Children on the Streets
-welcoming daycare in the
city environment

A Practicum Submitted to the
Faculty of Graduate Studies
In Partial Fulfilment of the
Requirements for the Degree of
Master of Landscape Architecture

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Abstract: Daycares near city centers use public streets every day. This practicum looks at how spaces on a commercial street could be modified to help daycare participants become more comfortable and more involved in their surroundings. A literature review was conducted in order to unearth how young children grow and learn, the role of play in their growth, their perception and use of space, the unique role that public space plays in a child's introduction to its world and current ideas about designing outdoor spaces for children. All of these issues are discussed in order to lay a foundation for the analysis and exploration of a commercial street frequently used by one Winnipeg daycare. Caregivers and children's concerns are taken into consideration in the final suggestions for street modification. Safety, access, comfort, wayfinding, belonging, understanding and delight are factors of street design that are presented as being important to the caregiver and the child. Some suggestions are made for paving design and various other street details. Two sites along the street are chosen for more intensive design modifications.

Acknowledgments

I would like to thank my family for supporting me throughout this project; my parents for many hours of babysitting and proof reading, my husband, Eduardo, without whose support and encouragement it would never have been completed, and my children, Jonathan, Jessica, Makaria and Nikolas, who provided an ever present inspiration and reminder of the project's purpose.

The Ellice Avenue daycare[1] that provided an example in the study deserves thanks and commendation for always being willing to help me, even though they were concerned about what my study would do to their reputation. I especially want to thank Karen, the daycare supervisor, for her time and willingness to help.

I would also like to extend a special thank-you to my final commitee, Professor Ted McLauchlan (Chairman), Professor Charlie Thomsen, and Professor Richard Perron, for their invaluble advice and direction and to Professor Alf Simon who headed the practicum through it's reasearch phases.

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[1] They asked that I did not mention their real name.

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Prologue

I knew a woman who was the caretaker for a core area apartment on the corner of a mid-sized street. She needed the job to make ends meet, but it meant that she could not leave the block during the day. Her active two year old would not stay within the four walls of their one bedroom apartment, so the two of them spent many hours playing in the patch of gravel just outside the apartment door.

There are many mothers, like her, who despite their best efforts find it difficult to absorb the stresses created by the confines of poverty, the alienation of the city center environment, and the care of small children. Families that rely on subsidised daycares to look after their children, and the caregivers that work with them also struggle within a physical environment that is uncomfortable if not hostile. It is in looking for ways to make their lives and the lives of the little ones they care for a little better that I embarked on this study of daycares on city streets.

Chapter 1

Introduction

As an adult society we try to hide young children away from the street. Our planners and designers create safe little pocket parks hidden away from the dangers of traffic and pollution, but the children still use the street. Yet the streets are the viens which circulate the life blood of the community. Young children instinctively know this. They are magnetically drawn to the street. The two to six year olds of the Ellice Avenue daycare use the streets around their daycare every day, if not with the daycare workers, then as they come and go with their parents or older siblings. These streets are an integral part of their every day surroundings.

One in five children in Canada live below the poverty line. Most of these poor families live quite a bit below.[1] The majority of the children at the Ellice Avenue daycare, in Winnipeg's west central area, receive a subsidy for their daycare fees. [2] This indicates that many of these children come from families that struggle to make ends meet.

Poor children suffer from the extra stress that economic problems place on their families. Psycho-social (mental and relationship) problems which might otherwise be under control are aggravated by the economic situation, making home life more likely to be unstable or abusive.[3] Special effort is needed to invest in the lives of poor children. A better designed street cannot give a child the kind of care it needs, but it can help to take stresses off of care givers. A well designed street can provide stimulation, can support communication and can show the child that it is a welcome part of the human community.

The street which the Ellice Avenue daycare uses most is not a quiet residential lane, but a mid-sized commercial thoroughfare. There are spaces along it

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[1] The Canadian Council of Social Development Review found that the average Canadian family living below the poverty line were $8,300.00 below the poverty line.

[2] The daycare director, Karen, commented to the writer that most daycares in the area, including the one she supervises have trouble filling any of their non-subsidy spots. It is a policy in Manitoba to allow each daycare a certain number of subsidised spots, and then a number of non-subsidised spots.

