yeoville, Johannesburg and has been categorised as a low density residential area according to the Johannesburg City Council. Yeoville is home to a broad demographic, most of who have been affected by the areas economic decline through lack of external investments. Smithers (n.d) discusses how Yeoville came to being known as as a vibrant suburb which began in the late 1970's, when a small club opened in the well-known Rockey Street. The proceeding years saw a number of clubs, restaurants, jazz bars, bookshops and clothing stores open and transform Rockey Street, more colloquially known as High Street, into an artist trending area. During the 1980's the political state of the country saw the apartheid government challenged "with a fury not seen since the 1960's" as Smithers (n.d, p.1) describes. As a result the suburb became a "liberated zone" (Smithers, n.d, p.1) and black and white communities joined to celebrate the artistic culture of the suburb. The first democratic elections in 1994 had a profound impact on Yeoville. High Street remained empowered with activists, artists and musicians, who found unity in the rebellion against the Apartheid government.

However, according to Smithers (n.d), post-apartheid also resulted in a decline in urban management. Home owners and landlords vacated premises around the suburb, ironically upset with the lack of 'white control' over the area, however liberated it appeared to be. In the early 2000's a demographic shift saw banks refusing to grant finance bonds to prospective homeowners and this resulted in a greater portion of people renting property and resulted in an increased amount of immigrants. Renting became expensive and due to the poverty of the tenants, properties became over-crowded. The buildings thus became neglected and damaged as the infrastructure in the area became overloaded.

Today, Yeoville is a community of immigrants and is recognised as a Pan-African suburb. Yeoville can be conceptualised as a lattice of different environments, which have been categorised by the variety of communities which surround it. Gbfaou (n.d) discusses how, to the middle class citizens who merely use the suburb as a transport arterial to major locations in the city, Yeoville is viewed as a slum. However, the Yeoville community, as well its adjacent neighbours, understand it as the same vibrant neighbourhood it was in the 1990's. There are a number of active community organisations within the area, such as the Yeoville Stakeholder's Forum (YSF) and the Yeoville Bellevue Community Development Trust (YBCDT), who work for the betterment of the suburb's community. The Johannesburg City Council has identified issues within the suburb, such as the physical degeneration caused by litter and decay as well as illegal land operation and land invasion as a result of the vacated buildings.

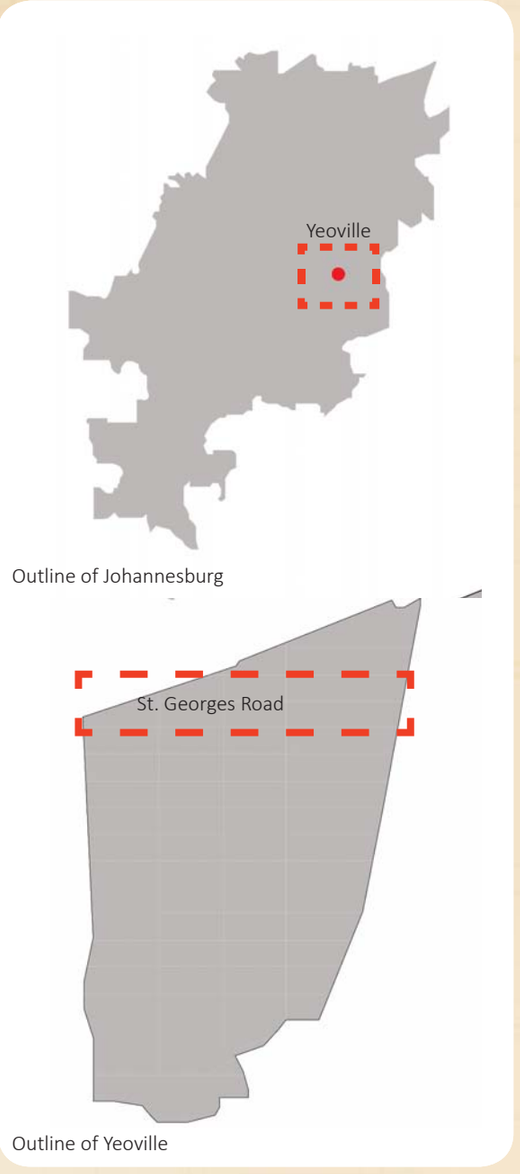


Figure 38: **Yeoville: Micro and Macro Context of Johannesburg**

Proposed Site

The suburb of Yeoville projects a pro-active environment for the community who occupy it. There is an apparent dialogue between the surroundings and the people who enjoy the public spaces as they form a network of social connections.

The site two streets down from the main motorway of Louis Botha and its peripheral roads are used as main arterials to access the motorway with Louis Louis Botha Avenue and Bezuidenhout Road contexualise site boundary.

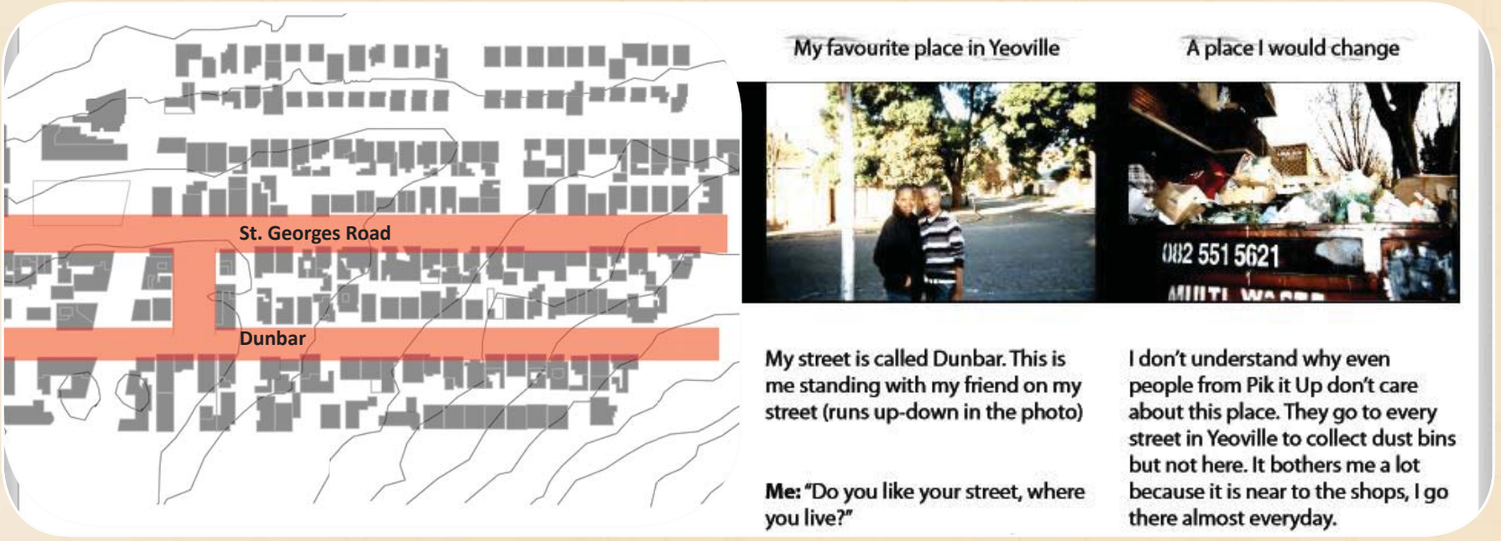


Figure 39 (a) ***Yeoville Studio: "Being Young in Yeoville"*** **,2011**
A then 17 year old girl documented her experience of living on Dunbar Street, which makes up the South Peripheral boundary of the proposed site on St. Georges Road.

Figure 39 (b) **Proposed Site and Peripheral Street Connections**
St. Georges Roads runs North of the Site and Dunbar Street runs South.

A renewed interest in the area seems to have manifested in the form of Yeoville Studio, which began in 2010. Yeoville Studio consists of members and staff of Wits University, School of Architecture and Planning and their partners, the YSF and YBCDT. The project, since its inception, has continued to address housing and public space issues within the suburb. It has also focussed on developing a greater understanding of the different African communities who inhabit the majority of the suburb and their undocumented histories which have shaped the image of Yeoville today. In researching the theme of this chapter, the influential dialogue between the extended environment, its users and built form, one project was found to identify significantly with it. This project, Being Young in Yeoville, is the result of Wits Honours Student, Potsiso Phasha, who chose to document perceptions of youth in the Yeoville space. Five teenagers were to record, through photography, places which held significance throughout the suburb. Captions were given to them and an auto-photographic series was created which ultimately emphasised the diversity of Yeoville. Although the focus of the project is on adolescents and not young children, Phasha (2011) documents the fluid connection the youth of Yeoville are able to experience with the environment. She looks at their relationship with the street, pavement, parks and corner cafes, which provide them with a sense of freedom as they are able to identify with one another's culture and thus find security in community. The suburb appears to overflow with culture and diversity and represents the third component of dialogue: the ability the extended environment has to influence the user's emotions towards a space. A user is less likely to approach a building if the surrounding area evokes feelings of alienation and threat.

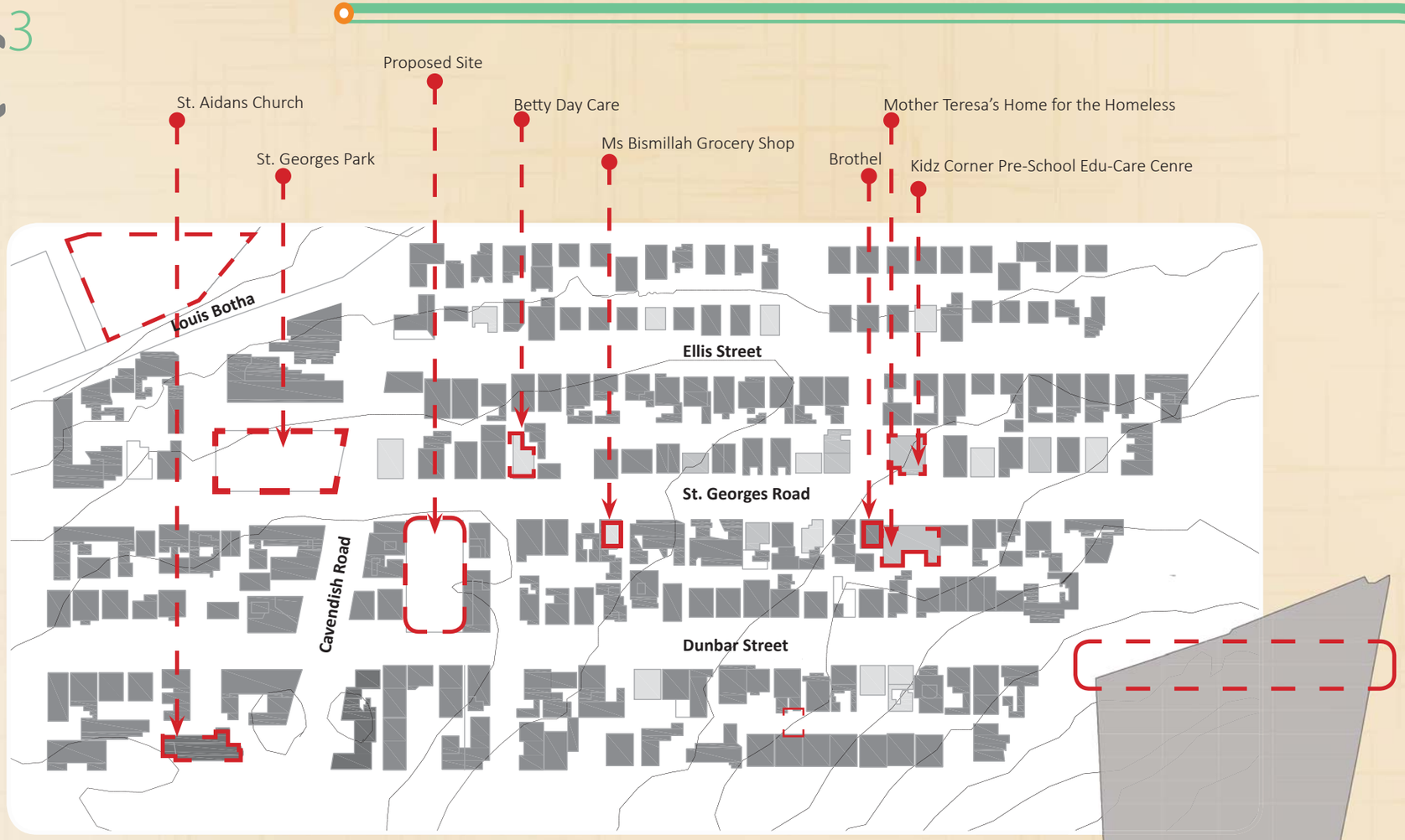
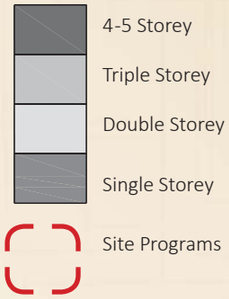


Figure 38 (c): **Proposed area of Interest in the suburb of Yeoville**



However, the site that I have chosen to develop is situated on the northern portion of St. Georges Road in Yeoville and is more fragmented in nature. The road houses a variety of different programs, some of which contradict each other and as a result, isolate the built forms from connecting with the extended external environment (Fig. 38 (c))

Figure 41: **Proposed area of Interest in the suburb of Yeoville**

Figure. 42:**Proposed area of Interest in the suburb of Yeoville**

The road presents an infinite amount of potential communal connections from basic physical elements such as the wide pavements, quiet streets as well as the natural social framework of the area. These photographs were taken during a week day of which the pavements only see the hurried pedestrian rushing from one isolated environment to the other. The weekends reveal more movement but on the same basis of families moving between buildings.

The proposed site is surrounded by the common 3-5 Storey flat typology of the area; a park situated North-West of the site thus attracts the children who live in the neighbouring flats and smaller houses as it becomes their “back yard”. Although St. Georges Road is a quite suburban road, the children remain confined to the park space, as there is a constant flow of vehicles which use the perpendicular road which cuts between the park and proposed site, (Fig.43) as a direct connection to the main road, Louis Botha, and create a boundary to which the children are restricted.

Figure 43:. **Proposed area of Interest in the suburb of Yeoville**

Figure 44: **Proposed area of Interest in the suburb of Yeoville**

C3

The communal programs the area is presented with has the potential to reintegrate the community through cultural, religious and charitable practises. One does not feel unsafe when walking through the streets, however there is a strong police presence in the area due to the amount of illegal operations which function within the buildings. The inappropriate use of space has thus created a catch 22 situation whereby not only the illegal activites function in isolation but also the communal programs which results in very little communal integration beyond the building boundary

Kidz Corner Pre-School for Edu CARE Centre

Mother Teresa's Home for the Homeless

St. Aidans Church

M/s Bizmillah Grocery Shop

Betty Day Care

Figure 45 **Proposed Area of Yeoville**

A particular focus has been placed on a care facility just east of the proposed site. The home is run by nine missionaries and provides care for those affected by a variety of diseases, the orphaned, abandoned and mentally ill. This home serves as the basis for the proposed program as, although it functions within a progressive suburb, the home is situated between a brothel and abandoned house, which eliminates a connection to the street as a whole. As a result of the surrounding buildings, the extended environment is geared towards isolation. The home and its users remain enclosed by gates and fences. Visitors and volunteers cross secured thresholds, which are closely monitored for unwanted intruders. The program thus began to manifest itself as the catalyst which could potentially reconnect the three components of dialogue which have so clearly been broken within St. Georges Road; that being the simultaneous relationship between the child user, the building and the external environment.

Figure 46: **The Care Facility on St. Georges Road**

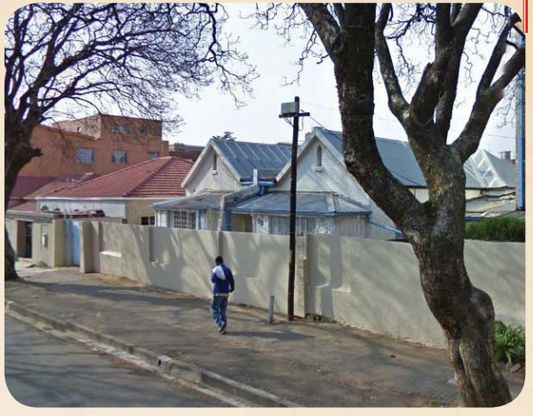


Figure 47:**The abandoned house, the left of Facility**

Figure 48 **The brothel , to the right of the Facility**

Program Formation_

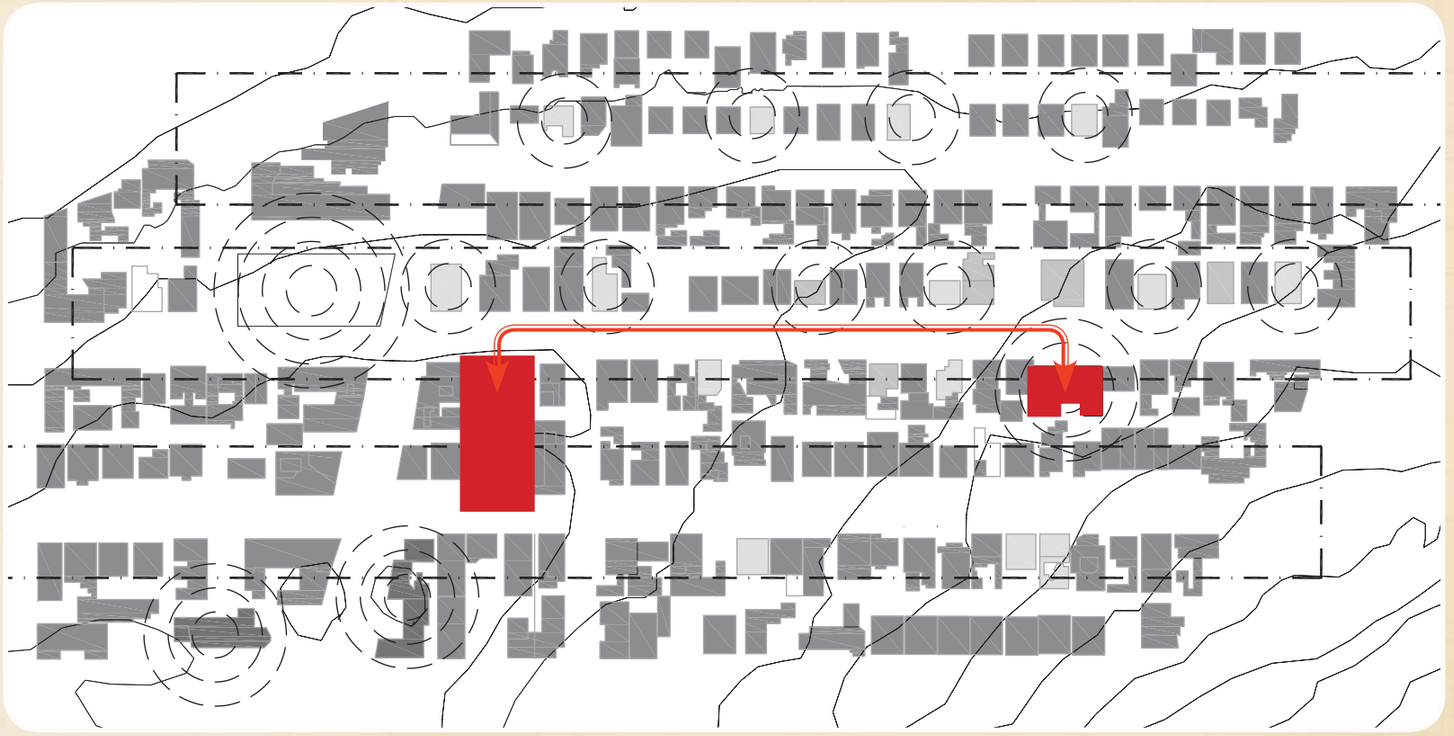


Figure 49:
Proposed Yeoville Site Context: Community
1:2000

4-5 Storey
Triple Storey
Double Storey
Single Storey
Community Boundary
Communal Node (Publically Programed: furniture shops, cafes, nursery schools, charities

As previously discussed, the proposed area contains a variety of public programs, however the suburb appears to have unintentionally created a cultural divide, whereby specific demographics are prominent from street to street and thus create a series of isolated communities.

It was upon researching the child in history, as addressed in Chapter One, that an interest in the child's place in contemporary society began to develop. The result of more recent precedent appraisals, in Chapter Two, then revealed the hypothesis that the orphan's place in history is the child's place in contemporary society. Finally, the site began to materialise as a result of the preceding research and was used to develop the foundation for the formulation of the program. By addressing the primary child user in its historical and contemporary contexts, outlined in Chapter One and Two, the program could also be informed at a greater depth.

A dual program was devised which proposes an alternate living space for all the orphaned children housed in the care facility and simultaneously provide a learning environment, which facilitates the healthy development of the children. D.O.C is the Developmental Orphanage for Children whose purpose is to remove abandoned and orphaned children from the streets of Yeoville as well as to propose an alternative home for those children in the care facility as their living conditions are not conducive to a healthy developmental environment, which reflects the principles of empathic architecture. The second program functions independently of the home and runs at ground level. It involves training willing volunteers as qualified caregivers, which form the Caregiver Program (C.P). This program is proposed to be facilitated by the Occupational Therapy Department at Wits University. The university requires all occupational therapy (OT) students to complete a certain number of fieldwork hours as a pre-requisite to the completion of their course. The OT students, under the observation of their supervisors, will teach the volunteers the skills that are required to help the children reach their developmental milestones. Once trained, the volunteers are promoted to teachers and are then able to teach the children of the area, instilled with knowledge that exceeds the generic classroom. The aim of D.O.C is to provide a structured and nurturing environment, encouraging children to develop to their full potential.

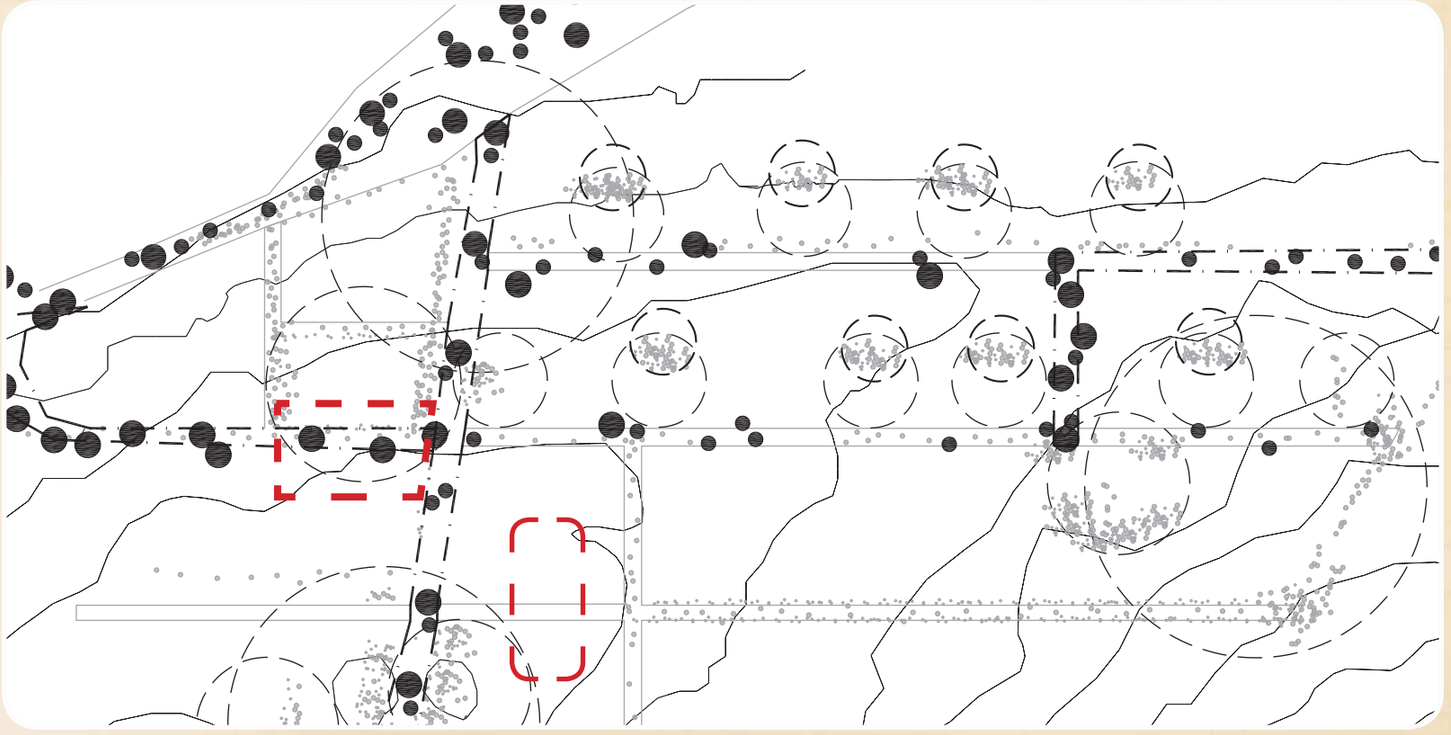


Figure 50:
Proposed Yeoville Site Context
Network Integration
1:2000

Taxi Movement

Motor vehicle Movement

Pedestrian Movement

Peripheral and Adjacent Arterials off St Georges Road

Public Program and Internal User Pattern

Potential Network of pedestrians

Peripheral and Adjacent Arterials off St Georges Road

The Mapping illustrates the Vehicular and Pedestrian Movement across the proposed area. Pedestrian activity is sporadic as different programs across the area function during different times. The peripheral edge of St. Georges Park generates alot of public movement, as well as common taxi drop offs which are most often at the corners which intersect the main arterials to Louis Botha and backroutes to Senderwood in Linksfield, an upper class suburb, West of the site.

The program of a building is able to facilitate the connection between the phenomenology of architecture, which addresses existential spaces and the psychology of people, which addresses the processes of the brain. Schulz (1980) explains that existential space is the integration of man with his environment, which enables a cultural and social whole. The dual program has the ability to integrate the child and adult users with the building and surrounding environment, thus proposing an existential space. Schulz (1980) continues by stating that the existential space is subconsciously perceived through cognitive space, which is man's mental process of his environment. It is here that the link occurs as the psychological aspect takes place. An interdependent psychology takes place as D.O.C becomes dependent on the support of the community within St. Georges Street. D.O.C will require volunteers for the Caregiver Program, while the community will depend on D.O.C as it will provide a teaching practise for the children along St. Georges road and the surrounding area. Thus the devised program connects theories of phenomenology and psychology through the initiation in the concept of dialogue, which the user connects with the building through the environment.

The program further addresses the exisiting physical construct of the site. The Site is two streets down from the main motorway of Louis Botha and its peripheral roads are used as main arterials to access the motorway, thus there is a present awareness of the site which lends itself to generating community support, with which the program needs to function. Further, the above mapping (Fig) indicates the pattern of internal living, as discussed in Chapter Two, which is clearly present throughout the area as the pedestrian movement remains secluded to the internal sites of the existing programs.

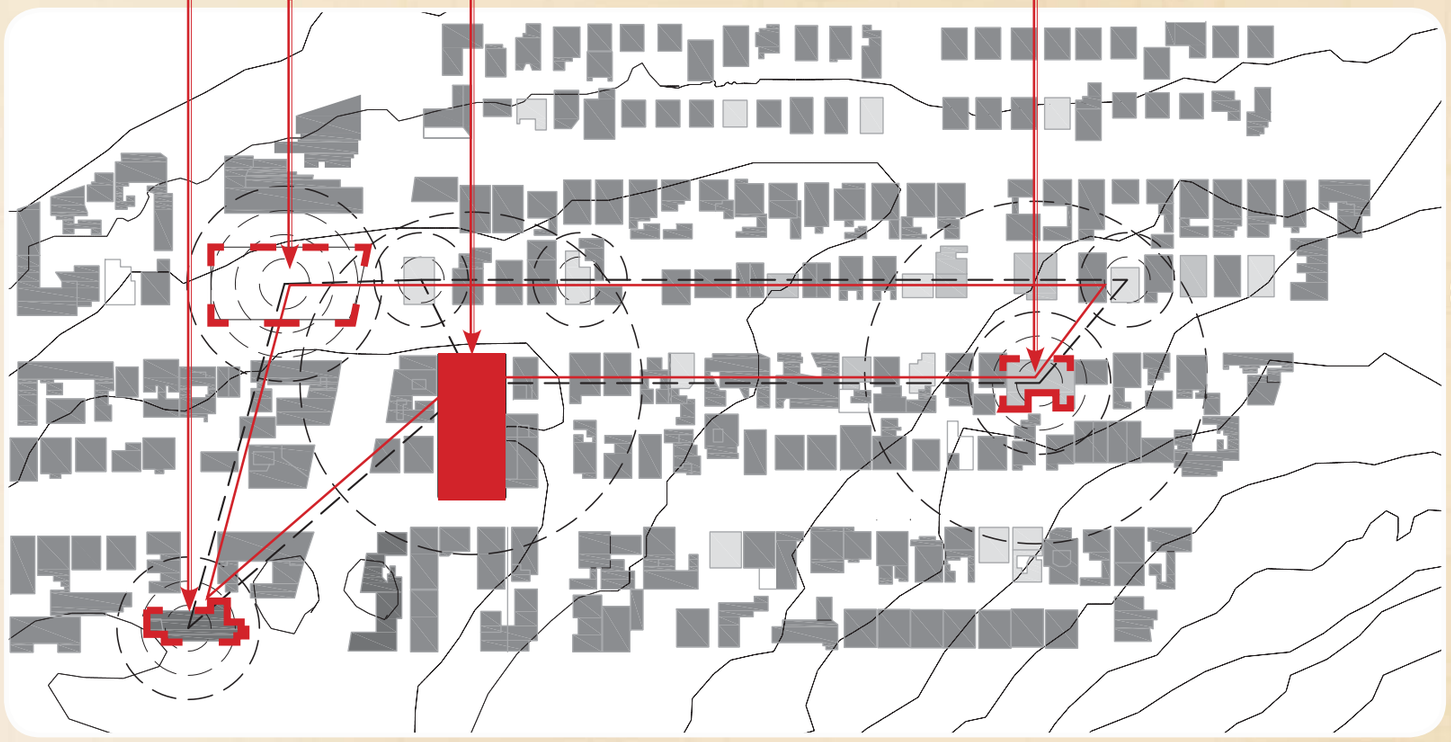


Figure 51:
Proposed Yeoville Site Context: Community
1:2000

Current Communal Node

Potential Communal Network

Proposed Communal Pathway of Integration

Those current communal nodes which have been illustrated in the above diagram present the strongest points of communal connection. The potential Communal Networks illustrate the depths to which the existing program of the spaces have connected with, as previously illustrated through the pedestrian movement patterns. An integrated community network could be formed which faciliates a social connection between the existing programs through the implementation of the proposed Caregiver program. A physical reintegration would begin by encouraging pedestrian activity outside of the site boundary.

It is the aforementioned interdependency that is the ultimate objective of the developmental home. A lattice of networks could further be generated beyond the boundaries of Yeoville. Existing programs, such as Orphanages and Nursery Schools, could use the home's facilities for their current child users on the basis that the owners of the respective programs volunteer their time to become registered caregivers. By combining these two aspects the home will not only become a safe space for abandoned and orphaned children, but will also encourage a further sense of community along St. Georges Road. Furthermore this process provides a resolution to the hypothesis that the orphan's place in history is the child's place in contemporary society, as it concentrates on building a community based structure around the needs of the child. This emphasises the emotive dialogue that has to occur between user, building and environment, the fundamental focus in most contemporary architecture as it becomes over-rationalised. As previously discussed, Pallasmaa (n.d, p.4) identifies that it is a "visual hegemony" which has resulted in this over-rationalisation. Man needs to feel a sense of control which manifests itself through "surveillance" (Pallasmaa, n.d, p.4), because, as Pallasmaa (n.d, p.4) further elaborates, communities have become "objects of visual control and spectators at the same time". This can be identified within the built environment as "a mode of building, which supresses other sensory realms" (Pallasmaa, n.d, p.4). Thus in order to propose a reconnection of all senses, an understanding of the brain through psychology needs to be addressed. This will provide a theoretical underpinning from which to fuel the program and allow it to achieve a greater depth.

Boudrais (2002) discusses the theory of the Psychological Distancing Model, which formulates the "mechanisms of social transmissions or transactions between the child and his or her environment, such as those represented by a family member or other people in the child's environment" (2002, p.1). Boudrais highlights how when children are very young, focus must lie on "direct and local environmental inputs" (2002, p.1). These inputs can be facilitated through "tutoring" (2002,p.1) and nurturing as Boudrais (2002) adds that "[the mother] holds the infant with her eyes, with her voice and smile" (2002, p.1) which, once paired, provide a scaffolding which enables the cognitive development of the child. The program becomes the first layer of scaffolding. It facilitates the "mechanisms" of nurture, by providing a home for the abandoned and orphaned children. The learning environment, which extends to any child, becomes the tutor as it provides a progressive environment in which the children can reach their developmental milestones.

As discussed by Coon and Mitterer (2012), cognitive development addresses the developmental years of a child, from infancy to adolescence. Four stages are assigned to each age band of growth respectively, namely sensorimotor, object permanence, pre-operational, concrete-operational and formal-operational stages. Each stage identifies the developmental milestones that the child should achieve within the appropriate age band. Coon and Mitterer (2012) describe the first stage as the intellectual development of the child where, as previously mentioned, the brain is literally built through sensory inputs and the co-ordination of motor responses is formed. The object permanence stage is associated with the child's ability to learn and co-ordinate information "from senses with motor neuron movements" (Coon & Mitterer, 2012, p.124). The pre-occupational stage follows and is the child's association with identity; an object's name is "as much a part of the object as its size, shape and colour" (Coon & Mitterer, 2012, p.125). The next stage is the concrete-operational stage, which sees the second period of intellectual development, where the child begins to grasp concepts of time, space and matter. The final stage, the formal-operational stage, is the intellectual progression of abstract, theoretical and hypothetical ideas, which become understood. Thus what can be observed is that Schulz (1980) drew upon Piaget's theories of the child, which clearly establishes that a man's perception of space begins at childhood. The proposed program aims at enabling the child to reach the aforementioned milestones through the integration of enriched environments and community.

In being cognoscente of the milestones the child should be reaching, both physically and mentally, the development of the multi-layered program creates the potential for the child to form a series of integrated relationships, which can stimulate the development of each cognitive stage. A series of different worlds (Schulz, 1980) are created for the child, the first of which is the home. As discussed by Schulz (1980) these worlds are constructed by the child through the identification of people and objects and are connected. As the child moves from place to place, the similarities of the past environment are recalled and thus form a greater connection to its first environment, the home. Thus an environment is generated through principles of phenomenology and provides the basis upon which the Psychological Distancing Model can operate. The site and program enable an enriched environment in which the child is able to begin a dialogue through the identification of micro worlds. This stimulates the child's cognitive development and the child becomes empowered.

The next chapter develops the architecture, which is to become the core facilitator of dialogue between the child user and the environment. The subject of inter-subjective design shall be more closely discussed within the fields of phenomenology and psychology, which have developed under the theme of empathic architecture. The design process will illustrate the link between the given theory and the creation of form. The end result is the culmination of the first three Chapters, which manifests physically through the design of the Developmental Orphanage for Children.

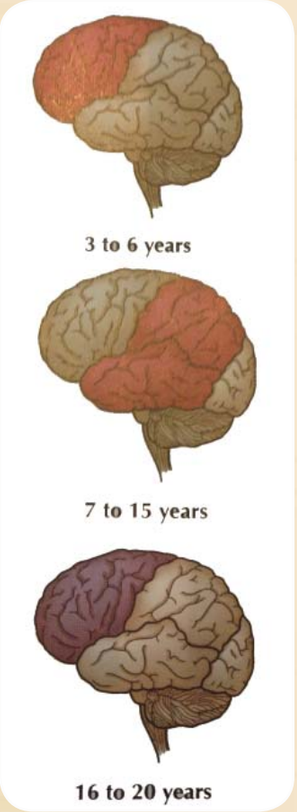


Figure 51: ***The brains Development*,2001**

According to Coon and Mitterer (2012,p.127) The brains development can be simplified into three major stages of growth.

3-6 Frontal lobe develops
Childs ability to think symbolically progresses

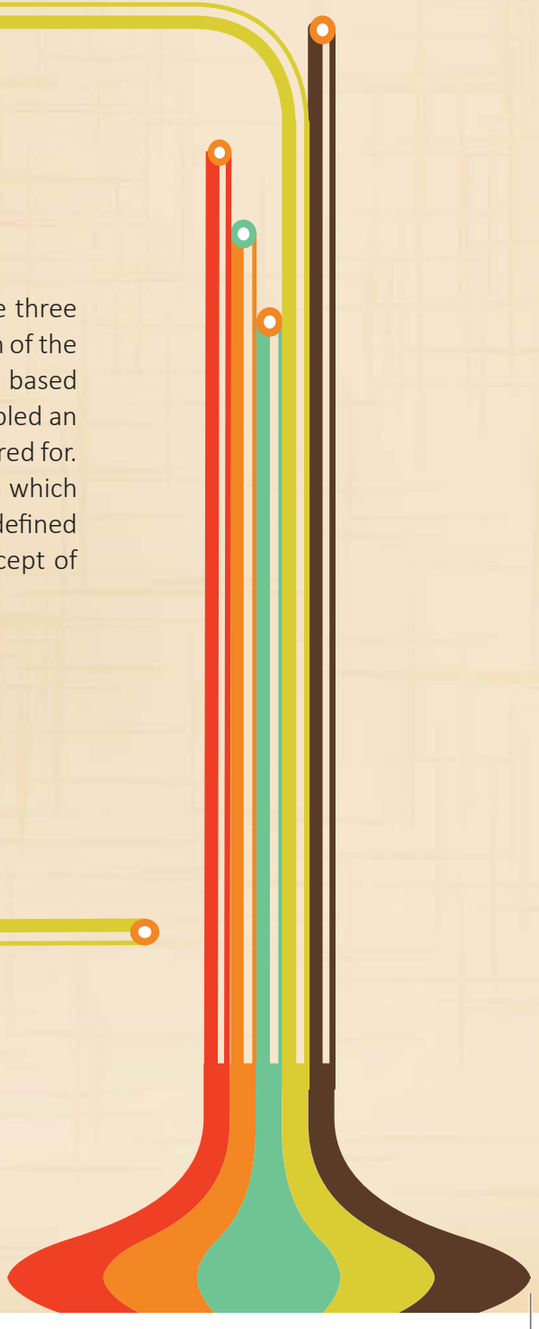
7-15 Temporal Lobe
Language skills

16-20 Pruning of Synapses (nerve connections)
Unneeded connections are destroyed through a process call pruning which in turn enables "the brains capacity for abstract thinking"

CHAPTER FOUR

Design: Conceptualisation to Completion

This chapter marks the process and outcome of the design conceptualisation. It is a culmination of the three previous chapters and the way in which each one became a significant stepping stone in the manifestation of the built form. The design process occurred on three levels through the concept of dialogue. The research based theory and precedents generated a new perspective on the orphan and conventional child user and enabled an understanding of how the child has come to function in contemporary society and how the orphan is catered for. An analysis of the importance of environment, its physical and psychological groundings, and the way in which the site and program can be used as a means to channel this importance was then discovered. This defined the chosen site and formation of the program. These aforementioned processes, anchored in the concept of dialogue shall now be amalgamated and practically applied.



C4

Empathic architecture is the umbrella theme of the thesis, which as the aforementioned has elaborated, has been explored under two of the three components of dialogue, those being, the orphan and conventional child user as well as both the building and site environments. The third component's focus is on the building alone. The aim of this is to physically reinterpret the building itself, within the theory of inter-subjective design, subject to both phenomenological and psychological context.

This chapter will outline the four conceptual processes which facilitated the resultant form, the Developmental Orphanage for Children (D.O.C) and a fifth section which illustrates a culmination of the four preceding processes.

The first process explores the practical application of inter-subjective design, which was applied through the practical experience of having visited three orphanages in Johannesburg. These orphanages were examined in order to highlight how current orphan-care programs in Johannesburg are housed architecturally. Also, the success or failure of the homes was observed, based on the aforementioned precedents which highlighted the way in which spaces need to positively connect the user to both the building and its immediate and extended environments; along with the importance of those environments.

The second process dissected the form of four architectural precedents, two of which had already been directly introduced in previous chapters. The first precedent illustrates two types of Workhouse schemes and an SOS Children's Village, which provide examples of the various forms of institutions and the final precedent examines architect, Aldo Van Eyck, who has been closely referenced throughout the document. This section illustrates how fundamental principles of space and circulation were extracted from the precedents, reinterpreted and used in the conceptualisation of D.O.C's internal and external form.

The third process is the final move towards fully conceptualising D.O.C's form. The applied process of conceptual design takes place and addresses the practical elements of form and space through which the final building has been derived. This process was documented through sketches, which illustrate the movement of design from a culmination of theoretical and material concepts to the realisation of the final building which becomes the Developmental Orphanage for Children.

The fourth section of the chapter is the progression which resulted in the development of the form as a module, in which the basic design principles create a prototype. This scheme is presented in plan and illustrates how the prototype is repeated across the site and begins to construct a communal precinct. The form's repetition elevates the worth of the architecture, as it proposes purposeful spaces which physically integrate the community of Yeoville.

The fifth and final section of the chapter consolidates the final plan of D.O.C and provides a diagram which illustrates how the final form addressed the social issues of community, de-institutionalisation, social inter-dependency and the empowerment of the child user; as well as, the architectural principles which articulated the aforementioned social issues.

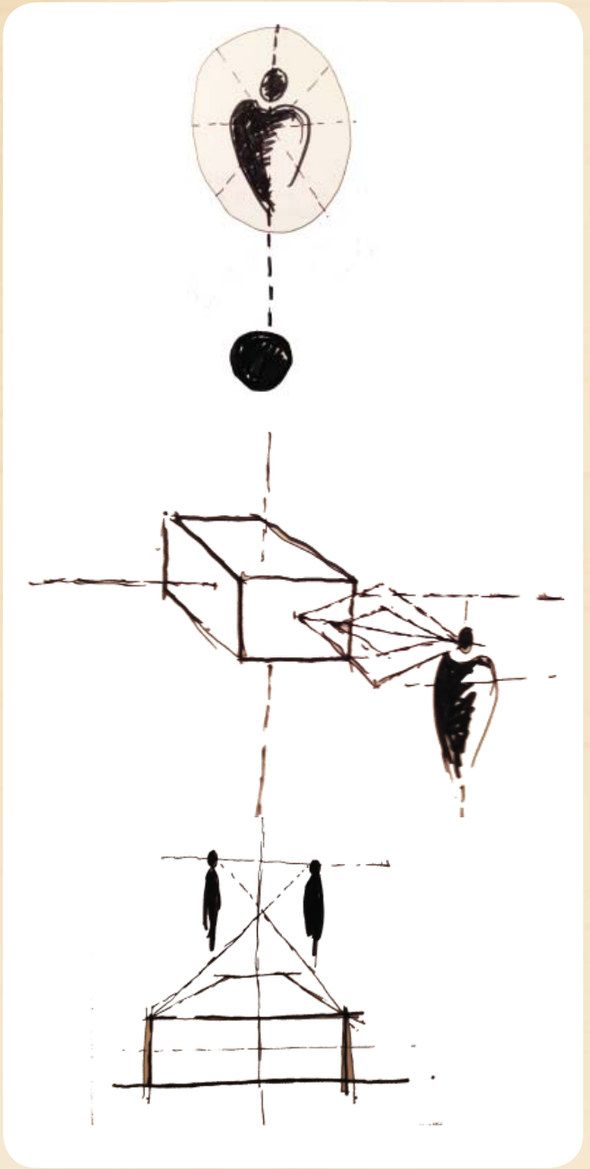


Figure 52: **Sketch illustrating process of inter-subjective design: The dialougue between user, building and environment**

4.1. Process One: A Practical Application of Inter-Subjective Design

In 2011 faculties from the Applied Social Sciences and Schools of Design from Hong Kong Polytechnic University in China and The Helen Hamlyn Centre for Design from the Royal College of Art in the UK conducted an experiment in order to test the process of empathic design. The group consisted of students, creative partners (either elderly or disabled) and a group of volunteers, with either a design or social sciences background, who facilitated the experiment. Kwok-leung Ho, Ma and Lee (2011), who are the corresponding authors of the report, reveal that the aim was to observe and in turn gain an understanding on how to truly create a piece of empathic architecture. What was deduced was that the initial attitude of the designer towards the user was the main element which had much to do with the outcome of the piece of architecture produced. This process is referred to as "positioning oneself" (Kwok-leung Ho, et.al , 2011, p.98) and is the basis in what Finlay (2005, p.27) derived as three "moments of empathy" which are grounded on inter-subjective design.

Thus, the first step in the conception of a form was to position myself in the role of the child user. Kwok-leung Ho, et.al (2011, p.102) state that "empathy grounded on inter-subjectivity helps us to understand user experience. This shared realm of experience can be achieved through reciprocally understanding one's own experience when experiencing others". As previously mentioned in chapter two, the difficult part about this process was the question of how to truly connect with the child user, more specifically, the abandoned or orphaned child. The empathetic process took place on several emotional levels; first it is the obvious connection of a shared experience which, as the designer, is an archived memory as I am no longer a child. The second level is that of empathising with the obvious need the child has to become part of a family, and be removed from the environment of 'orphan-hood' (Abebe, 2009). This required having to channel a maternal compassion without the experience of being a mother. The third level is the fundamental understanding of how my childhood experience, in some regard, may be similar but ultimately does not completely mimic the experience of the orphaned or abandoned child user and how that would affect the materialised form. The type of form being produced should host sensitivity and become the material guardian; a substitute which accompanies the adult caregiver in developing an environment which compensates for the lack of conventional parenting the child would experience.

Kwok-leung Ho, et.al (2011, p.102) state that the notion of "empathy is grounded on inter-subjectivity" and needs to be "embodied" in order to understand the user experience. According to Finlay (2005, p.289), there are three steps which take place, the "connecting-of, acting-to and merging-with". The connecting–of refers to the designer's critical interaction with the user in gathering details about the user's life experience and observing the space in which the user lived, which enables the form to fully encompass the user's needs. The process of acting–to "merges oneself with the experience of the user" (Kwok-Leung Ho, et.al, 2011, p.102) and the final step, merging-with, is the combined outcome of the former progressions.

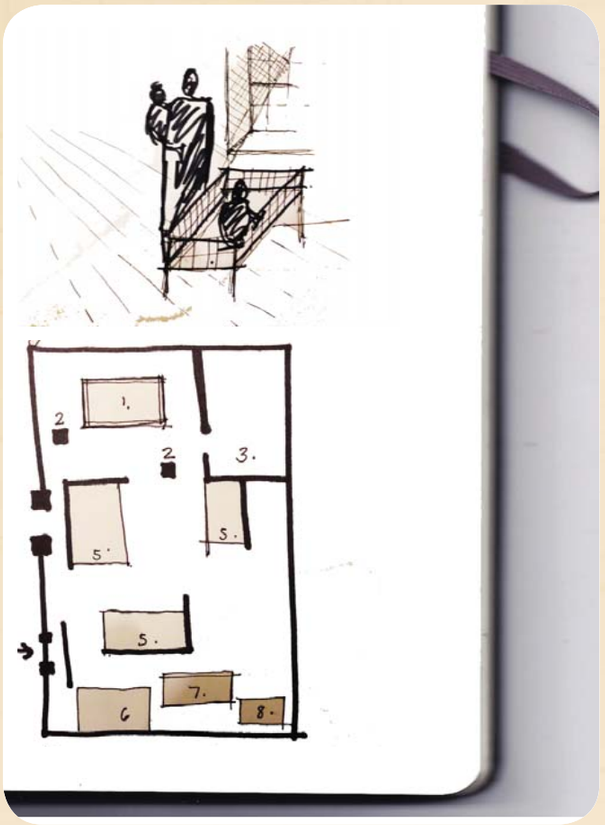


Figure 53 **Experience captured through sketching process**

The three layer process of inter-subjectivity was gained through an inter-connection between the adult guardian and child user. These are partnered in order to fully capture a thorough balance between the child's wants and needs as the following three orphanage types were experienced.

The first orphanage to be observed has been functioning as a sanctuary for abandoned, abused and orphaned children for 77 years. However, the AIDS pandemic resulted in an influx of abandoned and orphaned babies and an HIV-AIDS Hospice was formed. Currently the majority of the children who live in the home have HIV- AIDS, however the status of the children is not revealed to the volunteers, in order to avoid sub-conscious prejudice. The orphanage's overall program believes in the thorough development of the child through sensory stimulation, fine motor skill development and artistic freedom. This is facilitated through a number of different rooms which run along a corridor and are programmed accordingly.

Each room aims at developing the child cognitively and the children with disabilities or special learning needs are tended to by therapists who visit the home during the week. The most interesting and final program which is run, is that of Moral Teachings, a program which does not manifest itself architecturally but psychologically. The program aims to instil the correct moral standings one should uptake in order to function as a positive individual, contributing to society productively. This was the first sign of empathic practice. The home's facilitators have identified that as a result of having no guardian to create a set of practical, social and moral boundaries, orphaned and abandoned children are left to raise themselves. This creates an environment which promotes survival above all. The result is a greater probability of an orphaned or abandoned child becoming a criminal, entering prostitution or becoming an addict. Thus, where a conventional child would receive day to day guidance, this program acts as a concentrated dose of parenting as the volunteers are not 24-hour caregivers (Fig.54).

This experience further highlights the ability space has to evoke a positive or negative reaction from the user and reinstates the notion alluded to in Chapter Two, where an environment can create a "sense of emotional security" (Lynch, 1960, p.150) through the program it hosts. The building could not only act as a material guardian but create a positive emotional association with the building for the user, as well as anchor the basic principles of dialogue - the user's positive connection to the building through environment.

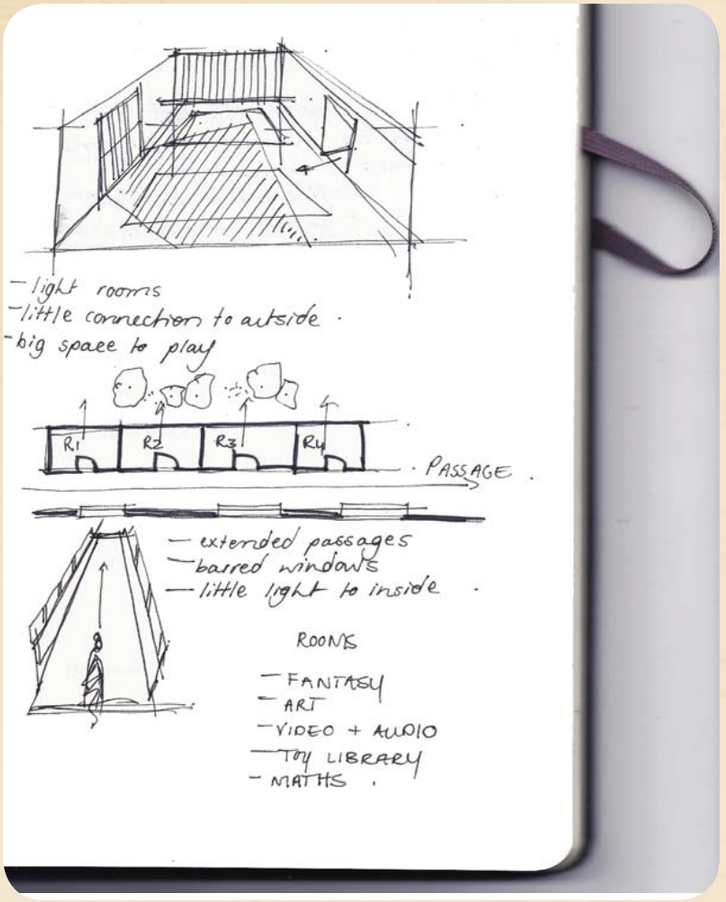


Figure 54: **Experience captured through sketching process**

The next orphanage experience related to Finlay's (2005) initial step of inter-subjectivity, the process of "the connecting-of" (Finlay, 2005, p.277). As the home only cares for children up until the age of two, interacting with the children was the only way to understand the way they functioned in everyday life. The majority of the children at the home have been forcibly removed from abusive homes by social workers of the Johannesburg Child Welfare (JCW). The home provides a place where the children are cared for in the process of finding them a forever-home and being adopted. Once they reach the age of two, the JCW places the children into suitable orphanages in and around Johannesburg. The children are looked after by care givers during the day and are left to self sooth at night, as there are not enough members of staff to cater for every child's night time needs. This further influenced the way in which my form would develop and function, in order to provide a solution for obvious issues current orphanages are faced with regarding the running of their programs. The child is considered as much as possible, but still within the stereo-type of the orphan, through an institutionalised method of care.

Figure. 55 **Process of inter-subjective design: How Children respond to the positive environment**

The final home is far removed from the negative image of the generic institution; however, it draws parallels to the Victorian Workhouse scheme, as it provides work and shelter for those destitute, ill, abused and abandoned children and adults. This experience combined Finlay's (2005) principles of connecting-of and acting-to as I was able to connect with the children and closely observe them in their environment, instead of conducting the adult interviews as before.

From my experience, the children are ecstatic at the prospect of visitors, as infants, young babies and children yearn for human touch and comfort (Fig.55). They make the most of their environment, which consists of two textures, concrete and vinyl tiles. The home itself is a sensory overload. Transitions between sights, smells and sounds bombard you from threshold to threshold. The children live a small staircase away from the rest of the home and are schooled off the premises. It is clear that the caregivers require more volunteers to assist with the children and the daily chores within the home. This experience highlighted the importance of a productive environment and its ability to stimulate a child free of structured parameters. It also emphasised the power given to the user when presented with safety and a freedom of space.

An experience of the three orphanages enabled a thorough exploration of inter-subjectivity which facilitates an "[understanding] of user experience" (Kwok-leung Ho, et.al, 2011, p.102). These experiences further highlighted the needs to be addressed in conceptualising the form that needed to be addressed upon the conceptualisation of form. As progressive as their programs had become, the homes are left to function on the basic principles of institutionalisation, due to insufficient communal support. Thus the next step in addressing the final inter-subjective process of merging-with (Finlay, 2005) was identifying the physical ways in which the form could represent de-institutionalisation. This is illustrated in the third section when the applied process of conceptual design takes place.

4.2 Process Two: A Visual Analysis of two Precedential Typologies

As discussed in Chapter One, the institution was created as a way to control the orphaned children from potentially shifting societal norms by threatening the need for family. Thus, the institutional method of care had been recognised by general society as a way of tradition, a common practise. This visual analysis serves to juxtapose two structural conventions of the orphanage: the traditional Workhouse and the contemporary village typography.

Chapter One and Two, examine how the Workhouse became the first institutional prototype to develop from the Victorian age, where adults and children occupied one building and were kept in complete isolation from each other. Men, woman, boys and girls were housed in separate wings and only interacted by means of circulation which cut through the centre of the form. Three institutions have been analysed (Fig.56): two representing the institution of the Victorian age and a third which illustrates a modern approach to the orphan institution, which has been addressed in previous chapters, and illustrates a potential form of contrast with the historic structural conventions.

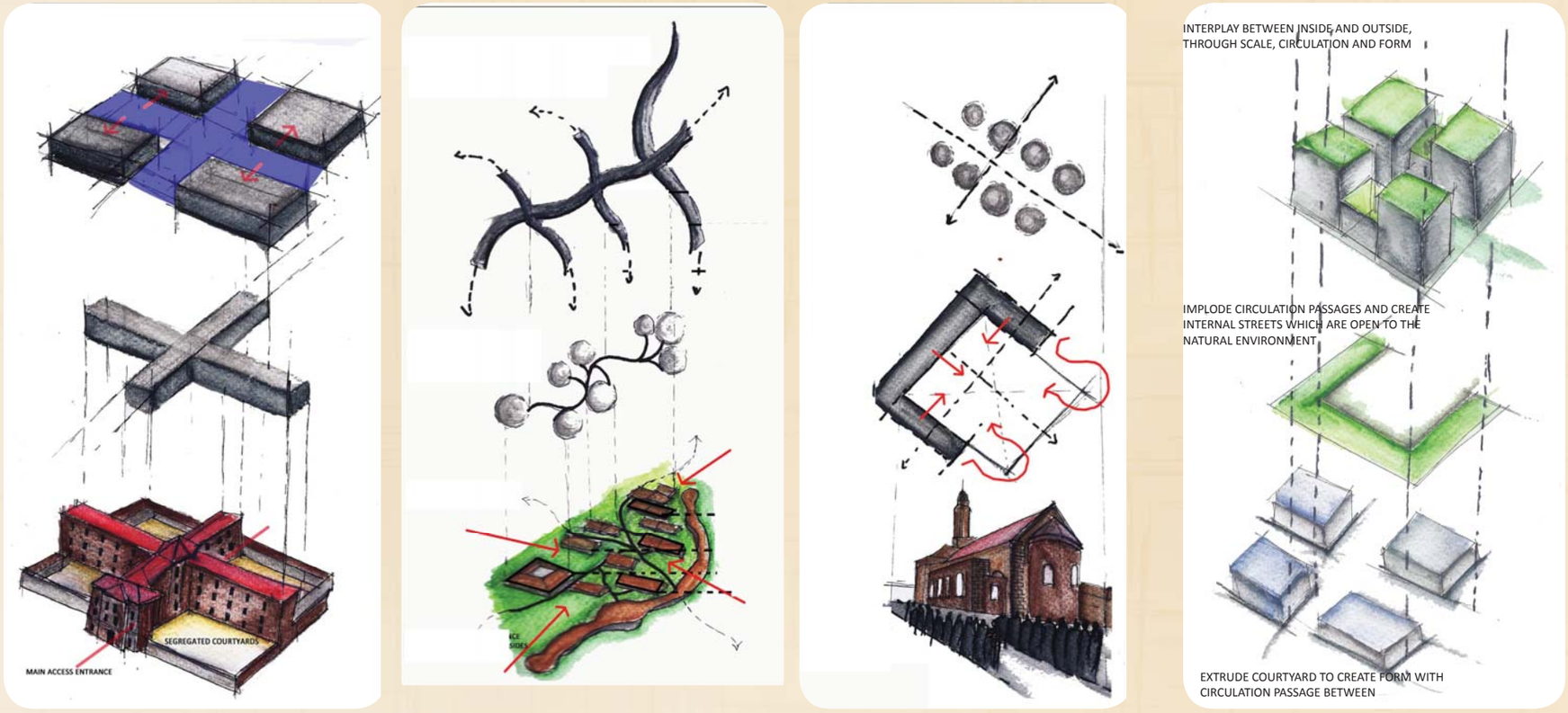


Figure 56: **A Visual Analysis of the positive elements of institutional forms :**
a) Victorian Workhouse b) SOS Childrens Village c) Victorian Workhouse 2 d) Combined implementation of principles

The Workhouse made use of external courtyards which were divided by a dominant centrally built form. The village typography houses separate structures for specific programs and connects them through pathways and in-between structures which encourage a sense of community. These principles can be applied to the proposed extended site of Yeoville in the thesis design and connections can be made which create interfaces between the immediate site of the building and the existing programs along St. Georges Road. This develops the process of intervention on a third dimension, by allowing the integration of the Yeoville community outside of the site boundary in establishing a relationship with St. Georges Road. These precedents serve as the first examples which fully exemplify two layers in the concept of dialogue: the connection between the building, and its immediate and extended environments.