[3] The poor child may not receive nurturing, positive mental stimulation, communication, the chance to give and receive love and to be taught about being a part of society, because it's caregivers are not able provide these things. These are issues raised by the National Longitudinal Survey of Children and Youth which showed that children who are poor and well parented do at least as well as children who are middle class or wealthy but poorly parented. Dr. Morin of the Hospital for Children in Toronto, commented that children below the poverty line are 3.5 times more likely to display conduct disorders, and antisocial behaviour .(CBC radio, Morningside, January,1997)

which provide information, interest or delight, in a safe, accessible manner. There are also spaces which do none of the above. If the worst of these spaces were changed into positive spaces, the street could increase it's positive influence and alleviate some of the stresses on the young children and their caregivers.

The street is a complex place. The issue of children on the street brings up apparently conflicting goals. Ideas of what is safe for young children often seem directly opposed to ideas about how they need to be stimulated to grow and learn. In order to make suggestions as to how a commercial street could be made better for young children, it seemed important to look at what recent research has revealed about the needs of young children as they relate to the physical environment. This age group does not clearly articulate its priorities to civic decision makers, but meeting it's needs is nevertheless important to all of society.[4]

Overview of Chapters

Much of the information presented here has implications well beyond the scope of this practicum and may apply to caregivers as well as designers of children's indoor and outdoor spaces. It seemed important to make a wide ranging report in order to place the streetscape design within the context of the purposes of caregivers and the design goals of other spaces used by young children.

The analysis of street spaces used by a Winnipeg daycare is found in chapter 7. The subsequent suggestions for modifications to Ellice Avenue, the adjacent commercial street are presented in Chapter 8. Chapters 2 - 6 provide the context of background research that is a basis for the decisions made and the priorities set for the street modifications. As this information will be of more interest to some readers than to others, the following is an overview of the contents of each of these chapters.

Chapter 2 deals with the social and physical realities that daycares are working within. As more and more families need two incomes to cover costs young children

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[4] In financial terms, money spent on high risk children at preschool age ends up saving society much more by the time the child is an independent adult. The Perry Preschool Project, done in Michigan, took children with a number of risk factors. It put the children in a well planned preschool program, for five half days a week and included a home visit once a week . These children then went on to regular schooling. The project followed them until age 27. By this time the state had saved $7.16 for every $1.00 spent in terms of the percentage of money saved on decreased criminal activity, highschool drop-out rate, teen pregnancy and welfare usage. In addition four times more than average were making $2000.00 or more a month and therefore contributing to the tax base. More and more research is proving that it is important to make sure that children have a good start early in life.

are increasingly introduced to public life through the institution of daycare. Regulations require that daycares have at least 75 sq. ft. of accessible outdoor space per child. However, these spaces are often poorly designed or, as in the case of the Ellice Avenue daycare, unusable due to constant vandalism. Even where private outdoor space is usable, most city daycares regularly use the public facilities around them. In older neighbourhoods the immediate environment is often rich and full of stories. In order for the daycares to take full advantage of this richness, the street must become a place that is seen as safe, accessible and comfortable.

Chapter 3 looks at the role that space, particularly public space, plays in the growth of a young child. The young child's primary caregivers are key to how a child is permitted to act within space. The controls or encouragement from the caregiver and the design of the space itself are heavily influenced by cultural and socioeconomic factors. When children are first introduced to a space, they rely heavily on the knowledge and reassurances of the caregiver to guide them. The stimulus level that a new space provides is high, regardless of it's complexity. Young children tend to be more impressed by the activity and people within a new space than by the space itself. In time the the child gains confidence and mastery of the particular space or of the type of space, (eg. all playgrounds). If a space is designed with the child's access and safety in mind the caregiver can recognise the child's knowledge of the space and can allow more freedom. A space or space type which is well known to the child is endowed with an element of ownership and of control. Designers should keep in mind that children are not only different from adults in the way they perceive and act in the spaces around them, they are also different from each other, in the same way that one adult is different from another.