C4

The fourth and final precedent is that of Aldo Van Eyck's series of Amsterdam playgrounds. Van Eyck was examined in Chapter Two, as he became a part of the architects who were inspired to produce an innovative kind of humanist architecture as a result of the First World War. Van Eyck became interested in the forgotten spaces of Amsterdam and transformed them into playgrounds. This intervention evolved to accommodate children but also acted as a metaphor for the empowerment of the child and her societal image within the city. Van Eyck's Municipal Orphanage was the precedent appraised in Chapter Two. In this section it is his playgrounds which inspired a means to further connect the child with the proposed form, as well as reintegrate him as a recognised part of the community along St. Georges Road and the greater community of Yeoville.

Van Eyck pioneered the reconnection of the child within the city of Amsterdam and made a constant reference to child psychologists like Jean Piaget, a revolutionary in the field of a child's cognitive development, as they "recognised the integrity of the child's view of the world" (Lefaivre & Tzonis,1999,p.58). What resulted was the creation of "playscapes" (Lefaivre & Tzonis, 1999, p.58). These are playgrounds which identified the everyday lives of children and became "woven into the neglected holes of urban fabric… out of unconventional unsophisticated materials found close to the site" (Lefaivre & Tzonis, 1999, p.17). These playgrounds (playscapes) enabled the natural movement of the child and thus activated his imagination through different "cognitive structures" (Lefaivre & Tzonis, 1999, p.70). The result was so successful that citizens began to file requests through the Public Works Department of Amsterdam (Fig.57 & Fig.58)

Van Eyck's precedent is grounded on the basis of inter-subjectivity and thus inspired the concept of form as a means of child's play. The form would aim to create visible playscapes, which too responded to the child's natural inclinations and movements on site , and reintegrate the holistic image of the child (both non-orphan and orphan) within the context of Yeoville, more specifically, St. Georges Road. Van Eyck was able to create natural environments which activated the child's imagination. The Municipal Orphanage in Amsterdam was understood as something powerful and able to illustrate an architecture which was sensitive to the needs of an orphaned child. The program of the form, combined with the architectural language, illustrated how to create a space to facilitate interaction.

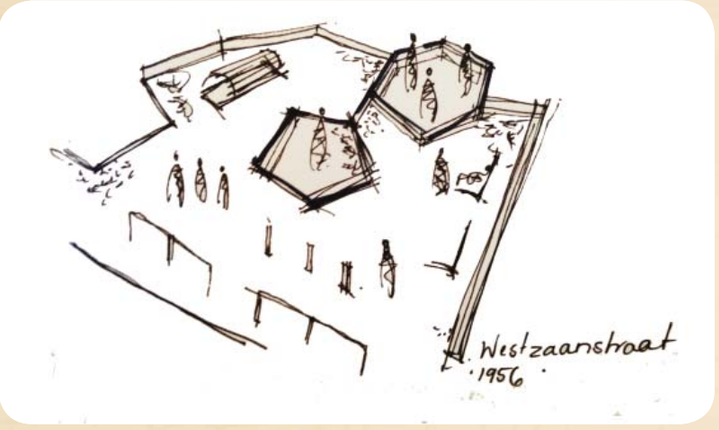


Figure 57: **Westzaanstraat Playground, Amsterdam, Aldo Van Eyck**

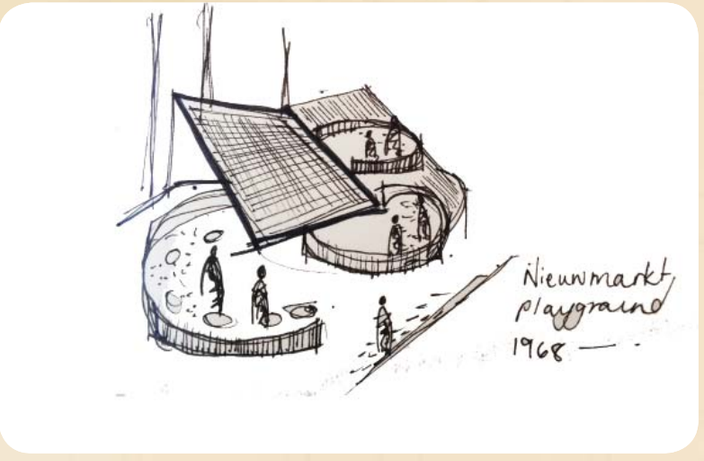


Figure 58: **Nieuwmarkt Playground, Amsterdam, Aldo Van Eyck**

Lefaivre and Tzonis (1999,p.89) discuss how "he playgrounds are made up [of] clear geometrical shapes", which draw parrallels to the Western tradition of civic squares which have served as public quads where "human exchange is acted out" (Lefaivre and Tzonis, 1999, p.89)

This section can be understood inter-subjectively, a drawn manifestation of Finlay's (2005) process of merging-with. A simultaneous process occurred, between my subjectivity, a manifestation of my experiences of the aforementioned orphanages and the application of my analysis to orphan typologies. This process would develop a further understanding of the way a built form has the potential to evoke both a positive or negative response from the user, more specifically the orphan child. Thereafter, the principles which were gained from the above precedents are more thoroughly developed in connecting the users (adult, child and orphan child) to the building and both its immediate and extended environment. This shall be illustrated in the upcoming sections of the conceptual design process, resultant form and prototypical progression.

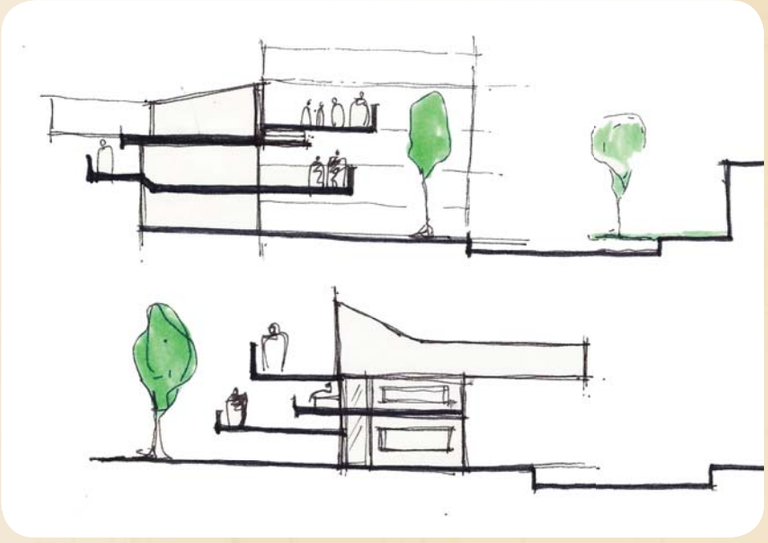


Figure 59 :Early Concept Sketches exploring the notion of PlayScapes as potential forms

Figure 59 :
Relationships explored between; inside and outside, interplay of community, form and street threshold and how semi-private spaces could develop along playscapes

Figure 60:

Pocketed Areas of space where explored through differentiation in scales. A series of surveillance systems follow through a natural reveal of hierarchal spaces.

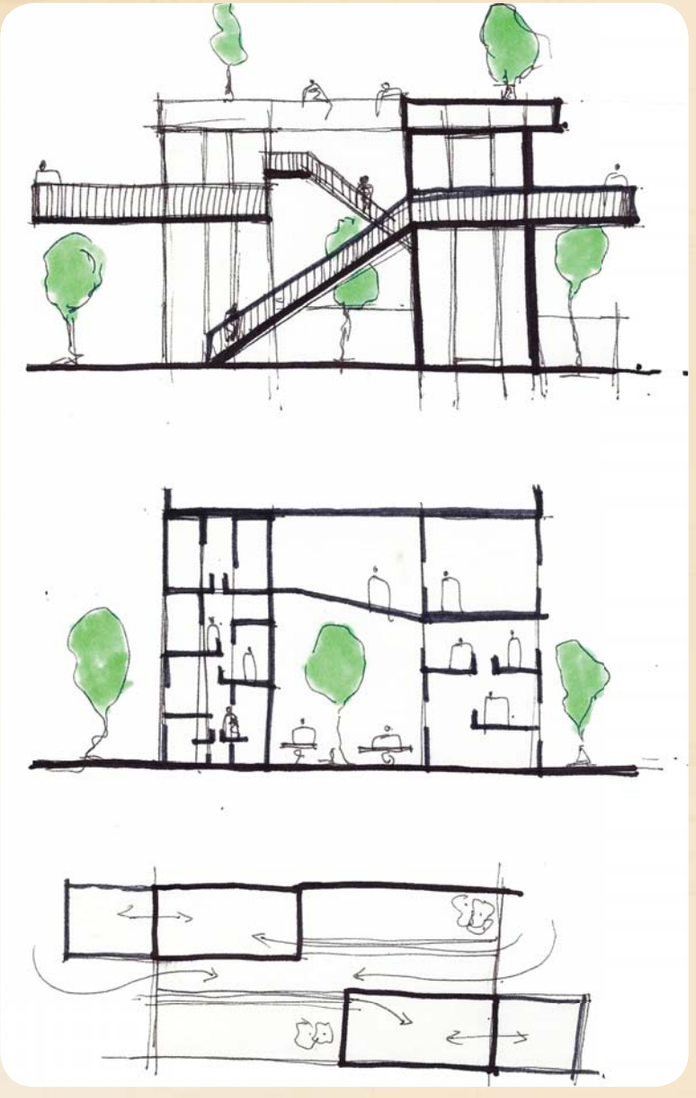


Figure 60: **Exploring the notion of Playscapes as Potential Form**

C4

The post examination of the aforementioned precedents revealed that there are a number of potential devices that can take place in order to better articulate the child within specific spaces . Piaget (n.d, as cited in Schulz, 1980, p.18) states how the “world of the child is subjectively centred and consists of a few stable elements”. Thus, a restructure of the anatomy of the extended physical environment of Yeoville becomes a potential element with which the child identifies enabling a communal connection to be established as “he connects things recognised with particular places” (Lynch, 1960, p.18). This connection simultaneously facilitates the reintegration of community, not only along St. Georges Road but within the area’s greater surroundings, which begins to outline a basic “totality of space” (Lynch, 1960, p.15) and slowly empathic architecture, which evokes emotion in the user, begins to be brought about. The design, therefore, began to conceptualise the way a space could facilitate a child’s need to experience a sense of spatial freedom within his environment. While accommodating that, the adult needs the reassurance of the child’s safety which can be created through visual control around the area. The very visual control which is negatively associated with in Chapter Two has now been manipulated. Instead of a rigid, institutional architecture which suppresses the user, a freedom of form is examined and derives a fluidity of human interaction.

A series of diagrams were drawn, which highlighted the areas of the street which the children frequented and the potential forms that could take place within the site in order to further facilitate the child’s natural progression of space, while simultaneously enabling a system of communal connection through visibility. It also lends itself as a method of supervision (Figure 64, Figure 65, Figure 66), enabling the safety of the child within the space.

However, before this process could take place the site was broken down into its main components which would act as the social anchors needed to develop the aforementioned principles of progression of space, communal connections and their respective manifestation through form (Fig.61)

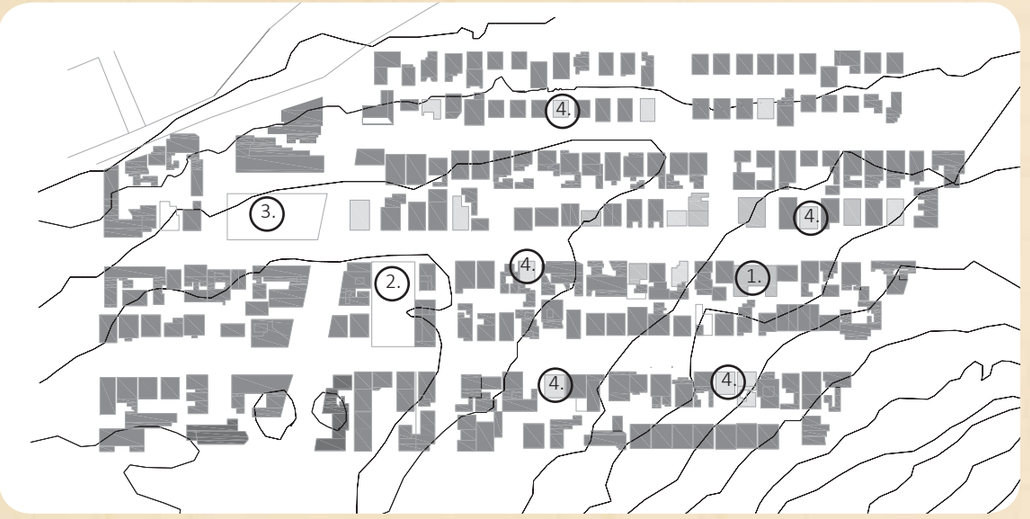


Figure 61.

1.The Orphanage was the first anchor to the new site.

2.An existing crèche would provide the first step in initiating the Caregiver Program, as current guardians could act as potential trainees.

3.The park fits snugly between the surrounding flats and acts as the garden for the children who live in the area and use the area as a central point of play.

4.The residential houses, some of which function as both café’s and private homes, further encourage a communal awareness of the site and strengthen the potential for the program to succeed.

C4

The following text outlines the theory which arose in order to enable a more thorough understanding of the outcome the possible types of communal connections could achieve, which further contributed to the upcoming diagrams, the potential articulation of the child's natural movements in space.

As revealed in Chapter Two through the observation of precedents underpinned by phenomenological and psychological theories, the social issues of internal living is highlighted as one of the fundamental problems fuelling communal isolation, as the user moves from one alienated environment to the other. The result is that the general child simply moves as an object within the space, as he is forced to perceive it as an adult would. Herzberger (1991) contextualises this issue further, by observing the residential pattern of living that has emerged as a result of the "age of communication" (Pallasmaa, n.d, p.4). "Beyond our front door or garden gate begins a world we have little to do with, a world upon which we can hardly exert any influence. There is a growing feeling that the world beyond the front door is a hostile world of vandalism and aggression, where we feel threatened rather than at home" (Herzberger, 1991, p.48).

Herzberger (1991) further suggests that in order to remedy this pattern, users and architects alike, need to return to the "optimistic and utopian concept of the reconquered street" (p.48). A street which promotes unity and creates an awareness of the wants and needs of surrounding neighbours through basic human interaction (Fig. 62(a))& Fig. 62(b)) . In so doing, the street itself acts as a symbol of empowerment as it becomes a "living street" (Herzberger, 1991, p.54). Thus, in response to these notions, an integration not of the child (non-orphan and orphan) needs to occur within the city, but the general community needs to re-emerge as an active city-user. A second hypothesis arose subsequent to this exploration: the orphaned child in history is mirrored in contemporary city society.

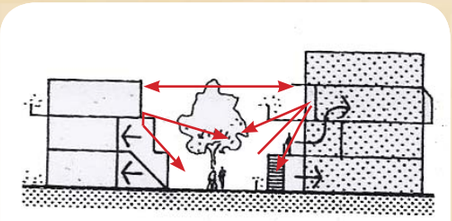


Figure 62 (a)
Herzberger's Haarlemmer Houttuinen Housing

A section illustrating the building potentials an internal street can generate; a series of visual and physical elements attract the user outside the building boundary.

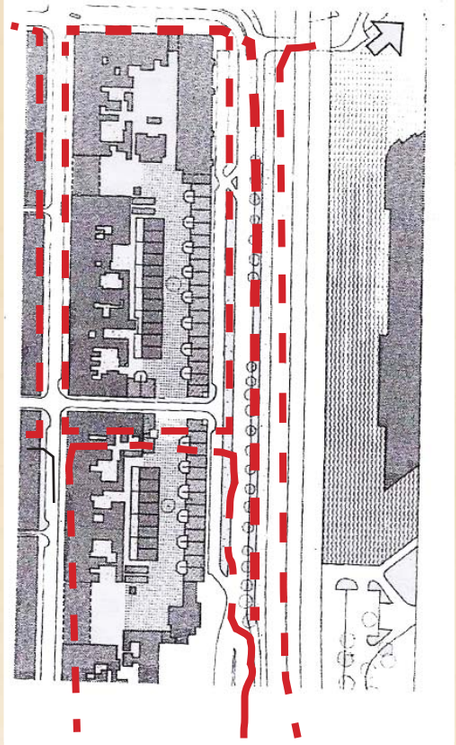


Figure 62 (b)
Herzberger's Haarlemmer Houttuinen Housing, 1983,p.50

The housing scheme created a street which could be accessed by motorcars only by those residents living on it, maintaining as a pedestrian street), where the pedestrian is a "priority at all times" (p.50). This provides an example of the street as a "living space" (Herzberger, 1991, p.50)

C4

The practical experience of the three local orphanages is one example of this second hypothesis. Their programs thrive on community support, and interaction, yet their built and external environments isolate them from the community upon who they depend. Thus as progressive as the orphanage programs had become, due to insufficient community support the homes remained left to function on the basic principles of institutionalisation. Thus the first step in the final inter-subjective process of merging-with (Finlay, 2005) was identifying the physical ways in which the form could represent de-institutionalisation. One of the greatest misconceptions of de-institutionalising is the assumption that the wall, gate and secured thresholds are the objects which define it. It is not these elements that create an institution but rather aid in the control of space, removing the user's ability to choose how to articulate the form (Fig.63). The proceeding diagrams illustrate the possible physical connections that could occur in order to begin structurally arranging the layout of the site and its connection to the street. The aim is reconnecting both the child and adult user of the thesis building while concurrently providing a platform on which to re-integrate the Yeoville community.

The playground became an important connection which needed to be maintained. The potential form sought to mimic the same freedom of open spaces, previously noted in Van Eyck's playgrounds, which the children clearly thrive on. This freedom of space resulted in individual pieces of form occupying the site connected through green space and potential pathways to the surrounding area, in an attempt to physically connect the community. (Fig.64)

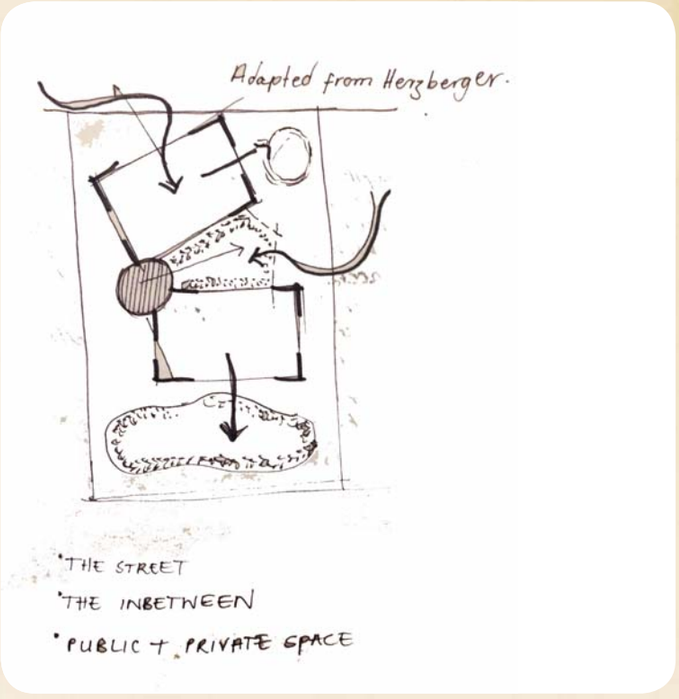


Figure 63: Conceptual Sketch adapted from Herzberger scheme
Begins to illustrate the concept of the internal street and the inbetween which can be facilitated through public and private spaces and thus create a method of deinstitutionalisation.

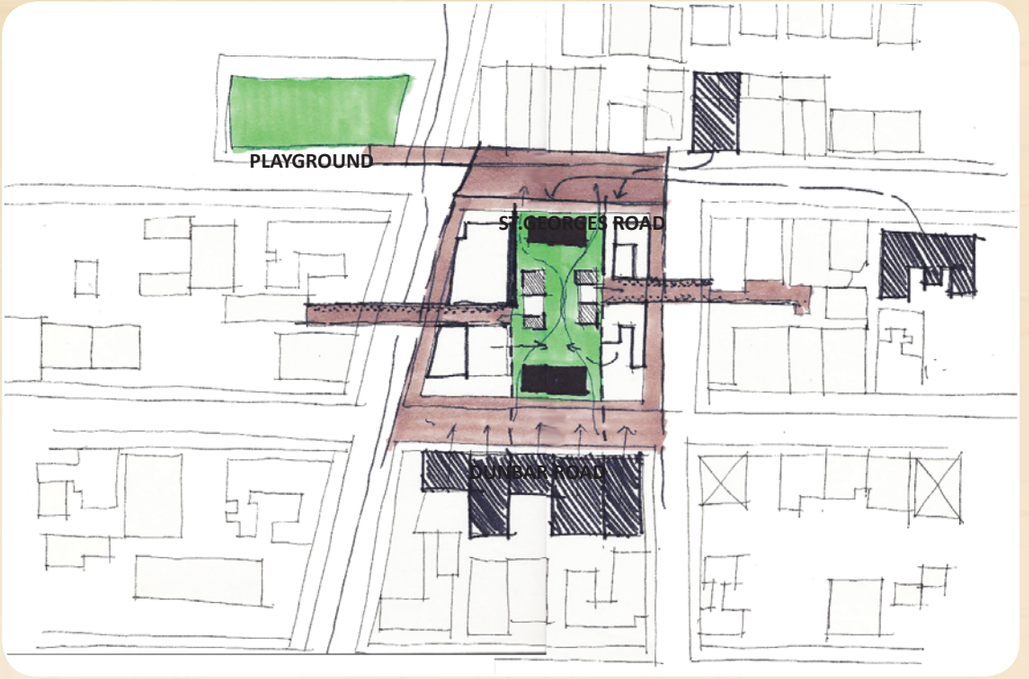


Figure 64 **:Conceptual Sketch illustrating Potential Connection Devices**

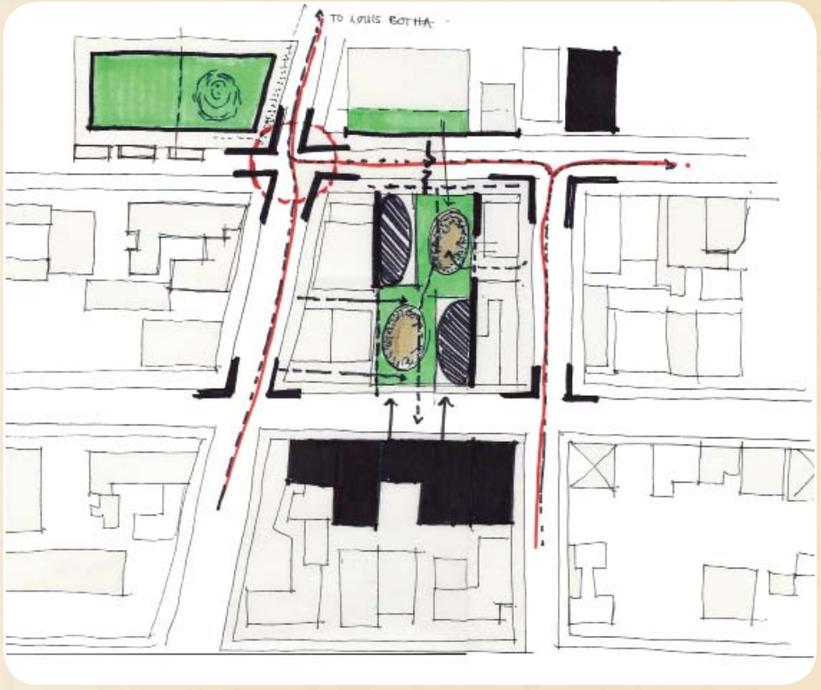


Figure 65 **: Conceptual Sketch illustrating Potential Connection Devices**

A consideration of the tectonic development of these edges could thus provide a means of encouraging the pedestrian to take a specific route and connect with a specific building, another mechanism to possibly reintegrate a sense of community in the area (Fig.65 & Fig. 66).

A subsequent analysis of Lynch's work highlighted the potential of the street edge and how it could act as an indicator of the type of program the buildings hosted along each pavement. As Lynch (1960) states"edges… have directional qualities… side from side differentiation and… edge from edge distinction" (p.66).

Figure 66**: Conceptual Sketch illustrating Potential Connection Devices**

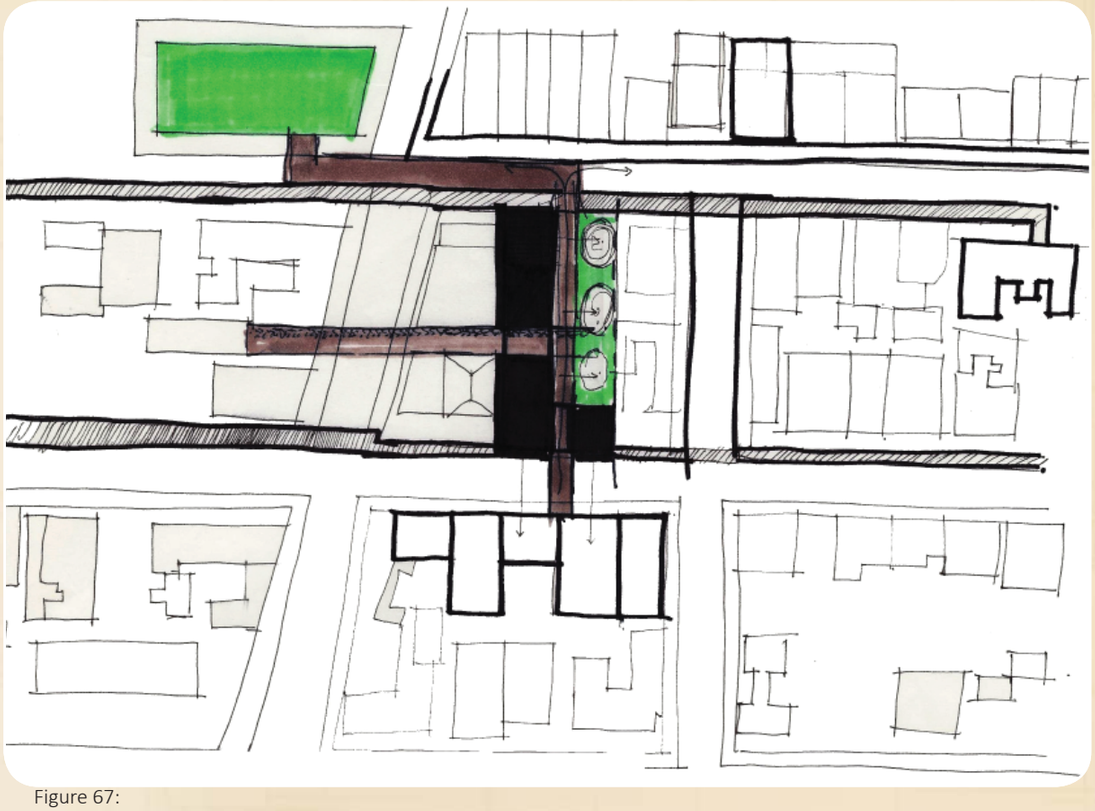


Figure 67:

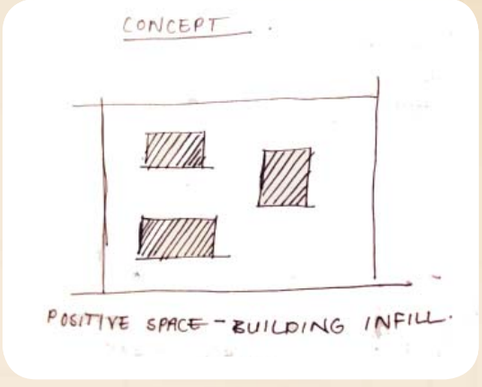


Figure 68: **Concept One: 'Carving-into'**

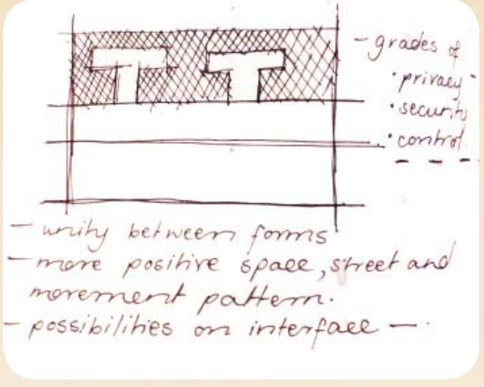


Figure 69: **Concept Two: 'Carving-out-of'**

Finally, it was realised, through Herzberger's (1991) notions on the potential of the street, that the communal connection need not be as large as the previous diagrams suggested but rather, could be achieved through the subtle placement of an internal street, which centrally split the site into two.

The internal street thus began to structure the site as it was divided into two potential forms on either side. The next step was to begin configuring the internal form of the site, so it would reflect a sense of scale, space and function as to propose a realistic connection between the area, its occupants and users and propose a de-institutionalised form. One process of deinstitutionalising is enabling the freedom the user has to pass through, occupy or inhabit the space. This notion created the proposal of two spatial concepts, the 'carving-into' and the 'carving-out –of' the site (Fig.67)

Concept One: 'Carving-into'

The first notion emphasised the form as a positive element in space where the remaining space became the negative element. The negative space could be defined as internal or external, having no program, while the positive building space became the built form. (Fig.68)

Concept Two: 'Carving-out-of'

The second concept was the 'carving-out-of' to allow the in-between space to take on the role of the positive element. This appeared to provide a greater unity between forms and generated a greater foundation for communal opportunities, which could be created through interfaces, accentuated by the street and potential movement patterns. (Fig.69)

C4

Thus the second concept of 'carving-out-of' was carried through and the process which would reflect the form as the negative space of the building site was explored. What was slowly revealed was the forms ability to become a series of integrated pieces, which where plugged together in a puzzle like fashion. A variety of diagrams illustrate the types of external spaces the form would create and their relationship to the internal and external street edges (Fig.70, Fig.71, Fig.72)

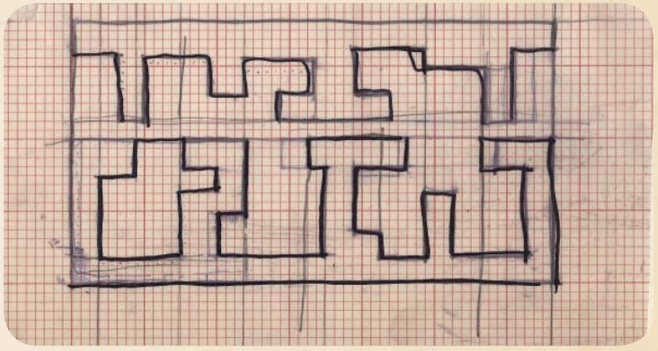


Figure 70: Intial outline of proposed Plan

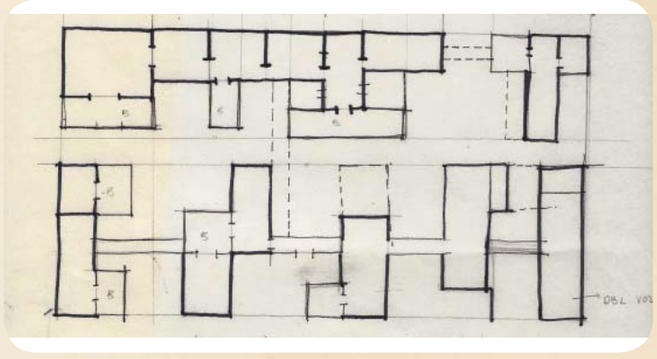


Figure 71: Further articulation of spaces

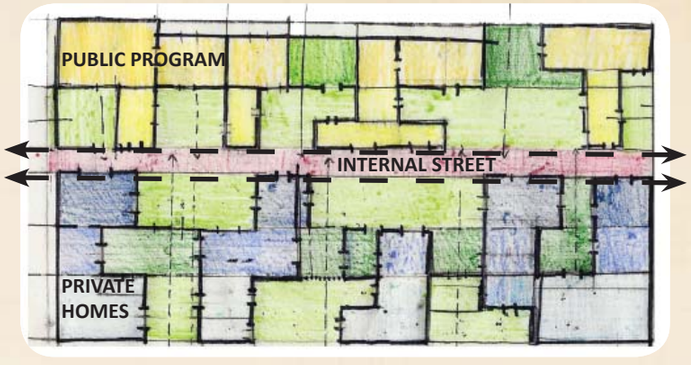


Figure 72: Detailing the type of space: Internal and External, Scale, and Program

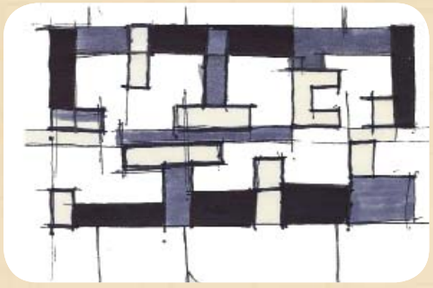


Figure 73

Proposal One

Public and private spaces intertwined throughout the space. Articulated with Transparent and Solid materials

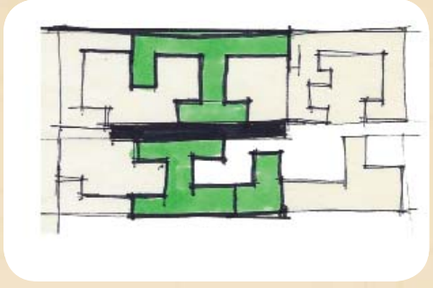
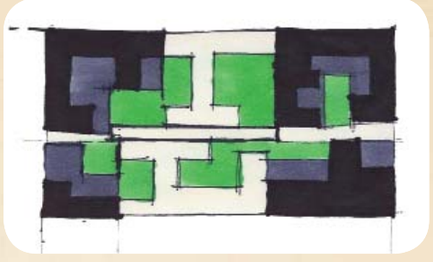


Figure 74

Proposal Two

Central Space becomes public (Park like element) and street bound forms become private spaces as to contrast with conventional methods of public space occupying the first thresholds.



Proposal Three

External Spaces become public and internal space is programmed as private. The form contrasts the conventional through the opposite use of materials, heavier materials articulate public space where private space is transparent.

Figure 75:

A gradation of outside space was applied, which articulated grades of privacy, entry, security and control. This enabled a firm sense of the functional use of the space and began to develop a sense of place which addressed the internal street, where spaces were made available through a series of thresholds, thus creating a sense of order and purpose about the space. Once these principles where applied, the form began to reflect a more channelled movement about the space, which tightened the internal street defining it purposeful and ordered, which could encourage a sense of community as it became an active part of the site. (Fig.74,Fig.75, Fig.76)

The form was then extruded and explored as a three-dimensional plane and this began to further define the possible grades of privacy, entry, security and control. The original notion of child's-play and visual guardianship could also be enabled through variations in heights and scale of spatial planes, accommodating both the needs of the child and the adult users. Draft sections where explored which began to conceptualise the proposed type of form: a socially organised structure defining each part with its own address and utilising the internal street as a passage for purposeful spaces. (Fig.76,Fig.77 & Fig.78)

One conceptual section would symbolise the desired final product (Fig.79 & Fig.80). The section provides the basis with which to reflect an empathic design.

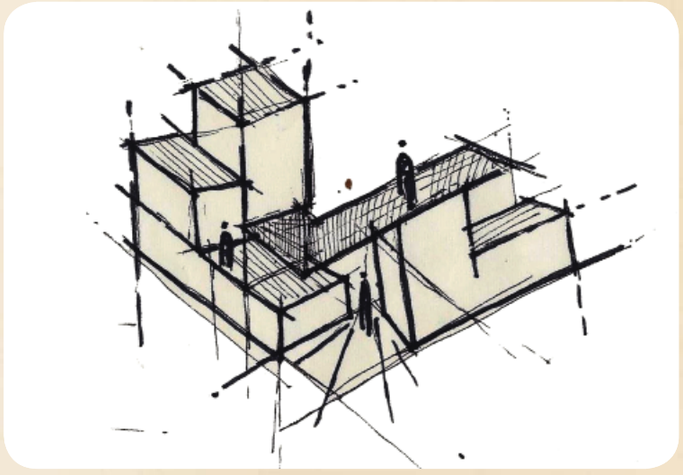


Figure 76: **Concept Two: 'Carving-out-of'**

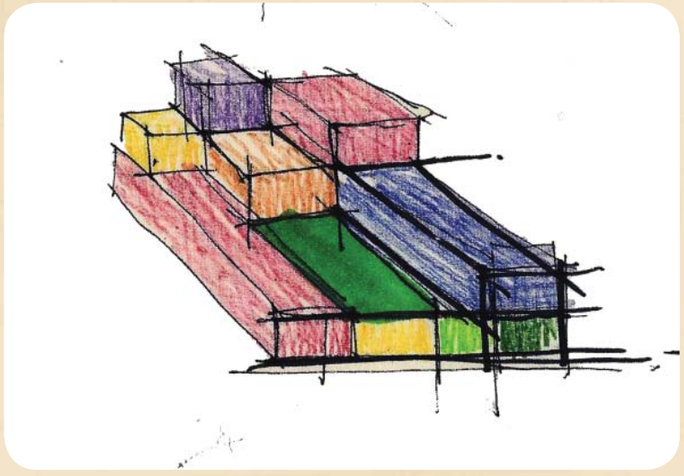


Figure 77: **Concept Two: 'Carving-out-of'**

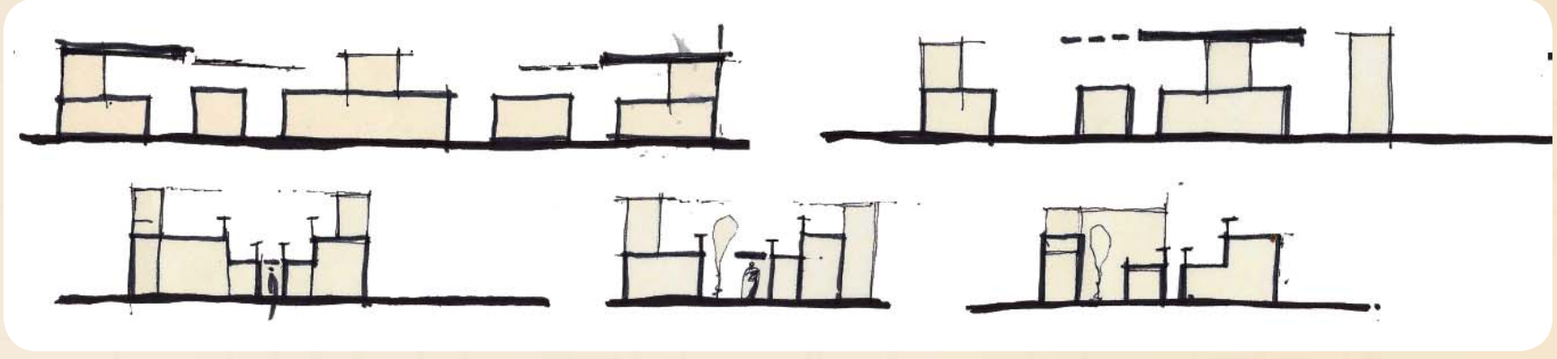


Figure 78: **Concept Two: 'Carving-out-of'**

1.The roof overhangs act as an element to solidify the internal form of the site and unify the external planes which are present from ground to fourth floor.

2.Internal courtyards formulate external planes and are revealed at ground level through a stepped formation, which enables the creation of safe, supervised spaces for children and are placed off the internal street.

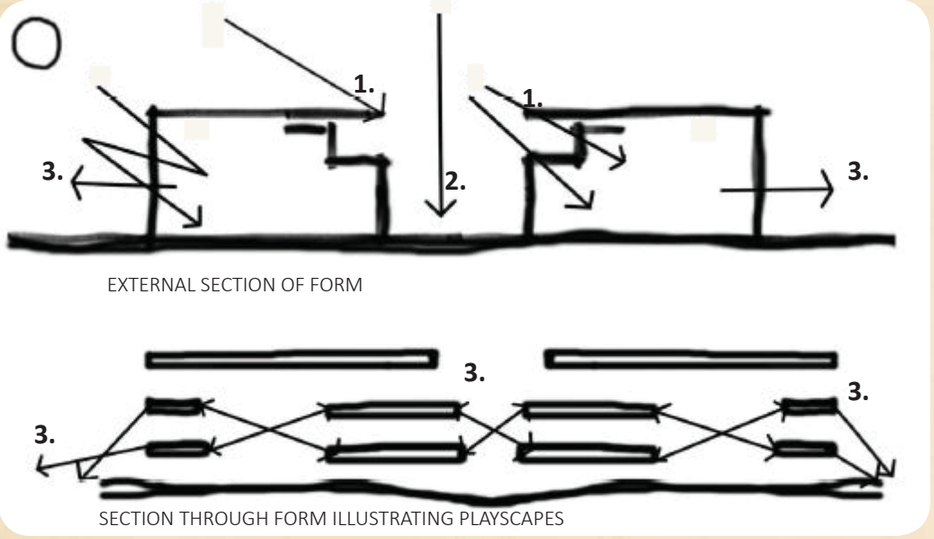
3.Playscapes (balconies) were placed on the periphery of the main street and establish a lattice of visual connections. This begins to connect the child with its surroundings and slowly the visibility of the child, although through an indirect presence on the street, is reintegrated as part of the greater Yeoville area.

The following diagram represents the culmination of the aforementioned ideas and was used as the template from which the floors were designed, which was manipulated as to correspond with the original concept section, thus fully solidifying an outline of the built form.

1.The internal street was considered past the ground floor level with the built forms above. A visual connection was kept in order to consistently create interfaces between program, people and place.

2.The form, having developed as negative space, lead to the internal courtyards being defined throughout the building, which enabled the user to maintain a constant connection with the ground level and external environment.

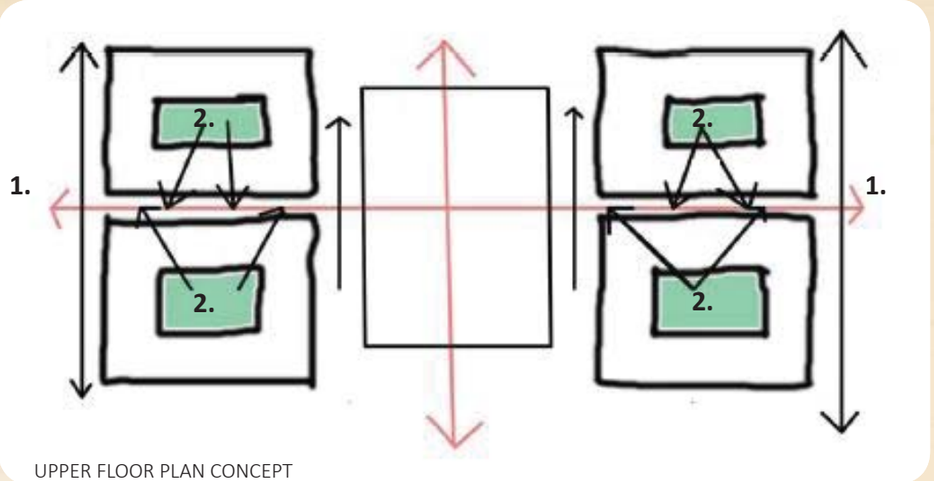
The final conceptual process was subsequent to identifying if the aforementioned principles enabled not only the child's (non-orphan and orphan) but also the greater community's reintergration and connection with form, space and environment, the dialogue which enables empathic architecture. A progression arose which consolidated a community, its users, building programs and environments as one unit. The result was the application of the form as a prototype across the city block which shall be elaborated upon in the proceeding section.



EXTERNAL SECTION OF FORM

SECTION THROUGH FORM ILLUSTRATING PLAYSCAPES

Figure 79: **Concept Two: 'Carving-out-of'**



UPPER FLOOR PLAN CONCEPT

Figure 80: **Concept Two: 'Carving-out-of'**

4.4 Process Four: The Formation of a Prototype

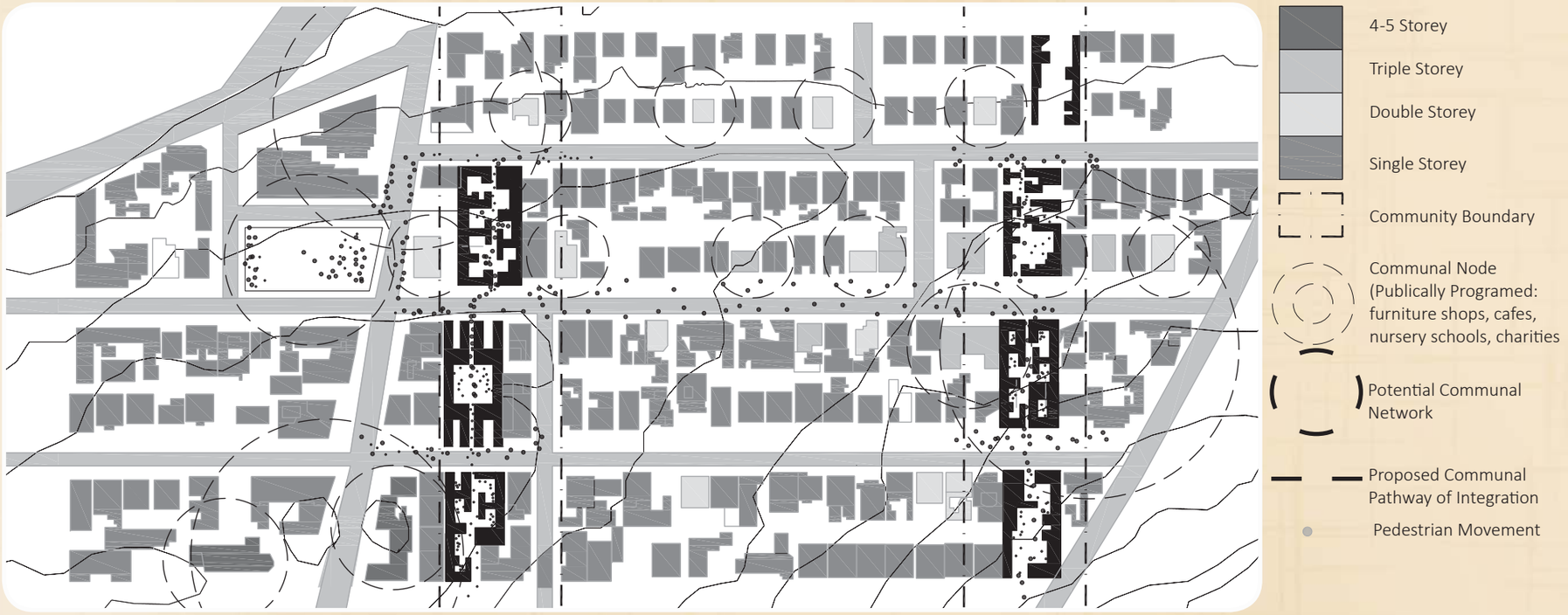


Figure 81:
Prototype Development in the Yeoville context: 1:2000

As the detail of the form began to progress, it appeared that there was potential for it to be reapplied and function beyond the isolated boundaries of the site which sought to reconnect and create a sense of community with a single internal street.The principles of the form could become a basic prototype for a modular system, which would be placed repeatedly across the suburban block. The single form, through the application of four dwellings and the internal street, mimics an entire suburban block typology. Once repeated across a city block, the prototype would create a unified transition of communal precincts, formulating a precise urbanity (Fig.81). The aim to de-institutionalise, as a remedy to the aforementioned hypothesis, was also exemplified as the system would facilitate a network of communities through the creation of purposeful, inviting spaces. This would enable a freedom of structure and the empowered natural movement of the user. The network, however, would not remain in isolation to the original street, but rather in the moment of transition between communal modules, a connection to the original pedestrian would be maintained and an additional pedestrian network would form, internally between each module (Fig.81). This application grounds Herzberger's (1991, p.49) notion of the "living-street" absolutely, as conditions are created for a more "viable street" (1991, p.49) where "social contacts between local residents can be established as a communal living room" (1991, p.48). Further, the concept of dialogue is fully materialised, as the user more greatly connects to the environment through a process of constantly interacting with the building as the internal streets form a lattice of interfaces.

This marks the end of the conceptual processes which led to the detailing of the conceived form. The following section illustrates how the building began to function, realistically considering light, ventilation and material, which are the elements detailed through structure, space, program and façade. It is these details which will be analysed in section and plan and enable the building to truly reflect its aim at becoming a piece of empathic architecture through dialogue; that is the connection between user, building and environment.

4.5 The Final Form: A Social and Physical Analysis in Plan and Section

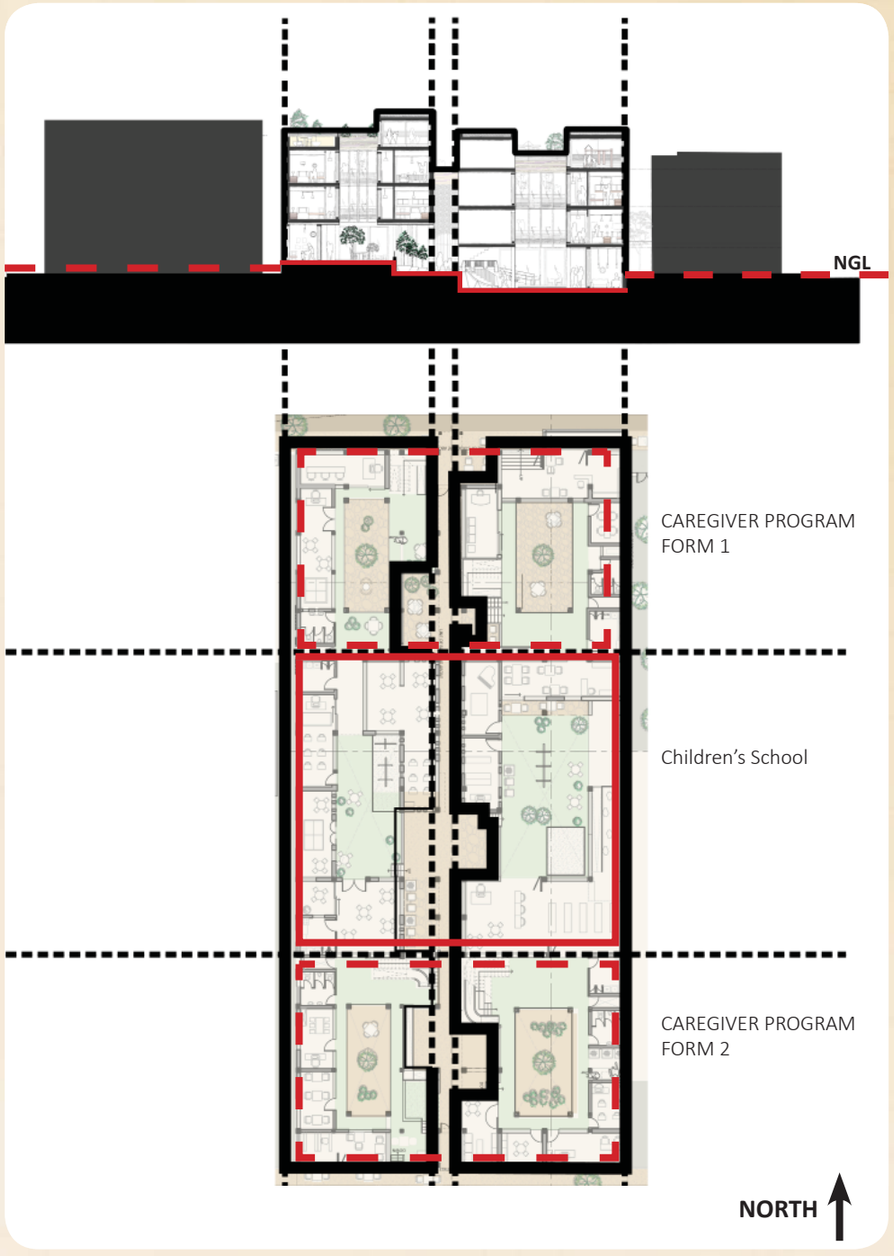


Figure82: **A Cross Section and Ground Floor Analysis**

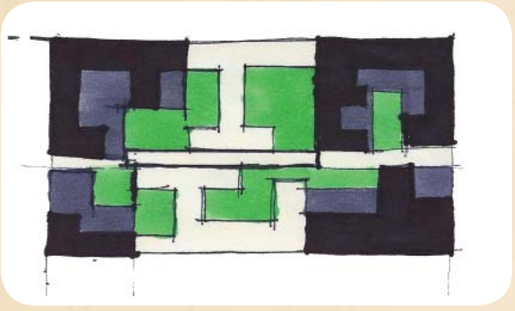


Figure 75: **Process Three: External Public, Internal Private**

The Ground Floor plan was conceived from the conceptual idea of 'carving-out-of' space, as previously discussed; the resultant spaces where then further articulated through integrated pieces which would reflect puzzle like connections.

In section, the ground floor is experienced on three levels, with the street remaining at the ground's natural level and the left and right built form raised and dropped below street level respectively.

This was done to emphasize the internal street as a means of reconnection with the community outside the site boundary, as well as to create the first gradation space. A subtle articulation of privacy for the users without isolating them from the external environment and community (Fig. 82).

The Ground Floor is host to two types of programs: the main Caregiver Program and a series of community shop-fronts.

The Caregiver Program which, as discussed in Chapter Three, runs two parts. The first part is the training of the volunteers and the second is the schooling of the children at D.O.C, as well as being offered to the children of the Yeoville community.

This is implemented in three parts, where the training of the volunteers happens on the site's left and right peripheries, across the indicated blocks (Fig. 82). The middle of the site is thus kept for the schooling of the children.

The second gradation of space, security, was addressed. This enabled a sequence of supervised spaces for the children to move freely in, under a comfortable range of adult surveillance (Fig. 82).

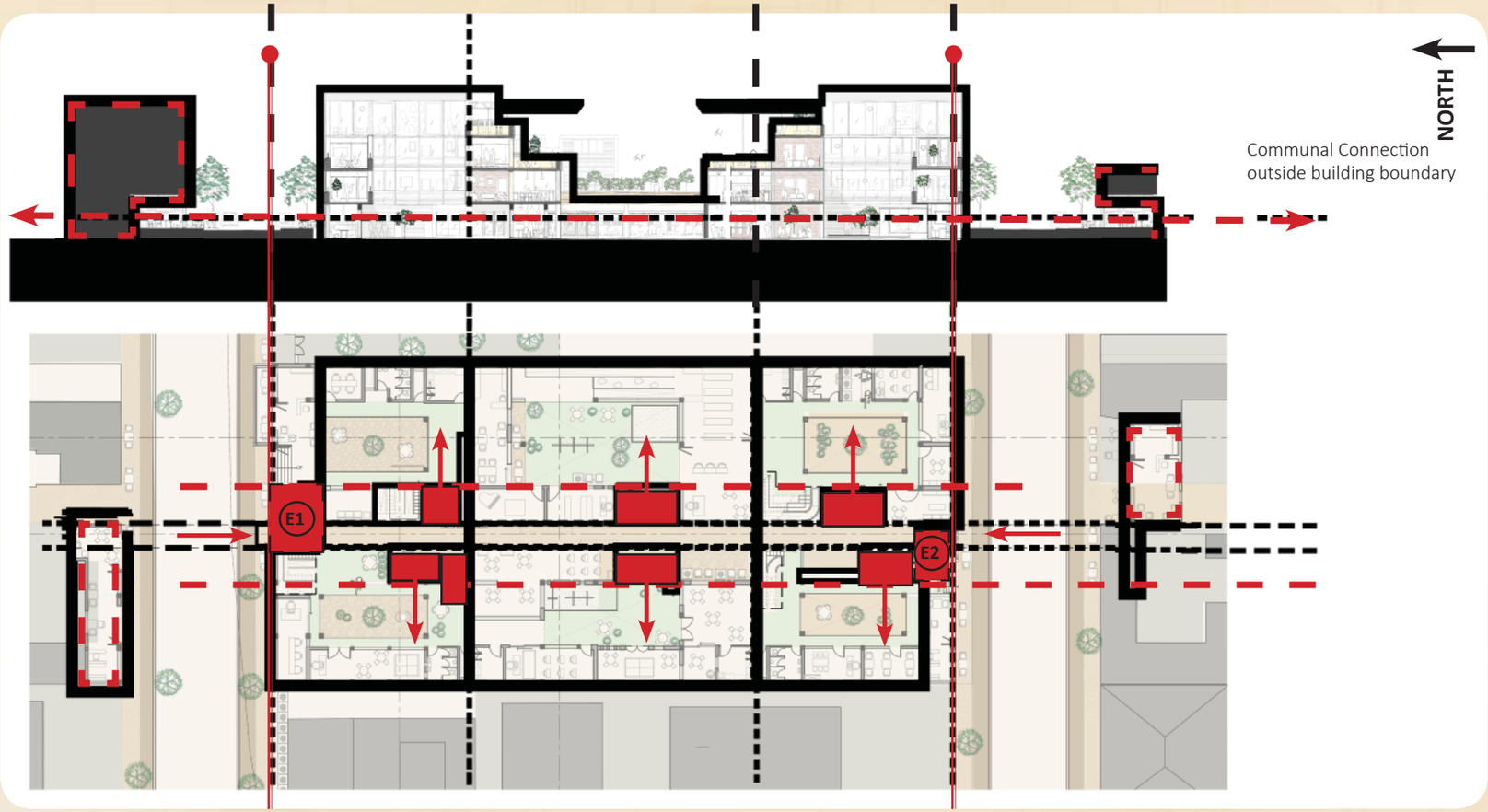


Figure 83: **A Cross Section and Ground Floor Analysis**

The community shop-fronts run along the North and South site peripheries and reflect the way in which the form was configured to propose the real connection between the communities outside of the building's immediate environment and the building's direct users (Fig. 83).

The pavement is brought to life as it becomes integrated into the building boundaries and the community is invited to become a part of the building without partaking in the form's main program. What further developed was the potential the buildings opposite the site had to incorporate the same program, as both the adjacent buildings on the North and South peripheries were flat typologies. This intervention would further encourage an even greater connection across the street. (Fig.83)

The incorporation of this program into the design responds to the second hypothesis, which addresses how it is larger society who has become the orphan's place in history, as it presents a method of de-institutionalising and re-integrating communities through a simple restructure of conventional space (Fig.83).

The two final gradations of the control and entry of space are facilitated at specific points across the site. Firstly, the entrance to the building occurs at both the North and South peripheries of the internal street. The recession of both entrances emphasize the threshold between the pavement and internal street and defines the first point of surveyed entry into the site. The second point of entry occurs at the transition between the internal street and courtyard spaces. Each courtyard area has a staircase, with alternate courtyards having both a ramp and a staircase. This simultaneously facilitates a control about the spaces, as well as provides the user with different points of entry. This further reflects a de-institutionalised space as the user is presented with optional points of entry (Fig.83).