Chapter 4 looks at ideas about children and play. When allowed to, children play all the time and wherever they are. In order to understand what types and levels of play behavior can be accommodated in a commercial street setting, play itself must be understood. Play is usually divided into motor play, involving movement; functional play, involving exploration and testing of objects; constructive play, involving building activities; dramatic or make-believe play; and games with rules. Different types of play have been tied to types of learning or emotional development in the child. Research shows that certain types of play environments foster certain types of play. Adults involved in children's play can help to increase the complexity and duration of play situations. The presence of

adults can also allow a wider range of activities. Designers for young children's play spaces should be conscious of the adult and allow observation and access to the child. Creating rich places that can sustain the diversity of play is a challenging task.

Chapter 5 looks at specific age-related play activities as they are connected to places for play. Toddlers (roughly 18 months to 3 years) and preschoolers (roughly age 4 - 5 yrs.) function at very different ability levels. Whether pushing newly acquired running skills to their limits or testing every newly acquired treasure with all five senses, toddlers are always hungry for more. It is a challenge to create spaces which permit these intense and varied explorations, but also provides spaces for quiet retreats, all within the umbrella of safety needed for such inexperienced explorers.

Toddlers gradually develop into preschoolers. Four and five-year-olds take their new abilities and knowledge and begin to explore them on more abstract levels. Speech, make-believe, use of visual symbols and an interest in "big" questions about death and God, are trademarks of this new stage. Although spaces to develop physical abilities and blow off steam are necessary, they are relatively easy to provide. The challenge is to create spaces that allow for complex social interactions, transformations, constant new discovery and an introduction to the workings of the adult world. Nature has many constantly changing properties that can be invaluable in creating this type of richness in outdoor places.

Chapter 6 looks at places where children play, both designed and non-designed. Playgrounds and play structures are used more by preschoolers than by any other age group. However they only account for a portion of any child's play time. Design philosophies for playground spaces have evolved from traditional swings and slides, to comprehensive play structures and finally towards a system of play zones for different types of activity. Nature spaces and road spaces are non-designed play spaces that preschoolers use. The natural world should be part of a child's life from an early age. Roughed-up meadow and bluff types of environments are appropriate play areas for preschoolers. Traffic poses a big problem in street spaces, which otherwise contain many attractive features for play. Some traffic taming strategies are discussed. Winter transforms all these environments, bringing

a new set of challenges and opportunities to designing for children.[5]

All of these chapters form a background of ideas which are the context in which the street modification's are suggested. Although older people in the community remember better times and places, the young children only see what is there now. Even if all that is achieved, by modifying the street is a few less stressed daycare workers or parents, a few less auto-pedestrian accidents or cases of frost bite, and a few more children who take pride in where they come from, the process would be well worth the time and money it takes. This project is an investment in the future.

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[5] Although it was originally the intention to add a chapter dealing with site considerations such as wind, pollution and drainage, time restraints have required that it be omitted. Some good resources on this topic are Carolyn Francis' chapter on " Daycare outdoor settings", People Places -Design Guidelines for Urban Open Space , Thomsen and Borowiecka's CMHC publication, Prairie Winter Play Patterns, and Band Anne Whiston Spirn's chapter on "Better Air Quality at Street Level", in Public Streets For Public Use.

CHAPTER 2
THE INSTITUTION OF DAYCARE

Daycare is a government regulated institution which supplements the tasks of looking after and socialising the youngest members of society; a task traditionally done solely by the family and immediate community.

Today, roughly one third of Canadian children age five and under require supplemental care for thirty or more hours a week.[1] This number continues to grow[2]. In Manitoba, nearly 60% (54,100 children in 1988) of those under five live in large urban centers of 100,000 or more.

Two parent families comprise 82.4% of families with children in Manitoba. Often both parents work, not out of choice but out of necessity. Where the woman is the sole parent, finances are often even tighter, and the need for full time child care becomes more acute.[3] Many single parents bring their children to the Ellice Avenue daycare while they attend the University of Winnipeg, or Adult Education classes. Both educational institutions are located on the same street and bus route as the daycare.

When a child spends most of her day being cared for by a non family caregiver outside the home, the age-old system where a child ventures out from the home into the world is disrupted. Yet the child still needs to learn the skills of functioning safely and effectively in public space. The daycare is increasingly significant as a location from which the child begins to understand the workings of

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[1] There are four different of publications connected with the Canadian National Child Care Study that were used in the writing of this chapter. They are all referenced in the bibliography, but as information tends to overlap from one publication to the next all references to the information shall be in the form (CNCCS, 1992 -93). However, most of the information mentioned above can be found in the Manitoba Report.