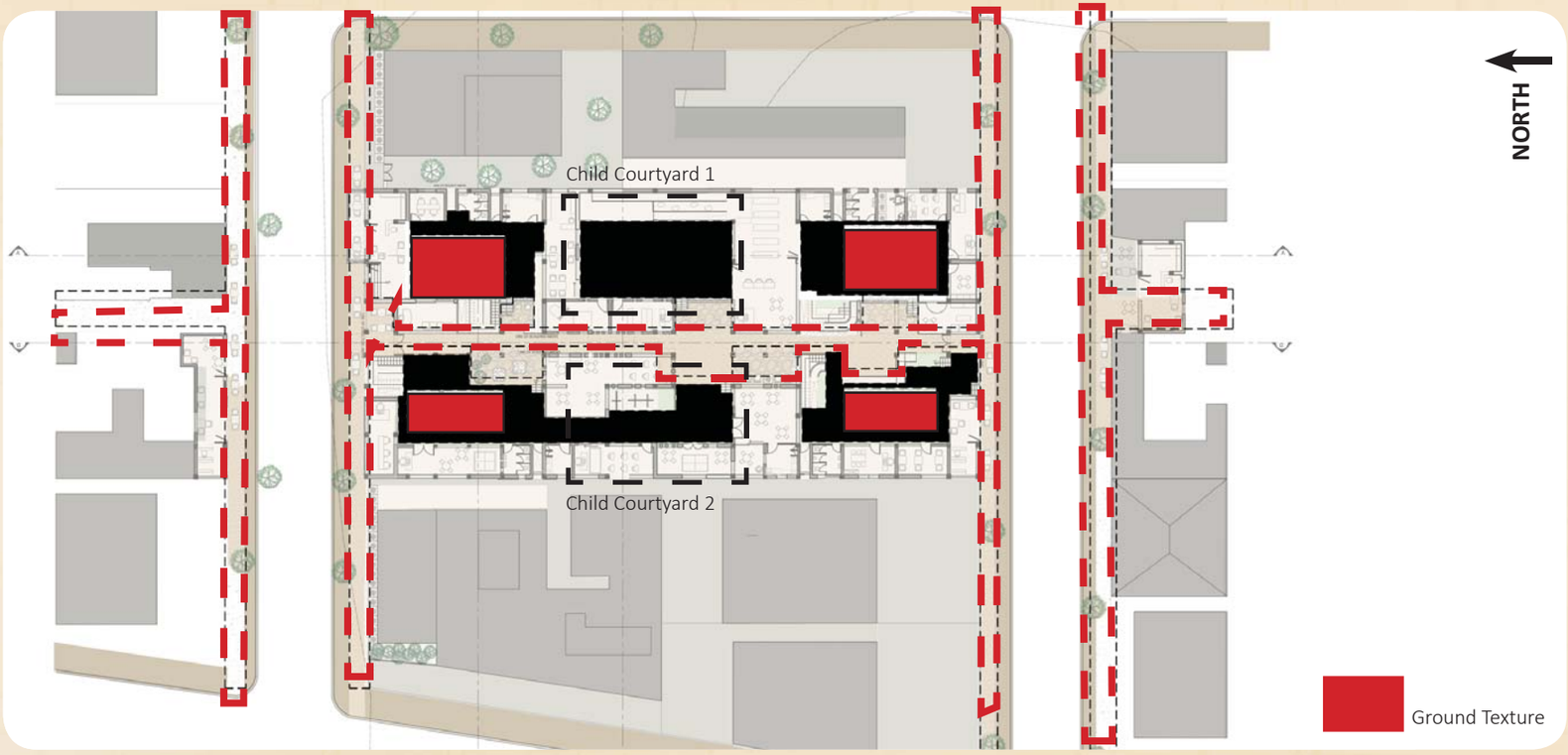


Figure. 84: **A Ground Floor Analysis**

Above the physical application of design elements rendered across the site as a means to resolve a coherency about the gradation of privacy, entry security and control within the site, ground textures were also considered as a means of differentiating the types of communal spaces and circulation. Although the internal street is gated from the pavement, the same material was applied to both the internal street and the parts of the pavement which were considered an extension of the shop-fronts along the North and South peripheries of the site. The material thus reflects the communal connections that can occur across the site and within the extended environment (Fig. 84).

Specific attention was given to the aesthetic nature of the external environment. The choice of different textures thus further illustrates how the Caregiver Program is divided into three parts. The courtyards which surround the training of the volunteers are more delicately structured having both grass and gravel areas, as compared to the grass courtyard which is the children's play area outside the school (Fig. 84).

The adult user is less likely to want to explore the space through play and movement and thus the textures structure the space to accommodate the adult user. The child (non-orphan and orphan) requires a freedom of space with which he can manipulate accordingly and thus the grass, with moveable play elements, was provided. What must be noted is that both the adult and child user can easily access the adjacent courtyards; however, by the subtle manipulation of ground textures, are more likely to remain in the courtyard which adheres to the surrounding program (Fig.84).

Thus the Ground Floor constructs the public environment which begins to reconnect the child (non-orphan and orphan) to the external community of Yeoville, simultaneously encouraging a communal re-integration to take place through the variations in space and program. The first to fourth floor present the more private program of the site, which was designed predominantly for the needs of the orphan child, with the aim of creating a family-like structure which would encourage an enriched environment which the child can grow up in.

Figure 85: **A First Floor Analysis**

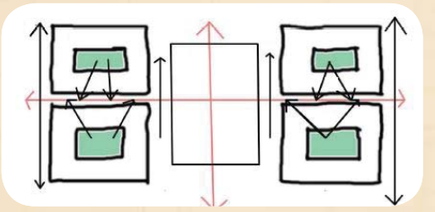


Figure. 85 (a) :**Conceptual Sketch**
The Conceptual sketch illustrates how the fundamental concept of "carving out" was consistently carried through during the more detailed design stages

The private homes, which run across the first and second floor, accommodate both the orphaned children and their caregivers. Having progressed from the conceptual plan, each of the four built forms becomes a private residence. The homes have carefully considered the different types of orphan care, as outlined in Chapter One, and have been arranged spatially to potentially provide for two methods. The modern approach to institutional care, as discussed through the SOS Children's Village example in Chapter One, which identifies "family-based dormitories" (Abebe, 2009, p.9) run by a single House Mother who acts as the children's official caregiver. The second method is an adaptation of the conventional community based care, which seeks out local communities to support the children. In this case, the first or second floor could be used as an apartment, whereby house parents and their children move into the building and care for the orphaned children in addition to existing caregivers. This is a similar system to foster homes, however the family moves into the orphanage and through the arrangement of space is able to maintain a level of privacy (Fig.85).

Each home is accessed individually from the stair/slide (the technological detail which shall be elaborated upon in the fifth chapter), which can only be accessed by the home's occupants. The four homes are not identical, but host similar features which carefully articulated the space through light, ventilation and a sensitive consideration of the transition between external and internal. The home is structured around offering a consistent level of public and communal integration through a lattice of visual connections. A rectangular space runs from a balcony that is positioned on the site's boundary and moves across the area of the open courtyard and into the communal living area of the home. This maintains a public connection with the main street, pavement and community along St. Georges Road, congruently creating a visual passage between the communal spaces of each of the homes (Fig.85 & Fig.86).

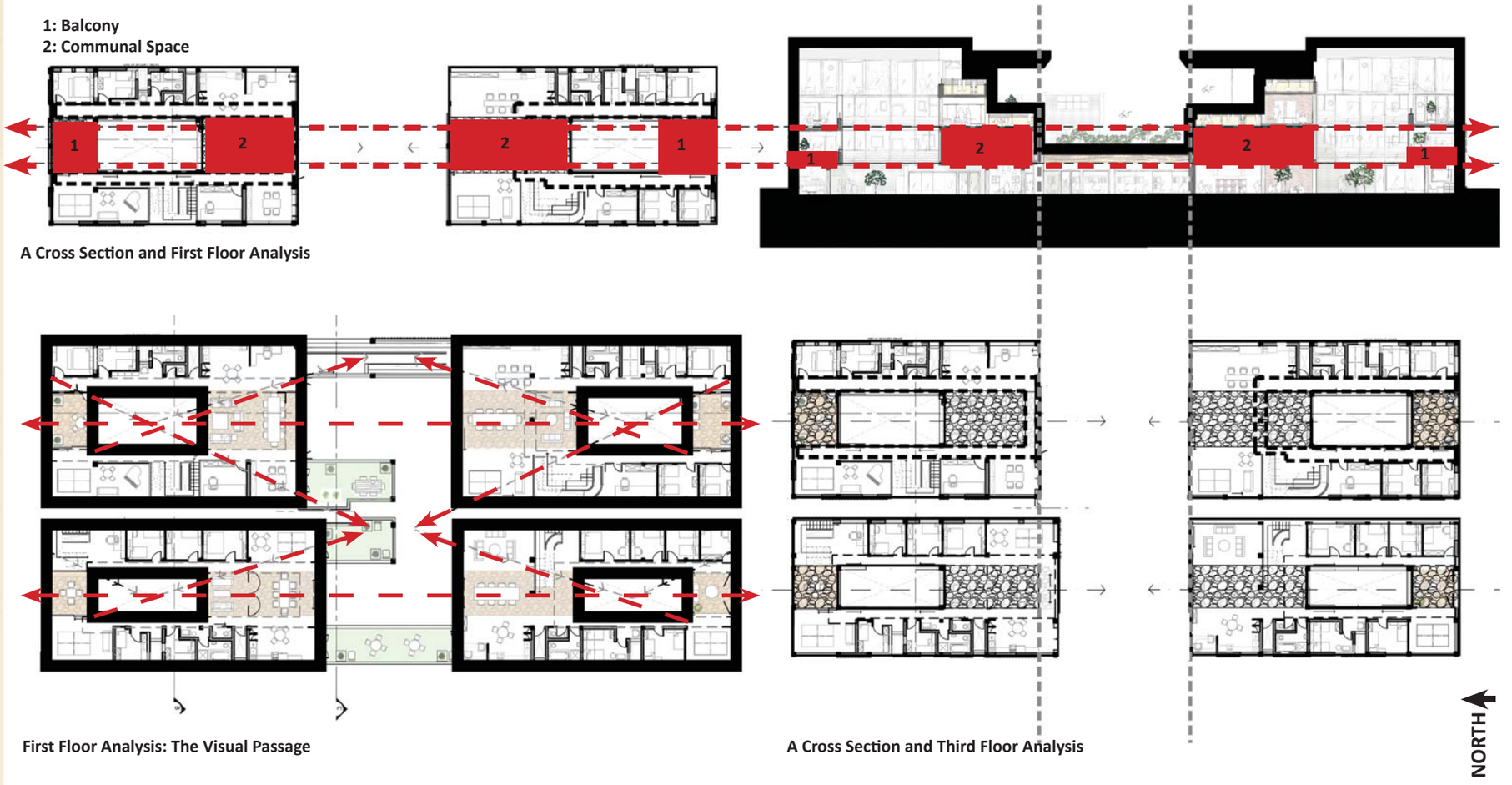


Figure 86: **A Cross Section and Ground Floor Analysis**

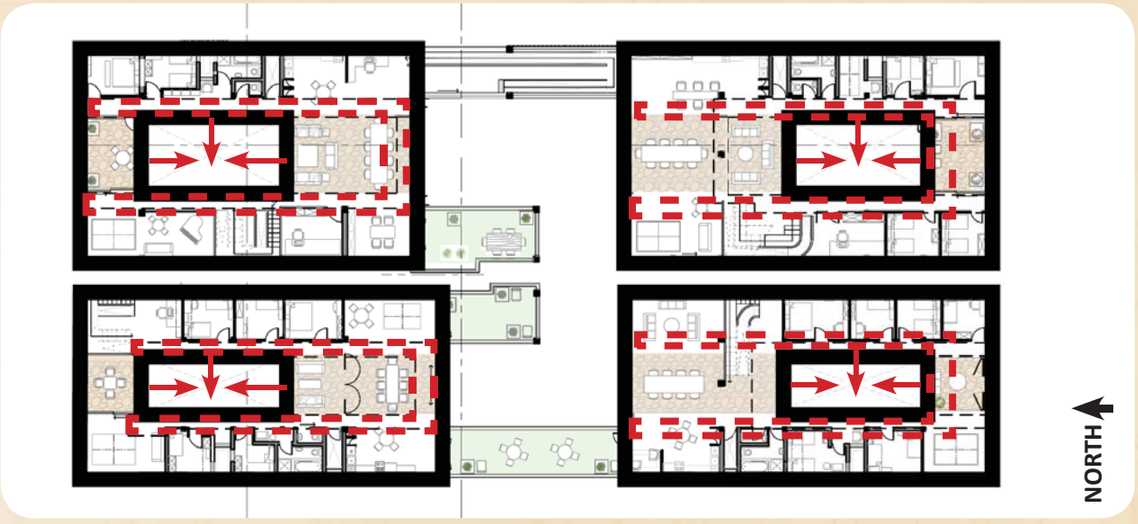


Figure 87: **A Cross Section and Ground Floor Analysis**

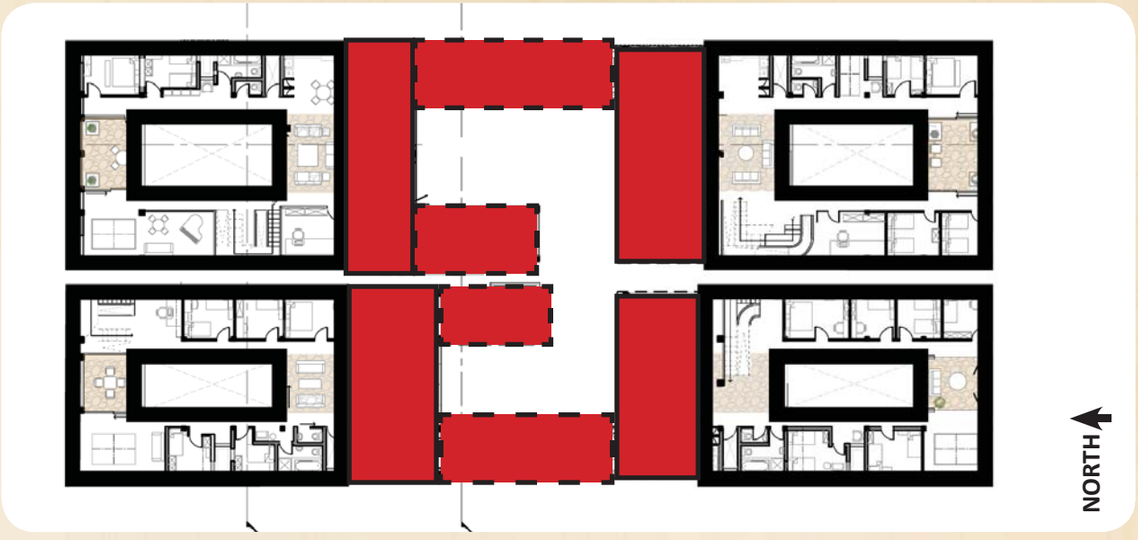


Figure 88: **A Cross Section and Ground Floor Analysis**

The bedrooms feed off a circulation passage, which wraps around the open courtyard. This provides a connection to the public sphere at ground level and maintains a necessary privacy. The form, therefore, creates a sensitive balance between public, private and communal spaces (Fig. 88).

Each home also projects a balcony which acts as a playscape, so the orphaned child is able to experience a playful outside space which presents itself as a rooftop garden rather than just a conventional balcony. These balconies occurred as a result of the conceptual section and are staggered as to accommodate light and emphasize the central courtyard space at ground level, whilst enabling a secure supervised space for the orphaned child to freely explore (Fig. 88).

4.5 B) Material: The Faciliation of Light and Air

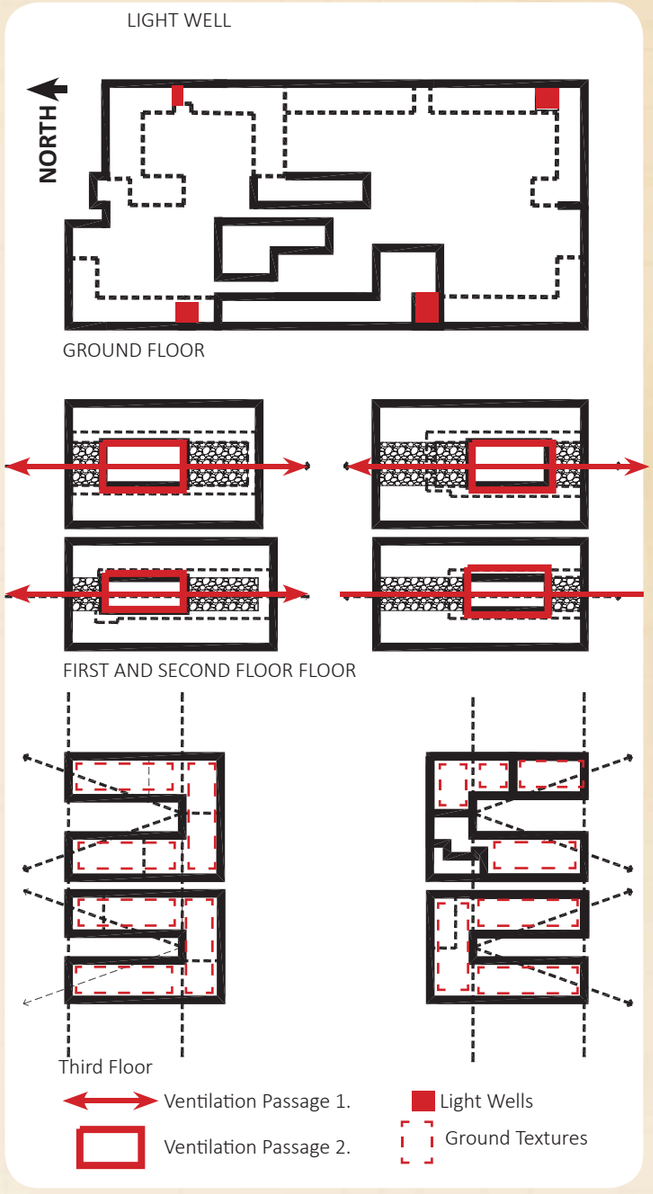


Figure 89: **A First Floor**

The complexity of the built form had to be considered carefully in relation to the amount of light the spaces received and the way in which they were ventilated. At ground level the four courtyards, although not completely bound by form, essentially function internally, as the homes above reveal only an open centre in the space. Thus light-wells were added to incorporate a filtered light throughout the building, which would act as further ventilation for the bedroom spaces in the above floors. The materials at ground level also control levels of light and air accordingly, where the built form below the four homes consists of glass windows, as well as folding and sliding doors, to enable the greatest generation of light from either side of the North and South peripheries. The uncovered spaces in-between are defined by heavy brick work with windows that are expressed as punctures. This creates a contrast and a further definition in the process of transitioning between varieties of different spaces (Fig. 89).

The internal circulation spaces on the first and second floor, which wrap around the central ground floor courtyards, are expressed with sliding glass doors to maintain a visual connection, as previously mentioned, and create a ventilation passage which runs through the rectangular space; that is between the street periphery balcony, the exposed ground floor courtyard and the internal communal spaces of the home. This inside-to-outside transition is further emphasized by the ground floor cover, which is applied to the street balcony and across the communal living area and emphasizes the rectangular area as a communal domain (Fig.89).

The third floor, the roof of the four individual homes, presents the child user with one large playscape which is comprised of a number of different ground textures and transitions between internal and external space. It is this roof scape which provides the most secure space for the child to experience a freedom of play, as it can be designed as a secure space which can be easily surveyed. Due to this, parental supervision can remain, to some degree, purely visual, allowing the child to naturally move through and explore the space. The choice to create a final playscape on the roof aimed at solidifying the form as a space of empowerment for the child. The simple element of height enables the child to be easily identified from St. Georges Road and strikes a strong visual connection with the surrounding Yeoville area, literally identifying her place in the city (Fig. 89).

The entire form is intended to be experienced as a series of thresholds, providing variations in light, texture and materials. Each threshold presents the user with different options of entry access and circulation. The space is structured to present both a free movement relative to the child's nature, whilst simultaneously accommodating the adult caregiver by providing secure and easily supervised spaces. These spatial variations aim to promote the child's stages of cognitive development, as Piaget discusses that a child experiences spaces through a series of "centres or places, directions or paths and areas or domainship" (Piaget, n.d, p.19, as cited in Schulz, 1980), as noted in the conceptual steps in process three. Thus the form is grounded on the basis of enriched social environments, facilitated by carefully detailed form, and is able to become an empathic piece of architecture, evoking the user's positive emotional connection with the building and environment (Fig. 89).

4.5 C) The Facade

Figure 90: **Portion of North Elevation**

Figure. 91: **Dunbar Street, South of St. Georges Street. Art Deco Flat.**

Figure 92: **Ellis Street, North of St. Georges Street. Art Deco Flat.**

According to City of Johannesburg's (COJ) official website, Yeoville suburb was declared in 1891, with a mixture of single and double storey typologies "no taller than five storeys" (Anon, 2007). Yeoville is one of numerous suburbs in Johannesburg which are predominately flat typologies. COJ (2013) continues to state that building in the suburb came to a halt due to the depression and was resumed five years later during the art deco movement and now has "over two dozen"(Anon, 2007) art deco residential blocks (Fig. 91 & Fig. 92).

The intention behind the façade of the building was not to directly mimic the art deco neighbours, but rather to begin to apply a common art deco element through the placement of balconies on the street facing facades and enable the building to relate to its neighbours, as it comfortably settled in to the site. Both entrances were emphasized as to further draw a parallel to the over embellished art deco entrances, scattered around the suburb and down St. Georges Road. Thus the basic elements which responded to the surrounding buildings' character were addressed and implemented in the design in order to incorporate the building into the surrounding environment. However, the façade was treated so as to define D.O.C as a recognisable place along the street and within the greater Yeoville community (Fig. 90).

The external façade of the building comprises of reclaimed timber, which is ship-lapped across the first to final floors and punctured by windows. The stair/slide sees the continuation of the facade treatment, which unifies the façade. It is jaggered so as to reveal the staircase, which is to be covered with glass. The public ground level of the building is fitted with glass doors, as previously discussed, which enable a distinction between public and private space (Fig. 90).

The ship-lapped timber was based upon Renzo Piano's Auditorium for L'Aquila, a central Italian city, which as Arch Daily describes, was severely affected by an earthquake in April 2009. Piano was thus commissioned by the Italian city of Trento, to design the auditorium as one of the efforts to "aid the reconstruction of [the] medieval city" (Anon, 2013,p.1).

The auditorium is made entirely of prefabricated wooden pieces, which were assembled on site. Piano aimed to "[create] an illusion of instability" (Anon, 2013, p.1), as the form is comprised of a series of cubes which appear to have "haphazardly tumbled down" (Anon 2013,p.1) and are resting upon each other (Fig. 93 & Fig. 94).

The building reads as a series of child-like blocks, which appear as though they could be reordered at any time. The subtle tinting of the wooden panels also gave the appearance of a child-like form, thus the precedent was implemented as the treatment for the main facades of the building. The use of colour was considered as a means for the orphaned children, who live in the home's situated above the public spaces, to easily identify which house they belonged to, as according to Piaget (n.d, p.19, as cited in Schulz, 1980), children associate space with specific points of reference, where the first point of reference is always the home. Therefore, by adopting Piano's use of colour, the street facade of each home was treated with a different colour, as tinted timber pieces were placed inbetween natural panels. This creates a subtle method by which the orphaned child could identify the building (Fig. 90).

Piano chose to use timber, due to its acoustic qualities, as it has the ability to provide effective sound insulation from the obvious noise that would be generated from the auditoriums various programs. Similarly, the decision was made to also use timber for the same features, as children would predominately occupy the homes, and with a series of play spaces created, sound insulation would be necessary in accommodating the surrounding neighbourhood flats. Timber was also chosen due to its energy efficient features, such as being carbon dioxide neutral and providing highly effective insulation, according to Markus (n.d, cited in Anon, n.d). Further timber can be easily reclaimed from the area, as there are a number of carpenters along both the North and South peripheries of the site; once reclaimed, it can be easily fixed to brick.

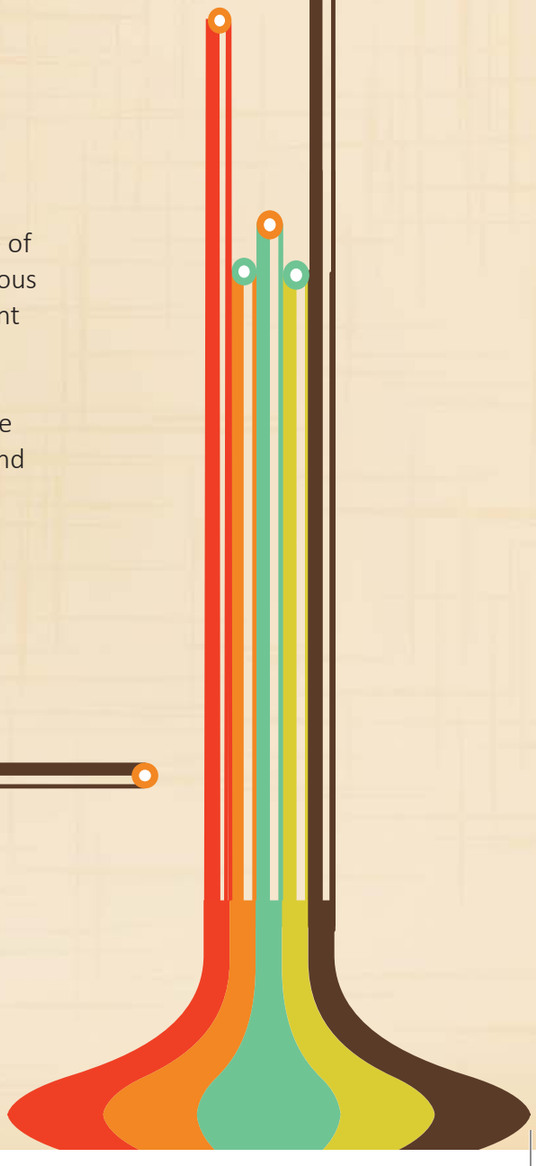
Figure 93: **Entrance to L'Aquila Auditorium, Renzo Piano**

Figure. 94: **Facade Detail of L'Aquila Auditorium, Renzo Piano**

CHAPTER FIVE

Technology Studio Detailing an element within the building

The concept of dialogue has been thoroughly employed and consistently emphasized throughout the thesis document. The design aims to fully capture this important relationship between building, user and environment. The consistent process of inter-subjective design, as a means to facilitate an empathic piece of architecture, created a platform from which emerged the basic structural forms. As discussed in the previous chapter, the design becomes a piece of precise urbanity. Once dissected, an element of inspired movement about the positive space around the building reveals itself and is what aids the design in establishing a dialogue between the body and the building. This emotional provocation is further encouraged as the positive external space enables a freedom of form which de-institutionalises. This chapter will examine the development of the technological detail which enables the inspired movement of the positive space around the building.



C5

5.1 A Case Study: The SEED Library by AOJ

The umbrella theme of the thesis is empathic design, as a means to remedy the hypothesis that the orphan in history is the child in contemporary society. The building empathises with the adult care-taker, but strives to empower the child user first and foremost. Thus, the technology studio detailed the element which connects the space around the building, from street, to courtyard, to play-scape. The stair, which at first glance may appear to be a one dimensional detail, becomes a symbol of the child's ability to freely articulate the building.

Upon having extended experience with children and understanding the precarious nature of certain physical elements, the staircase is one of the most feared components of a building. This is a recurring concern due to the simple fact that children find the concept of moving up and down completely compelling. Thus the intention was to create a detail that would enable the child this very freedom without the instinctive worry the adult user would naturally possess. Again, this refers to the process of inter-subjectivity in order to create an empathic form which provides for both users, maintaining an emphasis on the child.

The case study was inspired through a site visit to the new SEED (Supplementary Extended Educational Device) Library at M.C Weilier Primary School, District 9, Alexander. This small "product", as it is referred to, was designed by Architects of Justice (AOJ) and initiated by the MAL (Make A Living) foundation, "South-Africa's first not-for-profit advertising agency".
The library is constructed primarily out of low- tech materials of which the main structure comprises of two reclaimed shipping containers. Additional basic steel construction, donated composite decking, fibre-cement panels and many buckets of colourful paint create the adjoined elements, which awaken the form and present it as one large detail.

The reason for selecting this piece as a case study was the subtle design techniques which were used to create simple details that could stimulate the child user. It is these elements which enable the structure to function successfully. A brief interview with the architects, revealed how the architecture, above its primary function as a library, had its own ability to teach. They described how the highly visible physicality of the construction of a form can provoke the child's interest in geometry and stimulate the child to realise how the building is connected. "A basic example is that of the stairs, we realised that all the stairs in the school were pre-fabricated and cast in concrete, these children had never seen the underside of a stair, so a detail as simple as expressing that was created" (AOJ, 2013). The architects also stated that the children enjoyed the upstairs sun-deck, which had moveable furniture randomly positioned, and spent much of their time, re-arranging it according to their preferences. This further emphasises the need a child has to experience a freedom of space as it empowers them to have a sense of control over their environment, as opposed to it being dictated to them through the perspective of an adult.

Figure. 95(a): **Entrance of SEED Library, emphasized by container overhang**

Figure. 95 (b): **View from staircase of SEED Library**

Figure 96: **Perspective of Entrance Facade of SEED Library**

Figure 97: **Perspective of Facade Detail of SEED Library**

When questioned about the obvious use of colour on the façade and the reaction it provoked, it was revealed that the adult teachers responded more greatly to it than the children, which also presented an interesting development in the process of inter-subjective design. It emphasised the error of assumption, reducing the proposed user to a specific stereotype without consciously being aware of it.

The simplicity of the SEED Library illustrates how low-tech materials need not translate into poor structural forms, but rather, if designed correctly can produce interesting details. Considering my chosen site is in Yeoville, a sensitivity to the older exisiting buildings in the area would require the sublte use of materials in order for the building to maintain and establish new connections along St. Georges Road. Thus this case study acts as a realistic precedent of which the principles could be applied to the technology that was to develop.

The motivational grounds with which the library has been designed also mimic's the ideas that have been followed throughout the conceptualisation of the thesis from theory to form, and so added a depth to the critical transition between a theoretical concept and material idea. All of these elements are taken into the following stage, the definition of the technology.

Figure. 98: **Perspective of Deck Side of SEED Library**

Figure.: 99 **Perspective of Staircase of SEED Library**

Figure 100: **Second Perspective of Staircase of SEED Library**

Figure 101: **Container Detail of SEED Library**

5.2 Defining the Technology

The staircase acts as both the child and adult care-giver's personal means in accessing their private dwelling spaces, which progress from the first floor level. The phenomenological theory would thus define it as a space of the in-between. Introduced in Chapter Two, the concept of the in-between is defined as a transitional space facilitating a connection between external and internal environments. It becomes, as Herzberger (1991) describes "[a] condition to [enable] privacy [simultaneously] maintaining social contact" (p.35). Herzberger (1991) continues to address the notion of the in-between within the realm of the child, "a child sitting on the step in front of his house is sufficiently far away from his mother to feel independent… to sense excitement and adventure of the great unknown" (p.33). The staircase can thus translate further into a symbol which liberates the child to a free exploration of space.

In relation to the design, with the purpose of accentuating the method of transition between spaces, each staircase is placed on the periphery of the internal street edge. This placement strengthens its function as the element of connection, enabling the dialogue between the users and their internal and external environment, from street, to courtyard, to play-scape. The staircase then also becomes a public to private continuum of space, consistently emphasising the positive space the building has left behind. Further, this connection emphasizes Herzberger's (1991) understanding of the steps connection to the "outside world" (p.33) as he discusses it being both a part of the street and the home. This creates a security for the child in knowing that her guardians are close by, "the child feels at home and at the same time in the outside world" (Herzberger, 1991, p.33).

Figure 102: **Third Perspective of Staircase of SEED Library**

Figure 103: **Fourth Perspective of View from Staircase of SEED Library**

5.3 Detailing the Technology

Thus, the staircase was to be developed as the technology which epitomized the themes the thesis has outlined. It becomes a symbol of empowerment for the child, as the child is able to be identified as part of the outside world while simultaneously belonging to a private one, “the encounter and reconciliation between the street on the one hand and a private domain on the other” (Herzberger, 1991, p.33). The aim to create a simple technology which would further enable the child to make use of the stair independently explored the umbrella theme of empathic design. The aesthetic nature of the design would allow the adult user to identify the child’s place within the form.

The staircase was to be easily accessible to both the child and adult users. The positioning of the staircases enables them to become auxiliary elements of the building, providing the transition between public and private gradations throughout. Thus internally the staircases would convey a language which connected both the functioning of the adult and child user whilst externally connecting to the façade of the building, maintaining an identity with which to distinguish them as a prominent transitional space. A dual technology was the result of the internal staircase element.

A tubed slide would run adjacent to the flight of stairs and provide the child’s way down the building. The tube becomes a safe and secure system which extends the play-scape beyond its original one dimensional plane.
A simple system of highly durable Roto-molded plastic modules is screwed together, through a raised drain groove, to create the tubed structure.
The drain groove detail improves water runoff.
A skylight was added as a means of additional supervision.
The stairs that ran adjacent would also have to provide for the child as they could only use the tube slide one way down.

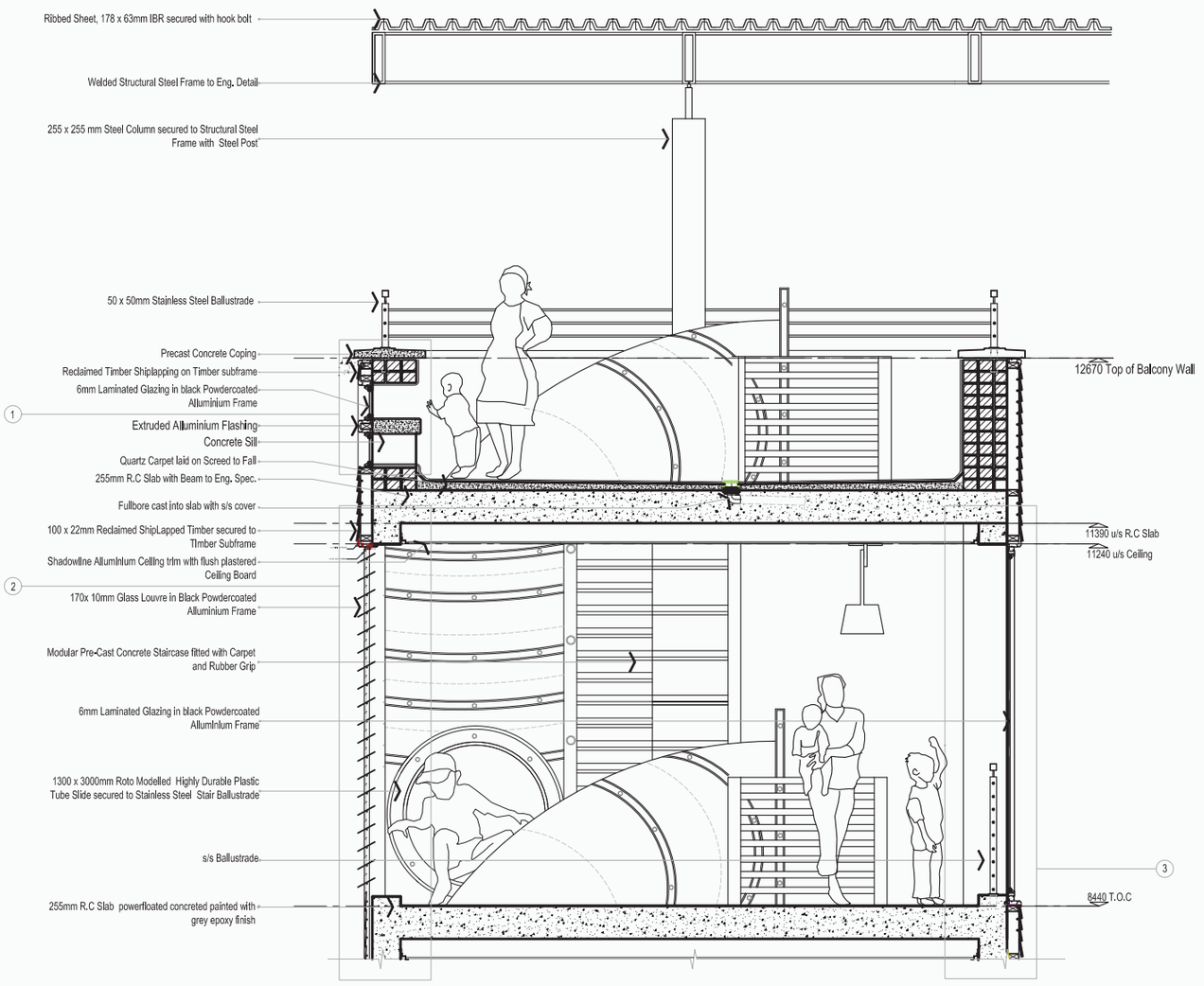
A simple process of extending the stair as a seating space, with the inclusion of the riser translating into a draw, in which the child (or adult) could keep paraphernalia, created another safe-zone the child could use freely, without the adult user having to dictate its movement due to potential safety risk.
The façade of the technology would partner with the reclaimed wooden ship lapping detail of the main building façade, as not to completely isolate the element from the main form having it potentially perceived as either completely trivial or overly dominating. However, the majority of the structure would be enclosed with glass louvres, to enable natural ventilation and expose the technology, so its purpose as an in-between space could clearly be recognised at street level.

The glass louvres are small enough to prevent the child from falling through, freeing the façade from the need of balustrades, and the mechanism is simple enough that the child is also able to control the need for ventilation.
The entire technology is the simultaneous liberation of both the form and the users. As Herzberger (1991) identifies, the conventional staircase often becomes the “no-man’s land” (p.38) of transitional space, as it offers nothing with which the user can connect. In this case, instead of the staircase breaking the dialogue of the building, through simple detailing, the user is reconsidered; a dialogue of the in-between which Herzberger (1991) presents as “an opportunity for accommodation between adjoining worlds” (p.35)

Figure. 104: **Slide One**

Figure 105: **Slide Two**

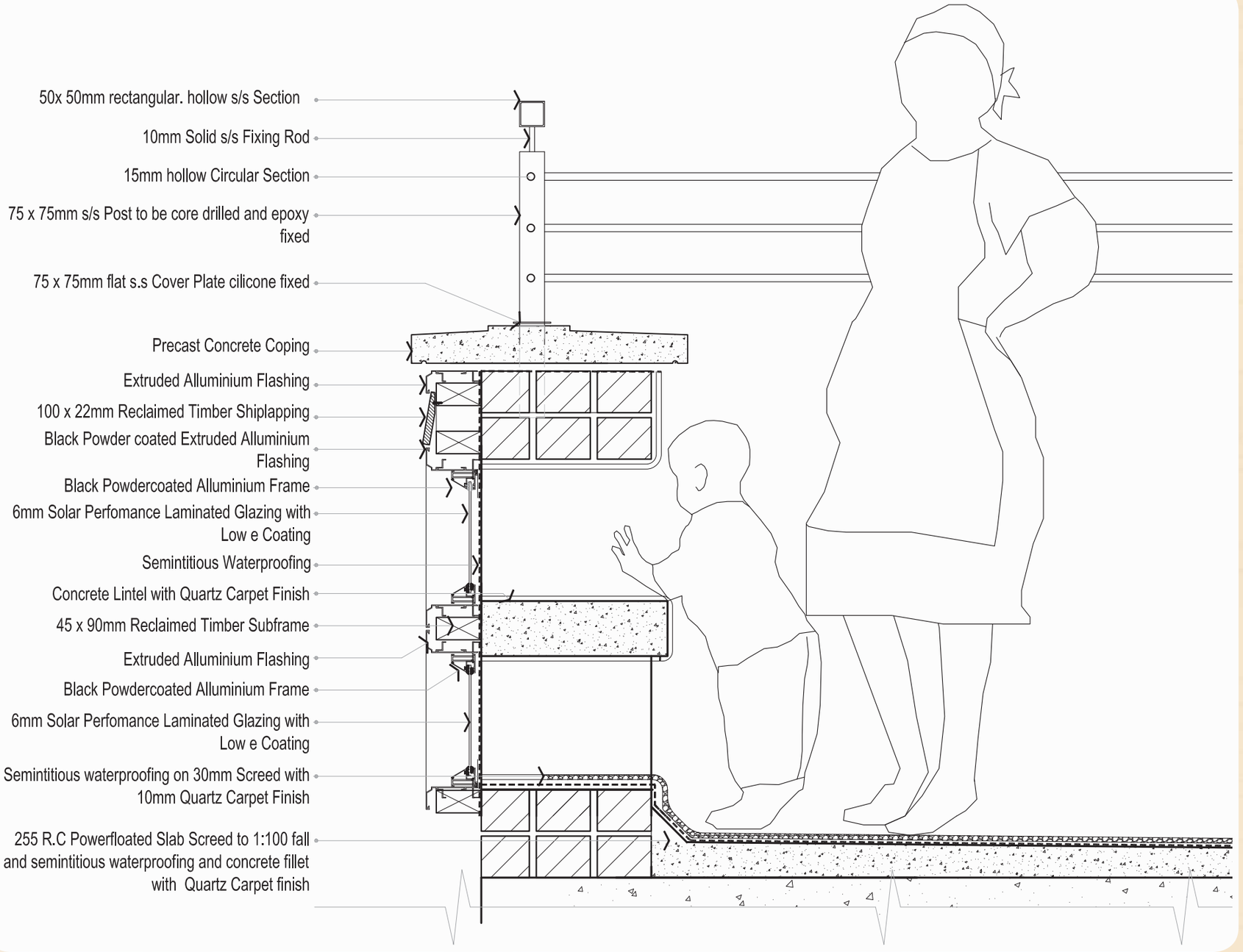
5.4 The Developed Technology



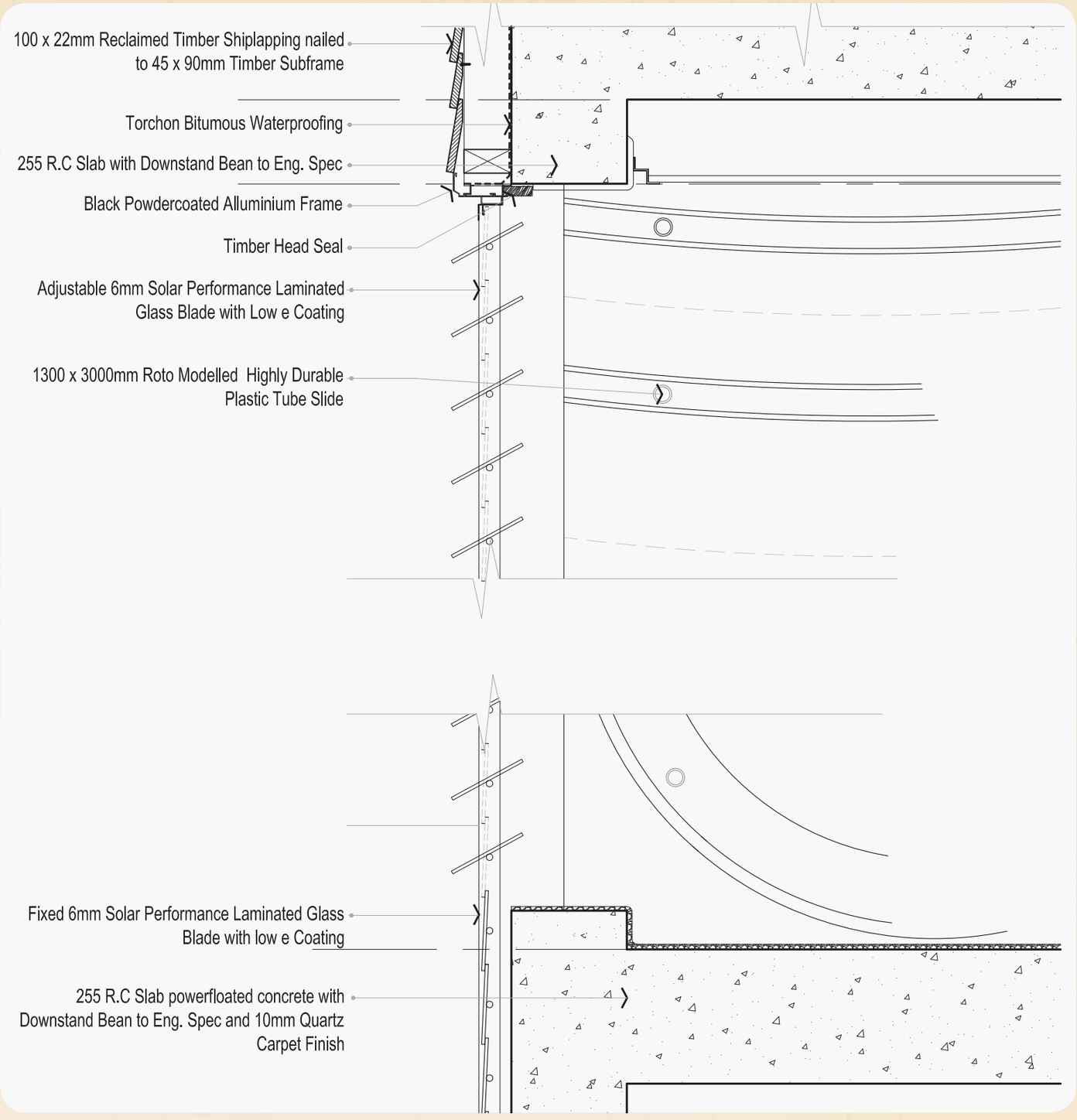
Section F : 1:50

This section illustrates the three technologies which have been developed as a result of the aforementioned research. The three details are designed to empower the child's articulation of within the building whilst accomodating the caregiver's need for safety.

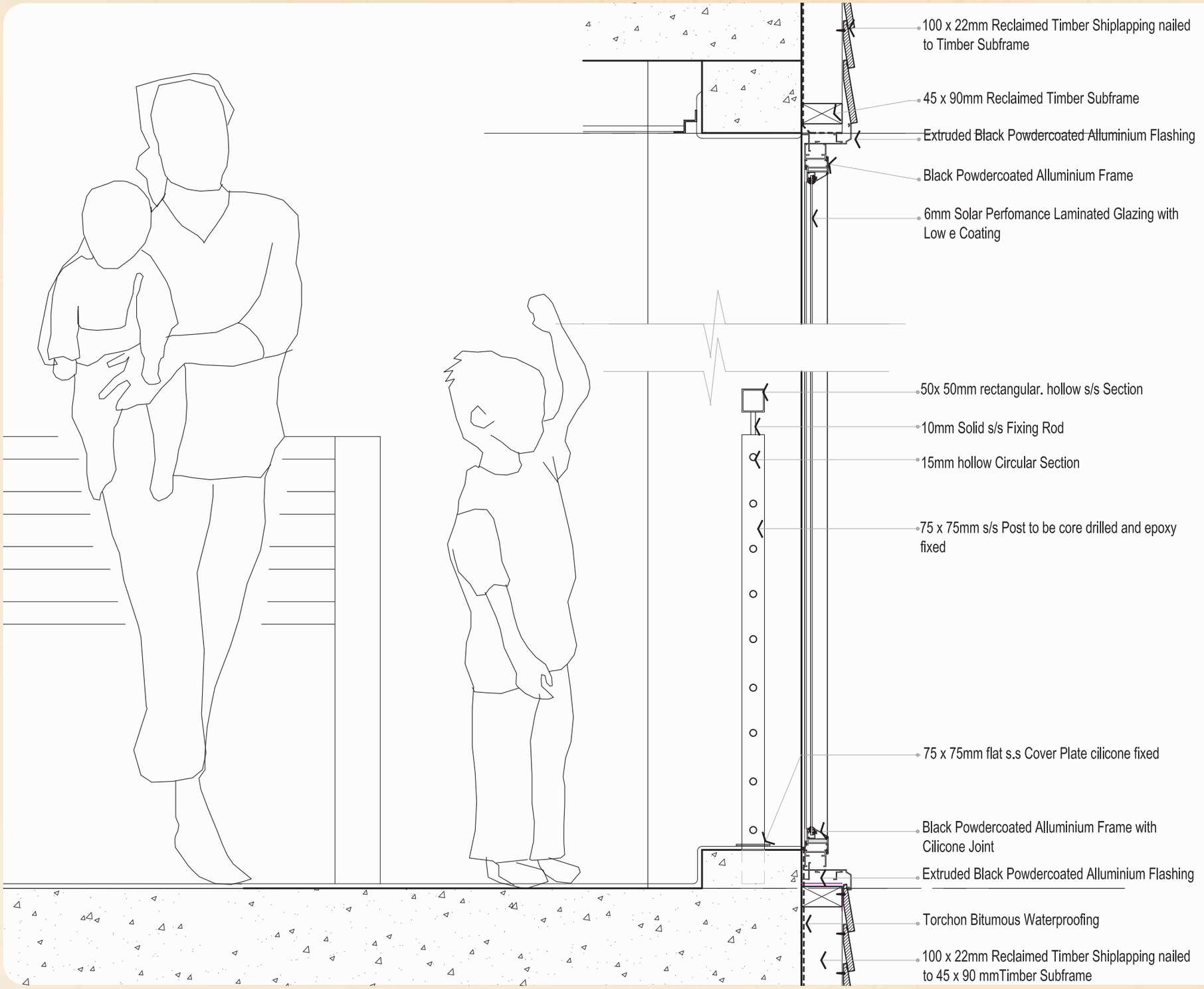
5.4 The Developed Technology



Detail One: **1:10 Balcony Wall Detail**



Detail Two: **1:10 Glass Louvre Detail**

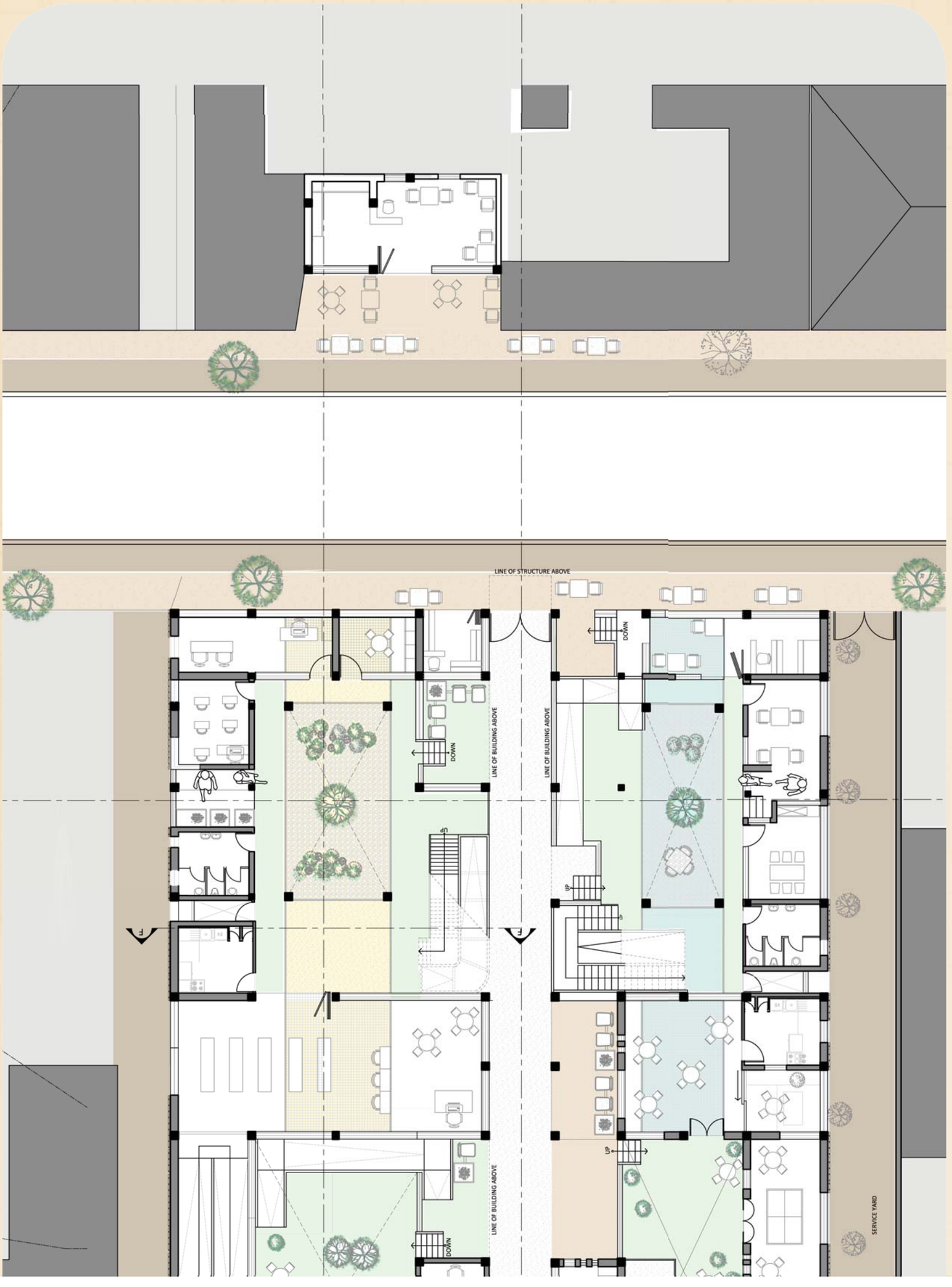


Detail Three: **1:10 Glazing Detail**

APPENDIX of IMAGES

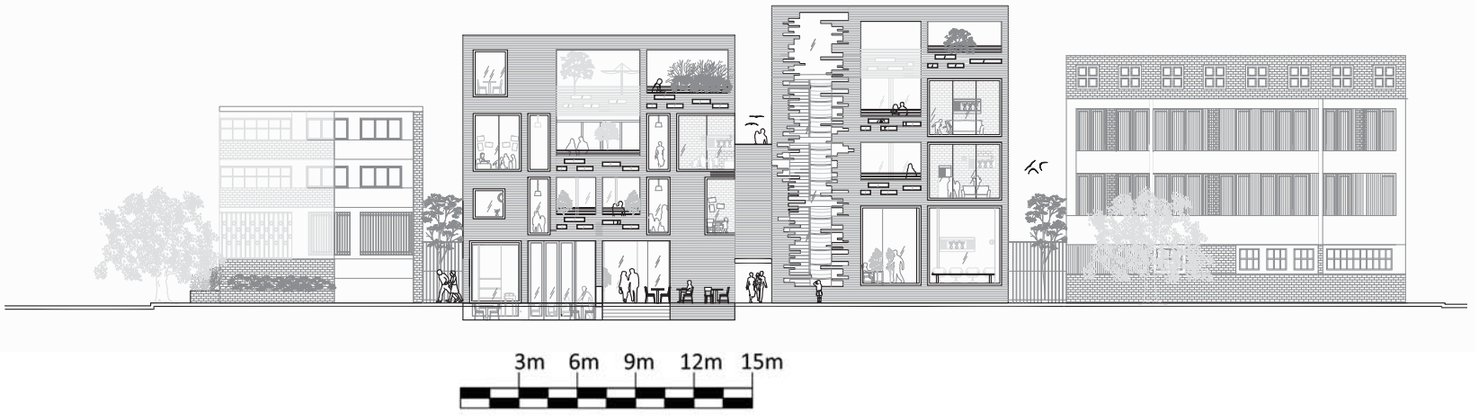
- Ground Floor Master Plan
- Ground Floor Plan
- North Elevation
- First Floor Plan
- Section A
- Second Floor Plan
- Section B
- Third Floor Plan
- Section C
- Fourth Floor Plan
- Section D
- South Elevation
- Section E
- Perspective Page One : Hand sketch and basic render
- Perspective Page Two : Hand sketch and basic render
- Perspective Page Three : Hand sketch and basic render
- Perspective Page Four : Hand sketch and basic render
- Perspective Page Five: Hand sketch and basic render
- Perspective Page Six: Hand sketch and basic render

Ground Floor Master Plan 1:200


LINE OF STRUCTURE ABOVE
LINE OF BUILDING ABOVE
LINE OF BUILDING ABOVE
LINE OF BUILDING ABOVE
DOWN
DOWN
DOWN
UP
UP
UP
F
F
SERVICE YARD

GROUND FLOOR
A. Public Cafe
B. Training Room
C. Reception
D. Stairwell
E. Staff Room
F. Toilet
G. Store Room
H. Music Room
I. Science Room
J. Lunch Room
L. Library
N. Fantasy Room
O. Classroom
P. Art Room

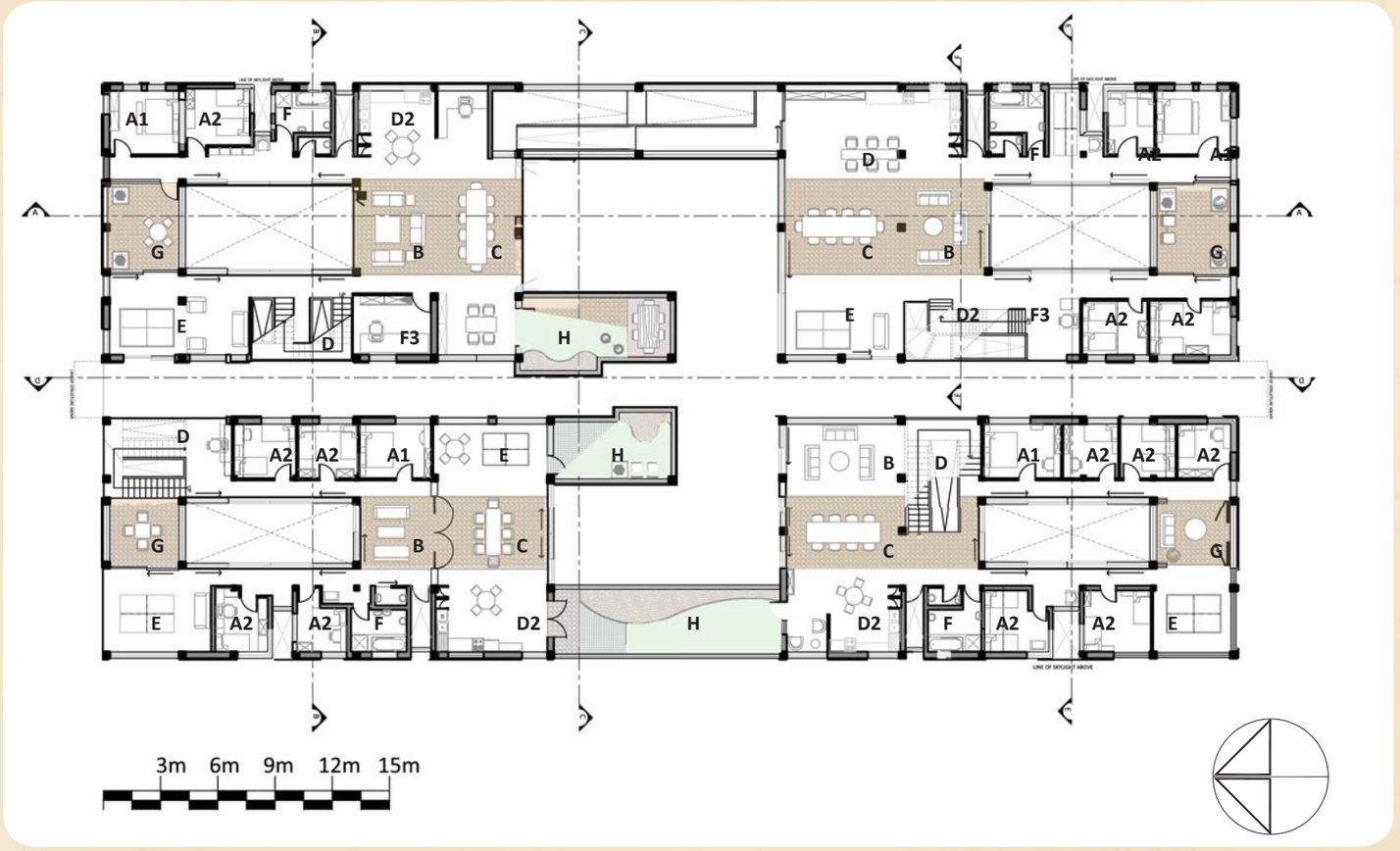
Ground Floor Plan



North Elevation

FIRST FLOOR

A1. Adult Bedroom
A.2 Childrens Bedroom
B. Lounge
C. Dining Area
D. Stair well
D.2 Kitchen
E. Child's Play Area
F. Toilet
F.2 Laundry Room
F. 3 Study
G. Balcony
H. Green Roof Garden



First Floor Plan

Section A

SECOND FLOOR

A. Caretaker Bedroom
A.2 Baby Bedroom
B. Lounge
C. Dining Area
D. Stair well
D.2 Kitchen
E. Child's Play Area
F. Toilet
F.2 Laundry Room
F. 3 Study
G. Balcony
H. Green Roof Garden

Second Floor Plan

Section B

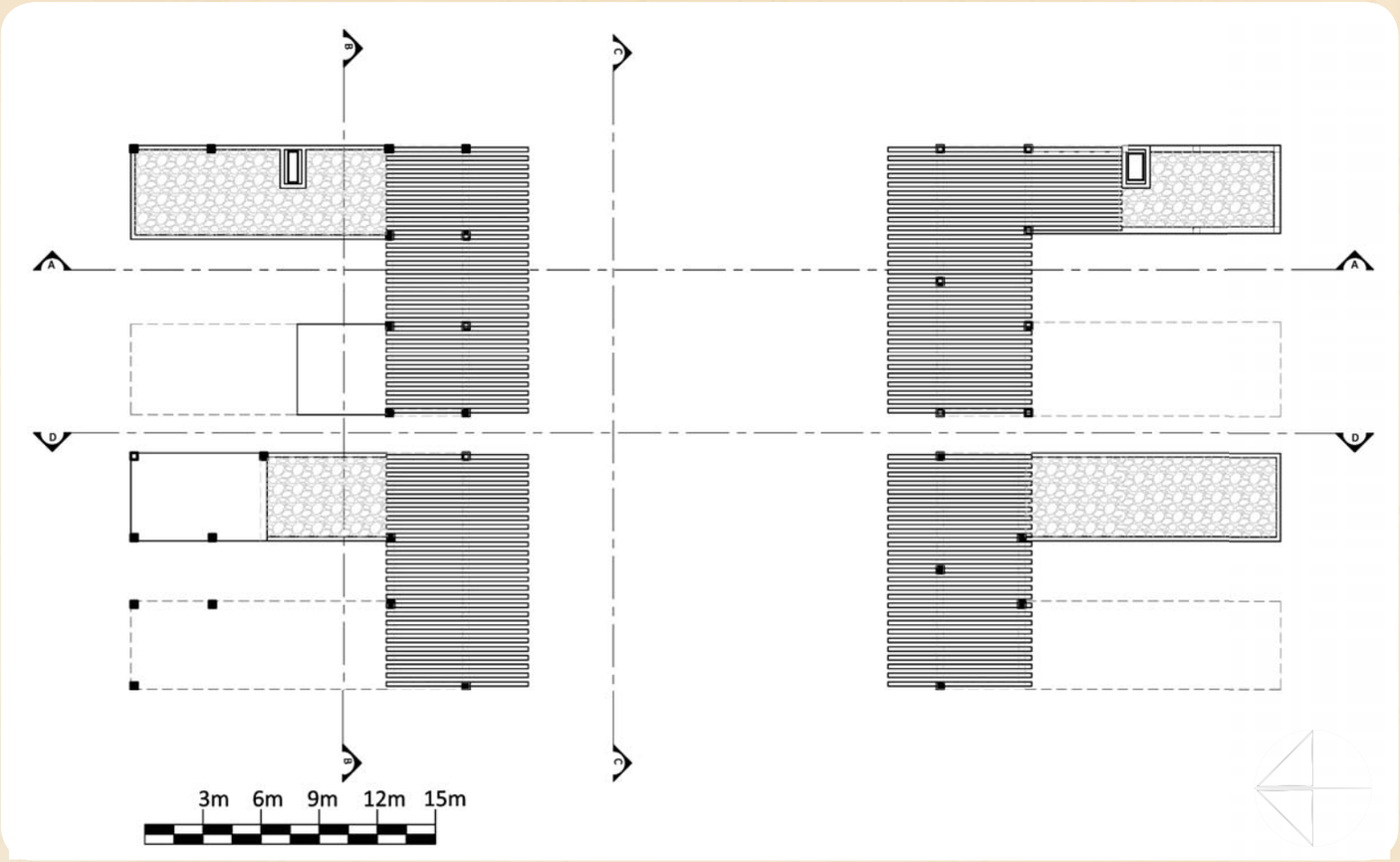
THIRD FLOOR

D. Stairwell
H. Green Roof Garden
I. Internal Playground
G. Balcony

Third Floor Plan

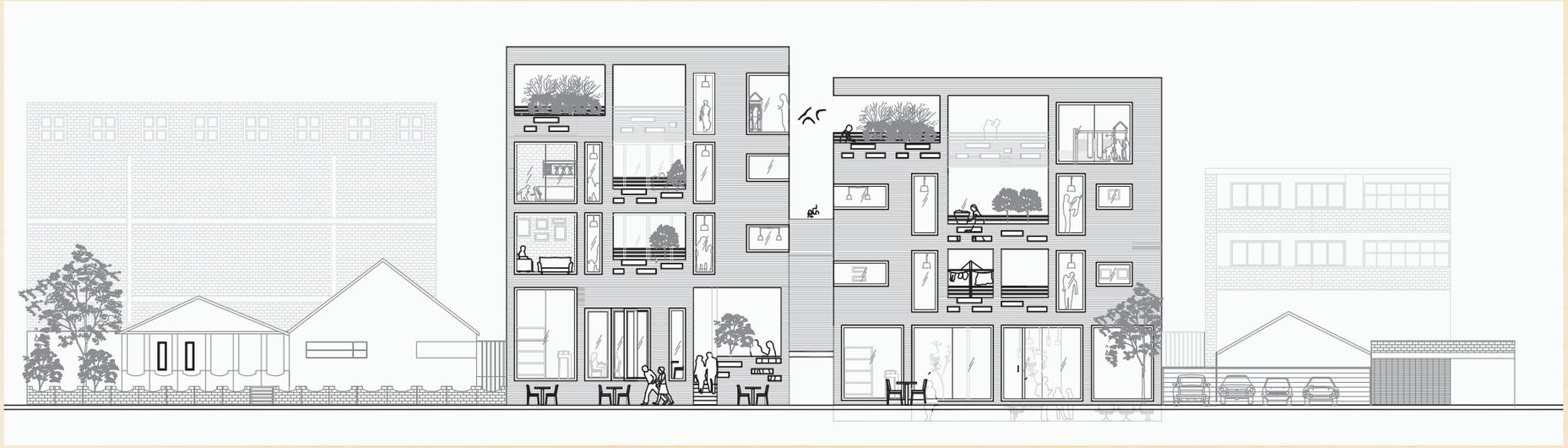
Section C

FOURTH FLOOR
Roof Plan



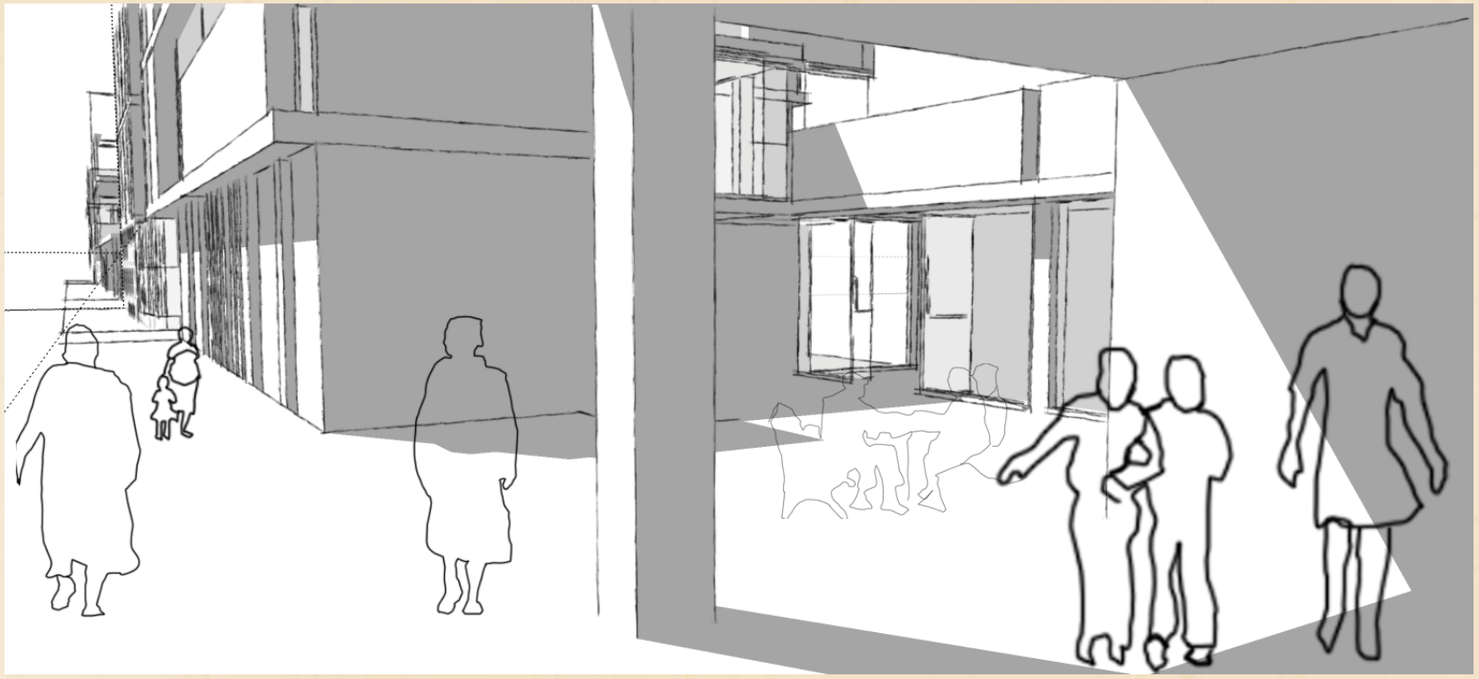
Fourth Floor Plan (Roof Plan)

Section D

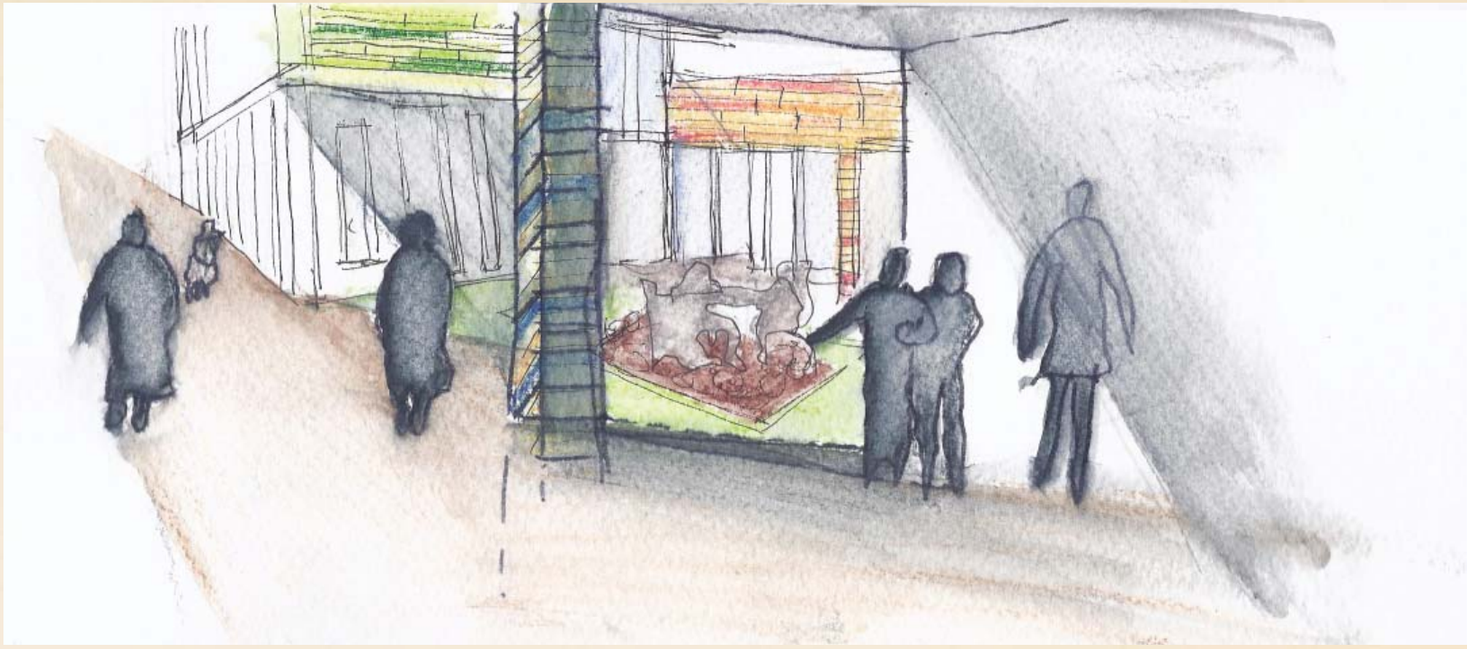


South Elevation

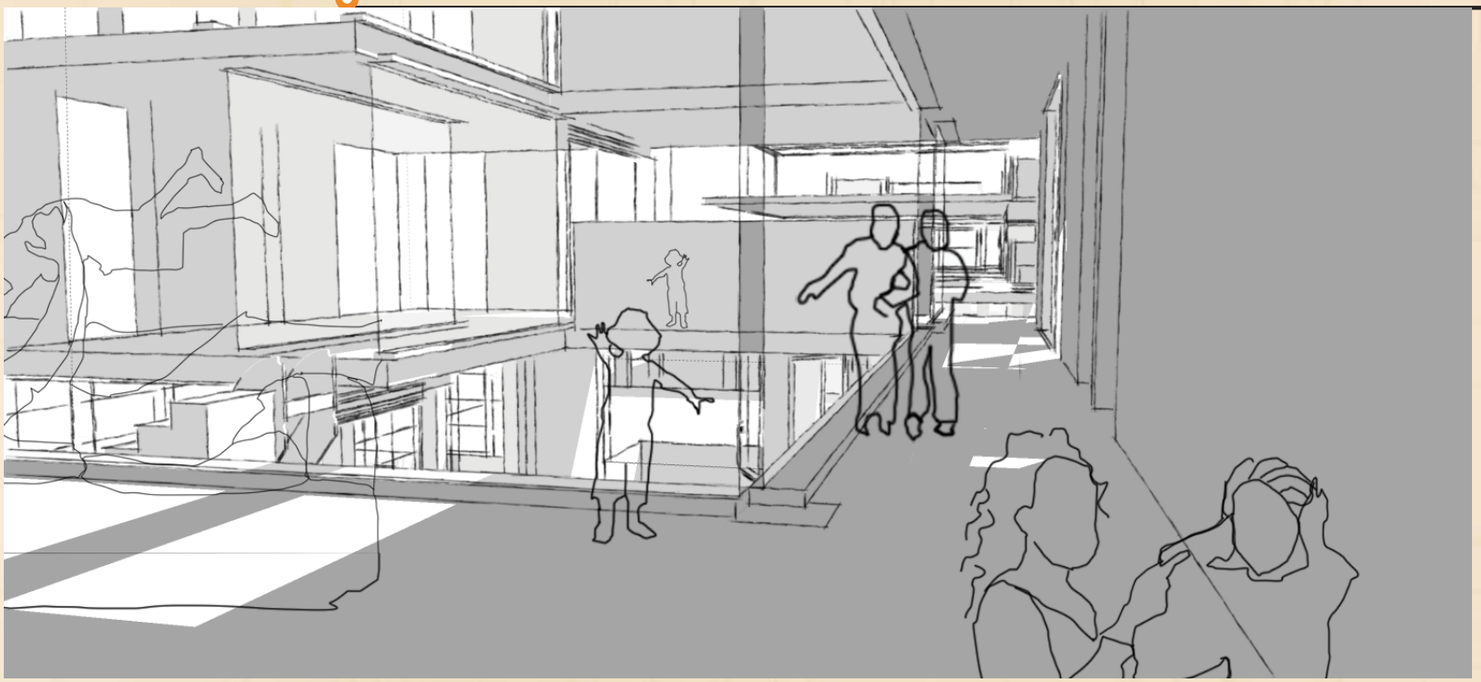
Section E



Perspective One: Caregive Program courtyard, internal street view



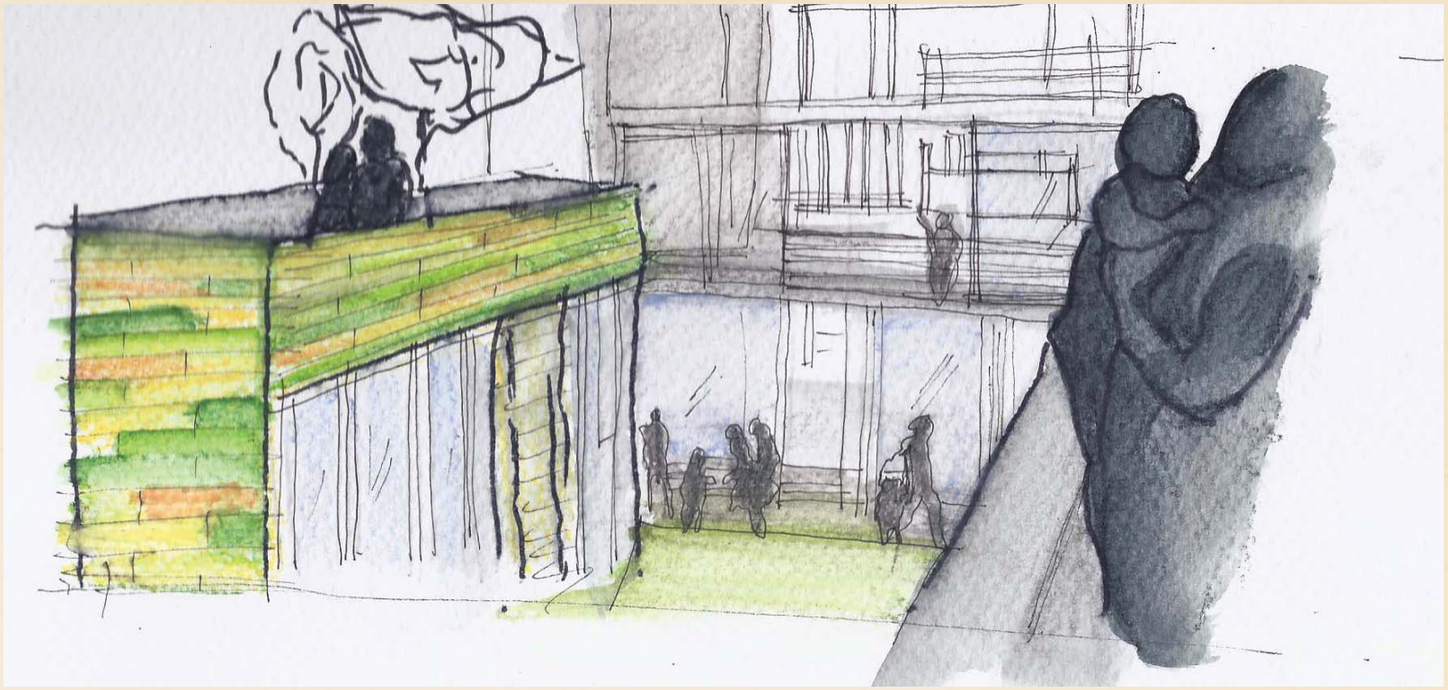
Hand Rendered Perspective One



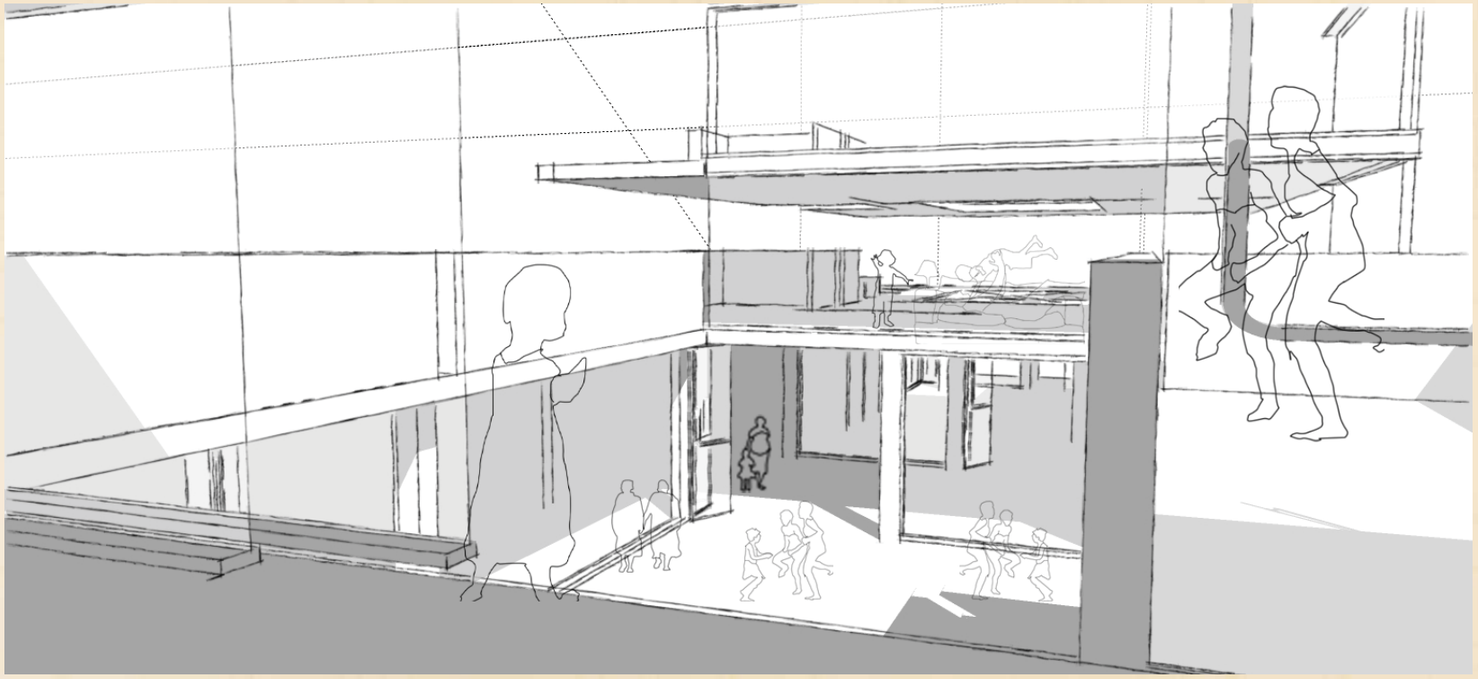
Perspective Two: Private Home, internal view from loungue to courtyard

Hand Rendered Perspective Two

Perspective Three: View from level one playscape

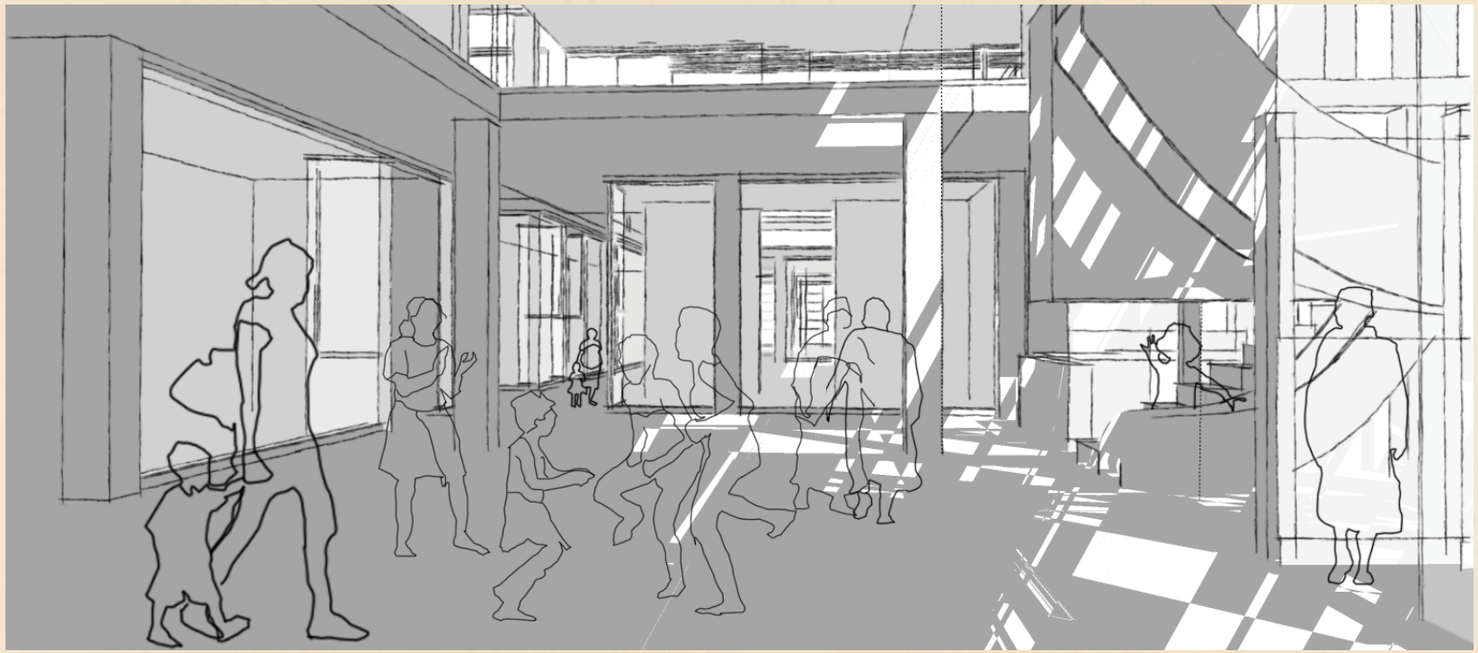


Hand Rendered Perspective Three



Perspective Four: View of Central Children Courtyard from private home above

Hand Rendered Perspective Four



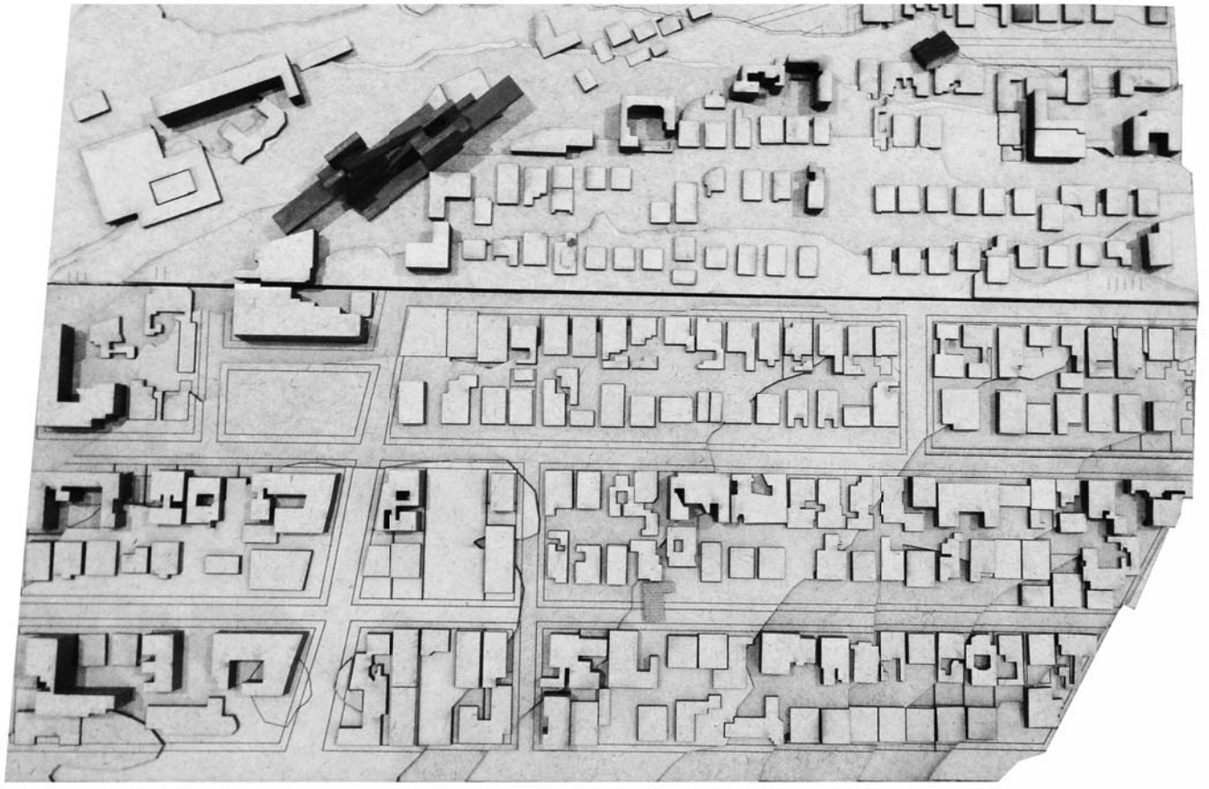
Perspective Five: Central Childrens courtyard at ground level

Hand Rendered Perspective Five

APPENDIX of Model Photographs

1:1000 Yeoville Site Model: **Arial View**
1:1000 Yeoville Site Model: **East Perspective One**
1:1000 Yeoville Site Model: **East Perspective Two**
1:500 Yeoville Site Model: **Prototype Formation Model**
1:500 Yeoville Site Model: **West Perspective**
1:500 Yeoville Site Model: **South West Perspective One**
1:500 Yeoville Site Model: **South West Perspetive Two**
1:100 Building Model: **Internal Perspective**
1:100 Building Model: **Arial View**
1:100 Building Model: **North Perspective One**
1:100 Building Model: **North Perspective Two**
1:100 Building Model: **South Perspective Detail Street View**
1:100 Building Model: **South Perspective Street View**
1:100 Building Model: **North Perspective Street View One**
1:100 Building Model: **North Perspective Street View Two**
1:100 Building Model: **South Perspective Street View One**
1:100 Building Model: **South Perspective Street View Two**
1:100 Building Model: **South Perspective Detail Street View**

Site Context Models: Yeoville Boundary

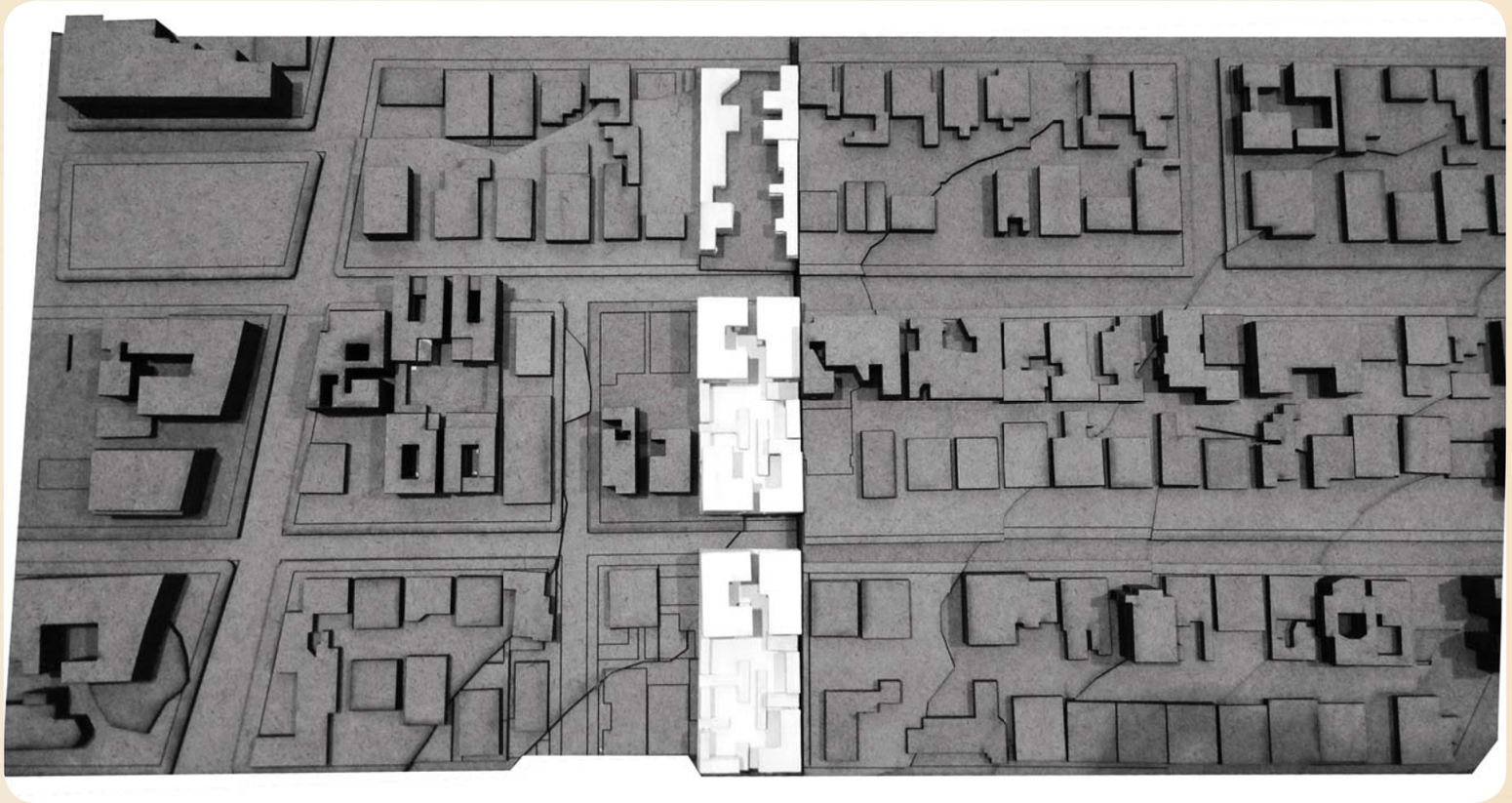


1:1000 Yeoville Site Model: **Arial View**

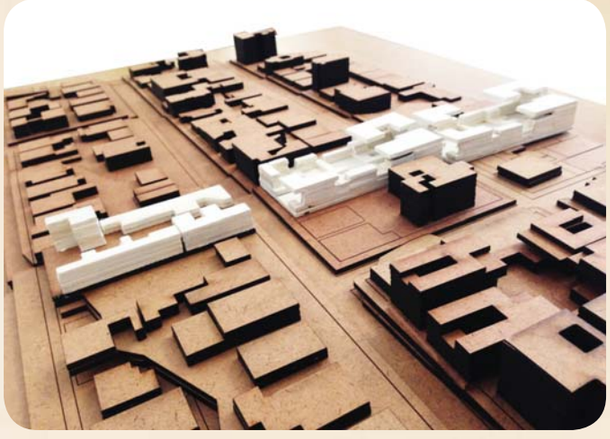
1:1000 Yeoville Site Model: **East Perspective One**

1:1000 Yeoville Site Model: **East Perspective Two**

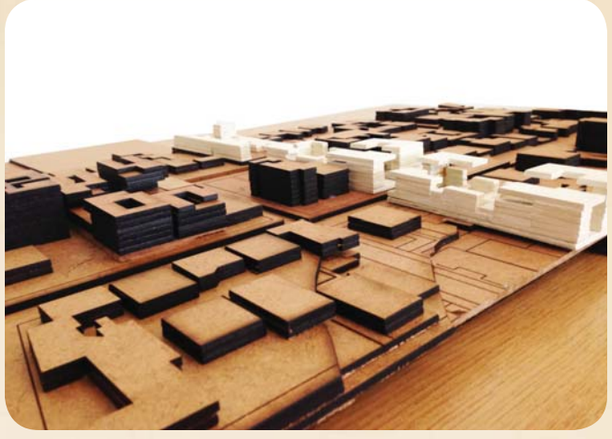
Site Context Models: Yeoville Boundary



1:500 Yeoville Site Model: **Prototype Formation Model**



1:500 Yeoville Site Model: **West Perspective**



1:500 Yeoville Site Model: **South West Perspective One**

1:500 Yeoville Site Model: **South West Perspetive Two**

1:100 Building Model: **Internal Perspective**

1:100 Building Model: **Arial View**

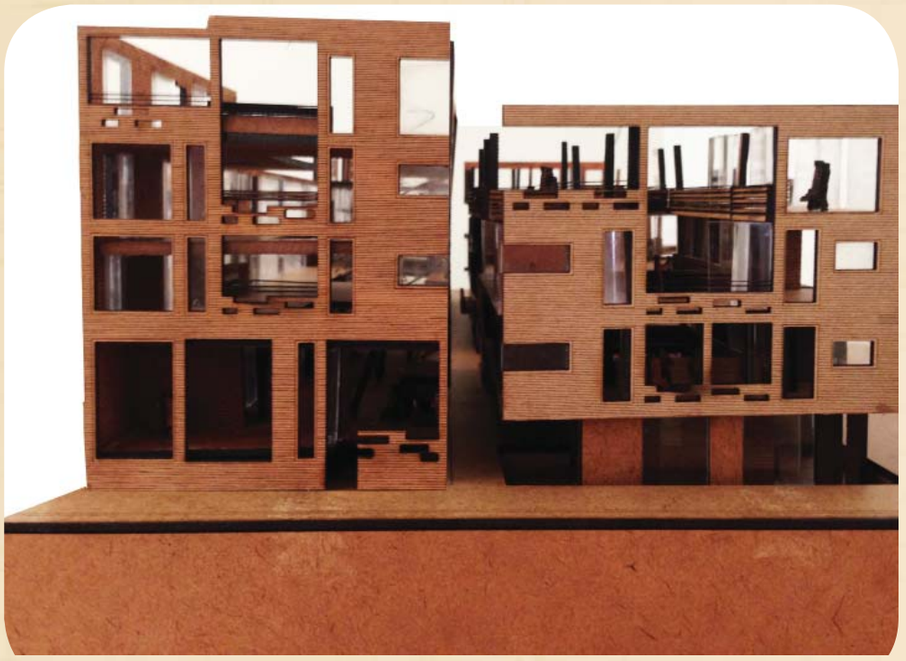
1:100 Building Model: **North Perspective One**

1:100 Building Model: **North Perspective Two**

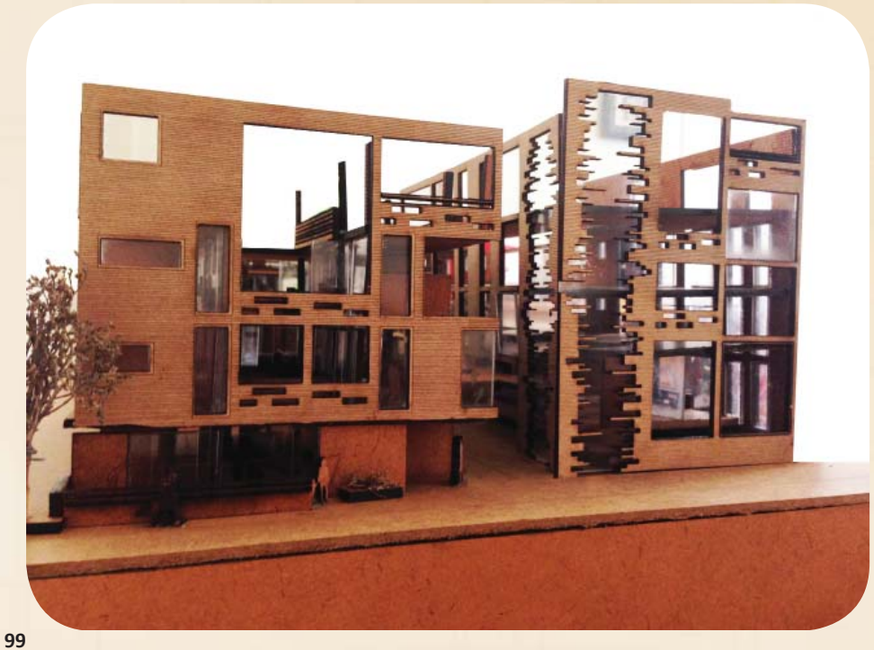
1:100 Building Model: **South Perspective Detail Street View**

1:100 Building Model: **South Perspective Street View**

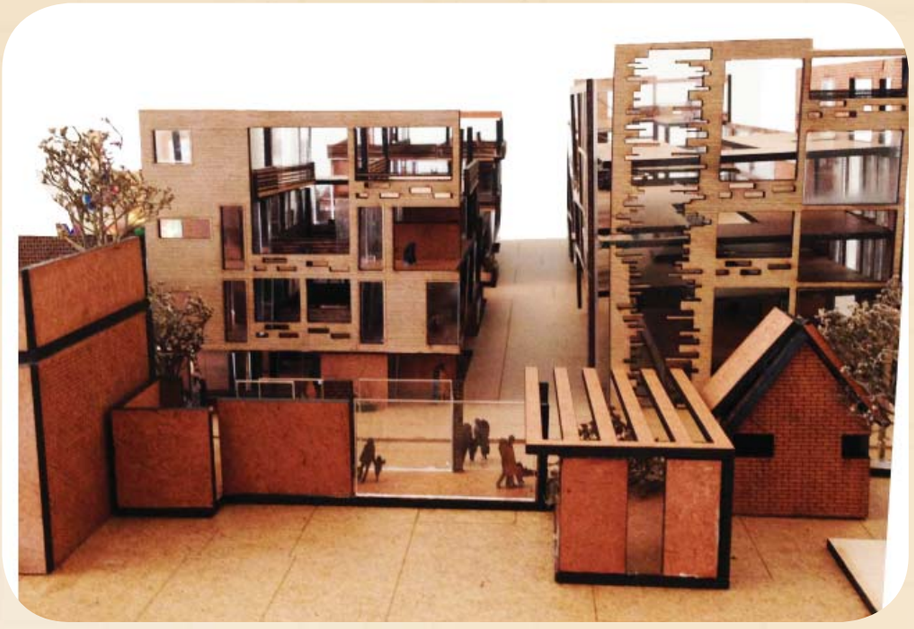
1:100 Building Model: **North Perspective Street View One**



1:100 Building Model: **North Perspective Street View Two**



1:100 Building Model: **South Perspective Street View One**



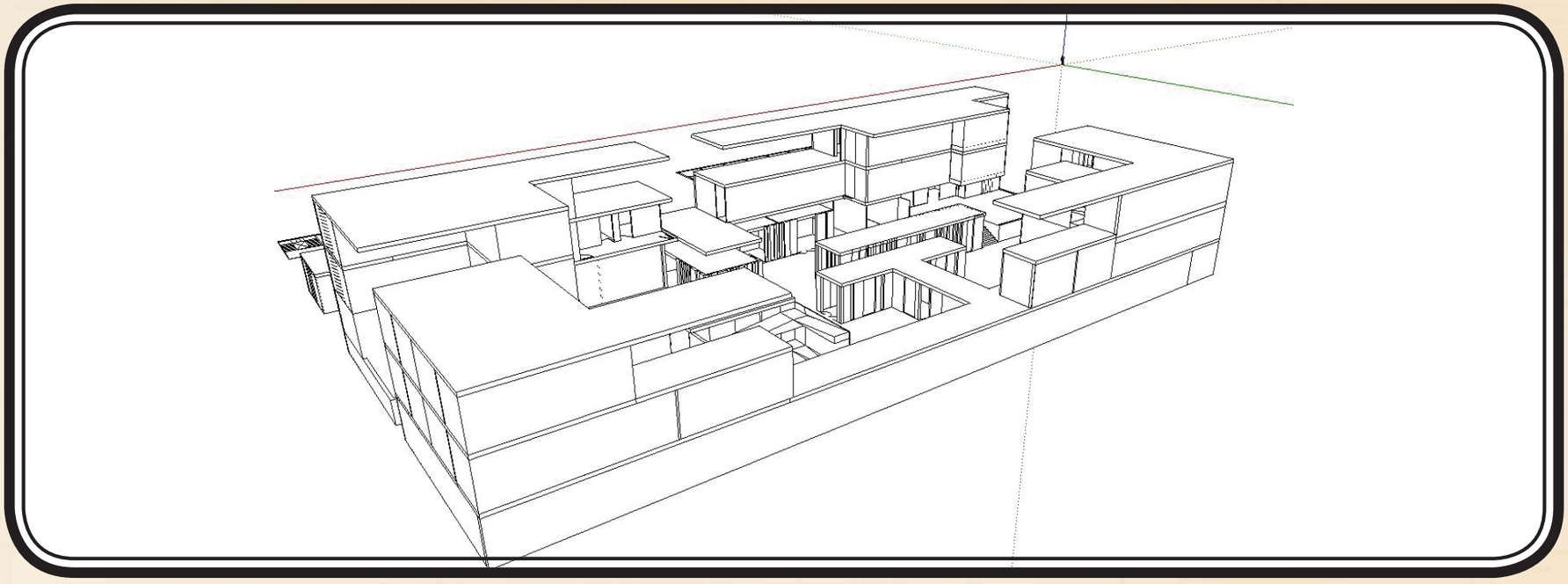
1:100 Building Model: **South Perspective Street View Two**

1:100 Building Model: **South Perspective Detail Street View**

Conclusion

This thesis has explored the concept of empathic architecture, as a means to provide a healthy developmental environment for orphaned and abandoned children. The concept draws on both fields of phenomenology and psychology to manifest a dialogue between user, building and environment. A broader understanding of orphan-hood and the methods of orphan-care was used to aid the literal application of the inter-subjective design process. This understanding was obtained through the physical experience of orphanages, along with an analysis of precedent studies. This process of examination highlighted a series of inter-related issues that needed to be addressed in order to propose a method in which to improve the way children, more specifically the orphaned and abandoned, are provided for in society.

These issues were summarised into two hypotheses: the first being that the orphans place in history is the child's place in contemporary society and the second, as a result of remedying the former, stated that it is contemporary society that has taken the orphan's place in history. The final architectural form is a culmination of inter-subjective design, influenced by the phenomenological theories of existential space and the psychological theories of children's cognitive development, whose purpose is to create the notion of dialogue. The Developmental Orphanage aims to represent an empathic piece of architecture through physically and socially restructured environments - which empowers the child, both non-orphan and orphan.



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Images

Figure 1
Adapted from: [Greek Architecture] 2009. [Image online] Available at : <http://library.brynmawrschool.org/architecture_greek.asp> [Accessed 23 July 2013]

Figure 2
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Figure 3
[T***raditional Luo Homestead***] n.d. [Image online] Available at: <http://www.johntyman.com/africa/11.html> [Accessed 25 July 2013]

Figure 4
[***Plan of Typical Luo House***] n.d. [Image online] Available at: <http://www.johntyman.com/africa/11.html> [Accessed 25 July 2013]

Figure 5:
Adapted from [***Illustration of a workhouse***] n.d. [Image online] Available at: <http://www.historyhome.co.uk/peel/poorlaw/building.htm> [Accessed 27 March 2013]

Figure 6:
Adapted from [***Illustration of a workhouse]*** n.d. [Image online] Available at:
<http://www.historyhome.co.uk/peel/poorlaw/building.htm> [Accessed 27 March 2013]

Figure 7
[***Illustration of a workhouse***] n.d. [Image online] Available at:
<http://www.historyhome.co.uk/peel/poorlaw/building.htm> [Accessed 27 March 2013]

Figure 8
Adapted from [***SOS Children's Village Jacarepagua***] n.d. [Image online] Available at:
<http://www.sos-usa.org/about-sos/where-we-help/americas/brazil/jacarepagua/pages/default.aspx>
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Figure 10
[***Increase in Double Orphans in Sub Saharan African due to HIV-AIDS***] 2010 [Image online] Available at:
<http://www.unicef.org/sowc06/pdfs/africas_orphans.pdf> [Accessed 1 October 2013]

Figure 11
[***Number of orphans ages 0 -17, by region, 1990- 2000***] 2010 [Image online] Available at:
<http://www.unicef.org/sowc06/pdfs/africas_orphans.pdf> [Accessed 1 October 2013]
Figure 12
[***Extended Families Traditionally Care for Orphans***] 2010 [Image online] Available at:
< http://www.unicef.org/sowc06/pdfs/africas_orphans.pdf> [Accessed 1 October 2013

Figure 13
Adapted from [***Illustration of a workhouse***] n.d. [Image online] Available at:
<http://www.historyhome.co.uk/peel/poorlaw/building.htm> [Accessed 27 March 2013]

Figure 14
[***The Otterlo Circles***] n.d. [Image online] Available at: <http://www.team10online.org/team10/eyck/ >
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Figure 15
Adapted from [***Augustus Pugin Workhouse plan 1836***] n.d. [Image online] Available at: <http://www.studyblue.com/notes/note/n/slides/deck/6242192> [Accessed 27 March 2013]

Figure 16
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Figure 17
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Figure 18
Adapted from: Van Eyck, A., 1954-1955. ***Nagele School Playground*** [drawing] In: Lefaivre, L. and Tzonis, A.,(1999) ***Aldo Van Eyck Humanist Rebel***. Rotterdam: 010 Publishers., p88

Figure 19
Adapted from Van Eyck,A., 1960 . ***Aldo Van Eyck, Orphanage, ground plan*** [drawing] In: Lefaivre,L and Tzonis,A.,(1999) Aldo Van Eyck Huminist Rebel, 010 Publishers, Rotterdam

Figure 20
Van Eyck, A., 1942-1944. ***Parts of the Orphanage ground plan*** [drawing] In: Lefaivre, L. and Tzonis, A., 1999. ***Aldo Van Eyck: Humanist Rebel***. Rotterdam: 010 Publishers., p109

Figure 21(a)(b)(c)
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Figure 22 (a) (b)
Adapted from: Van Eyck, A., 1960. ***Orphanage, ground plan*** [drawing] In: Lefaivre, L. and Tzonis, A., 1999. ***Aldo Van Eyck: Humanist Rebel***. Rotterdam: 010 Publishers., p107

Figure 23
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Figure 24
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Figure 25
Anon.,2003. ***Quinta Monroy Social Housing Project in Chile*** [Image online] Available at: http://www.architecture-buildings.com/quinta-monroy-social-housing-project-in-iquique-chile-by-elemental/view-quinta-monroy-exterior-front/>
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Figure 27
Maestrello, S. 2007 [***man and son in Elemental unit***] [photograph] In: Cumberlidge, C. and Musgrave, L. 2007. ***Design and Landscape for People: New Approaches to Renewal***. London: Thames and Hudson Ltd., p208

Figure 28
Elemental, 2003. ***Quinta Monroy Plan Elements*** [Image online] Available at: <http://www.architecture-buildings.com/quinta-monroy-social-housing-project-in-iquique-chile-by-elemental/view-quinta-monroy-zap-elemental-conjunction/> [Accessed 18 October 2013]

Figure 29
Elemental, 2003. ***Quinta Monroy Plan to Section*** [Image online] Available at: <http://www.architecture-buildings.com/quinta-monroy-social-housing-project-in-iquique-chile-by-elemental/view-quinta-monroy-zap-elemental-conjunction/> [Accessed 18 October 2013]

Figure 30
Adapted from: 4D and A Architects, 2010 [drawing] In: Anon., 2012. ***Building with Boxes***. Earthworks Magazine [online] June/July Issue. Available at: <http://earthworksmagazine.co.za/projects/building-boxes/)> [Accessed 2 April 2013]

Figure 30 (a)
4D And A Architects.2010. ***South West Elevation*** [Technical Drawing] In: Anon., 2012. ***Building with Boxes***. Earthworks Magazine [online] June/July Issue. Available at: <http://earthworksmagazine.co.za/projects/building-boxes/)> [Accessed 2 April 2013]

Figure 30 (a)
4D And A Architects.2010. ***Section*** [Technical Drawing] In: Anon., 2012. ***Building with Boxes***. Earthworks Magazine [online] June/July Issue. Available at: <http://earthworksmagazine.co.za/projects/building-boxes/)> [Accessed 2 April 2013]

Figure 30 (a)
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Figure 31
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Figure 32
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Figure 33 (a)
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Figure 33 (b)
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Figure 35
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Figure 39 (a)
Phasha, P., 2011 ***Untitled*** [photo-map] In: ***Being Young in Yeoville*** [pdf] Available at:
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Figure 51
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Figure 57
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Figure 62 (a)(b)
[***Section and Plan of Haarlemmer Houttuinen Housing***] n.d. In: Herzberger, H., 1991. ***Lessons for Students in Architecture.*** Rotterdam: 010 Publishers., p50

Figure 93
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Figure 94
Nirmal, M. 2013. ***Untitled*** [image online] Available at: <http://www.archdaily.com/334237>
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Figure 104
Anon., 2013 [***Playground***] [image online] Available at: <http://www.homedepot.com/p/Swing-N-Slide-Playsets-Green-Turbo-Tube-Slide-NE-4405-T/100040353#.UmhksRCMVmo> [Accessed 21 October 2013]

Figure 105
Anon., 2013. ***Slide One***[Image online] Available at: <http://www.playcraftsystems.com/images/catalog_2011/121/Components-Slide-Tube-Straight-R5.jpg> [Accessed 21 October 2013]

All photographs were taken by the Author unless otherwise referenced.

Abstract

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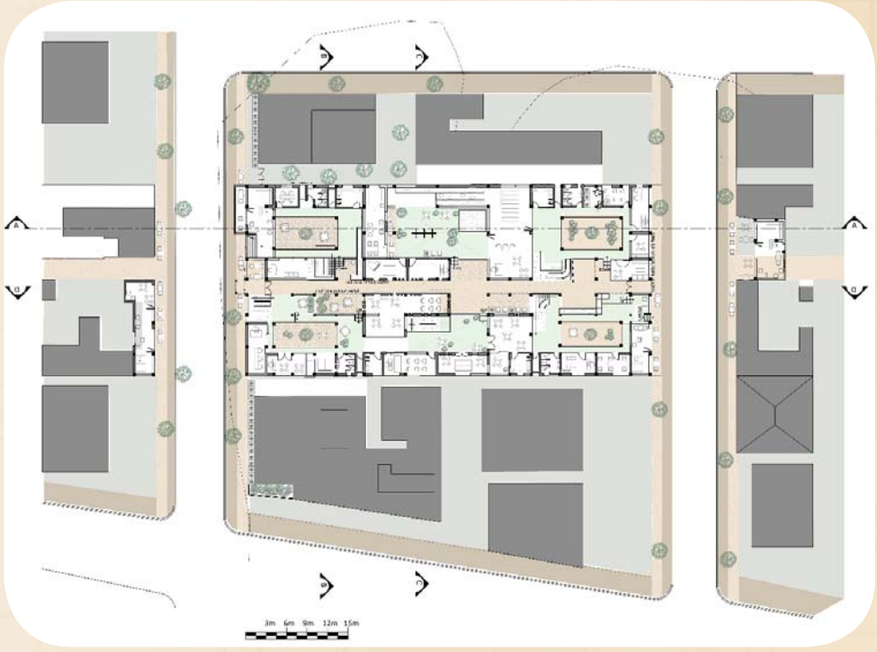
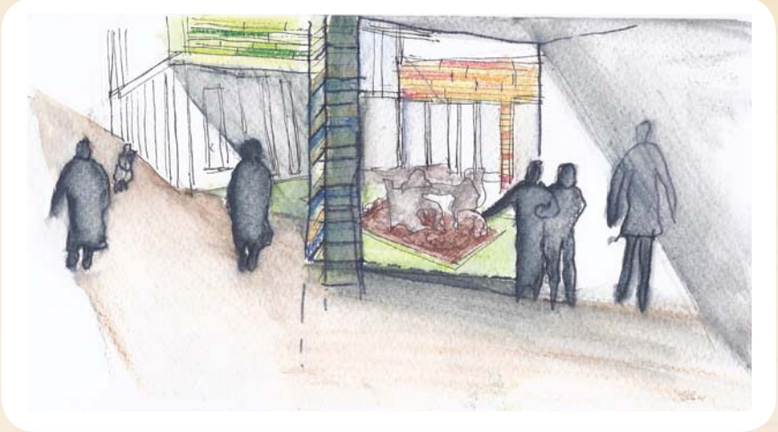
Reconsidering the Family Unit, augmenting the child through Architecture





Focussing specifically on orphaned and abandoned children, this thesis aims to merge theories of psychology and phenomenology within the scope of empathic architecture. Psychology has become a common consideration in architecture, as it addresses the psychological impact of building forms. Phenomenology examines the way a person experiences space and environment. Architectural theorists have discussed how phenomenology is the process of orientating oneself within the environment, whilst psychologically the orientation process is cognitive and it is the brain that generates a perception of space, thus providing a balance between a person and her environment. Empathic architecture is the physical representation of this balance, as it is able to evoke an emotional dialogue with the user, who in turn identifies a connection between both building and environment.

Through inter-subjective processes, this thesis explores the orphaned or abandoned child's place within contemporary society. It observes how the built forms, programs and external environments (which provide methods of orphan- care) are either a pro-active or reactive portrayal of how these children are being provided for. A further examination is made on how society is accommodated within the city and the possible improvements are proposed, with respect to caring for the orphan child, through the reintegration of the community. The main conclusion that can be drawn from the thesis is that, through the combined application of psychological and phenomenological principles, it is possible to create empathic architecture which meets the needs of the user. This user is then able to connect with the building and environment and thus create the basis for communal reintegration. This thesis concludes with the Developmental Orphanage for Children; a building which provides innovative methods of community integration, centred on the child user, that aims at facilitating new approaches to the conventional prototypes of institutional and residential suburban building models.