[2] In 1992, 57% of married woman with children less than age 3 were employed, up from 40% in 1981. Those whose youngest child was age 3 - 5 with jobs rose from 46% to 62% in the same time period. Despite this there has been very little real growth in family income since the early 1980's. (Statistics Canada, Cat.No. 89-5923 E, A portrait of Families in Canada.)

[3] In Manitoba, lone parents accounted for 17.6% of all families with children in 1988. In Canada the percentage in 1992 was slightly higher, at 20%. In 1991 women headed 82% of these families . Lone parent families are one of the poorest groups in Canada, in 1990, 62% lived below the low income cut off set by Stats. Canada. Such families are also less likely to own any of the tools that make life for families easier, such as, a car , their own home, or a washing machine, computer or VCR.
(Statistics Canada, Cat. No. 89-522 E, Lone Parent Families in Canada. / CNCCS, Manitoba Report.)

the world around him.

Daycare Choices

In Canada, even though need for supplemental care is increasing, the institutional daycare is not seen, by parents, as the most desirable system. Whether for a few hours or as a regular full time arrangement, family and relatives are the preferred supplementary care takers. This is particularly true for those children under eighteen months of age. (CNCCS, 1992 - 93)

"Care by family and relatives" is a category which describes a number of different types of arrangements. Children may be looked after by parents who work at different times of the day, by grandparents, aunts or uncles, or by older siblings. Although cost is certainly one factor fuelling the popularity of this type of care, in many cases keeping the child within the family, especially during the first years of life, is basic to human desires, and the structure of human society.

Unlicensed family daycares are also used by Canadian families fairly often. Of preschoolers age 18 months to 5 years, 18% are in this type of arrangement. Unlicensed daycare has the advantages of great flexibility and lower rates over licensed daycare. Unlicensed daycare is usually provided in a home, with a maximum of five preschoolers or infants being cared for. The care giver's own children are often included among the five. The atmosphere is generally very personal and quality of care is very much dependent on the care giver. In this type of arrangement it is fairly easy to find a care giver with a similar cultural background to that of the child.

Licensed family daycares appear to provide a best-of-both-worlds situation. The program, caregiver and facility are monitored by the daycare authorities but the atmosphere is still relatively like home and allows for more individual attention. There are relatively few facilities like this available in Canada, so the percentage of children attending them is very small.

In Canada, only 10% of those 18 months - 5 years old and 3.2% of infants in daycare, attend daycare centers. The number of hours per week that each child spends at licensed daycare is higher than at other forms of care. Children from new born - 5 years in licensed daycare spend an average of 30 hours per week at the facility. Many of these children, particularly in the inner city, come from low

income families. In such families, the financial need for government subsidies, together with the lack of licensed family daycare available, make daycare centers one of the few possible care options. Relatively high fees at licensed daycares mean that when families no longer qualify for subsidies they seek other forms of care for their children. Generally, daycares in Winnipeg's core area do not have any children attending who are not subsidised.[4]

Among the experts there is disagreement as to what type of arrangement is the best for the child. Prescott and Jones (1972), see the advantages of home child care situations, while Hill (CMHC,1980) sees the disadvantages and dangers of children in unlicensed situations.

Daycare Philosophies

"It appears that increasing numbers of early childhood educators have come to recognise that the child has a body, mind and feelings, and are defining the goal of preschool education as effecting developmental changes in all three." (Weinstein, 1987) While most daycares try to balance the range of childhood learning and development theories within their daycare system, there are still a wide range of philosophies available in daycare programs. Most governments require that every daycare has a statement of their program philosophy.

The purpose of outdoor play, even in daycares with the most adult centred philosophies of learning, is usually child-centered free play.(Francis,1990) This makes the problem of layout vs. philosophy less complicated in outdoor environments than in indoor ones. However program philosophy should still guide the form and content of outdoor space. "Children's self initiated changes in space utilisation play suggest that space and arrangement of material not only affect the child but let him know indirectly who he is supposed to be (or at least who we think he is) and how he is supposed to learn."(Yawkey,1990)

Daycare Regulations

The existing regulations governing the outdoor space for daycare centers in Winnipeg are:

<u>Regulation 9(3)</u>   Every licensee who operates a full time daycare center, ... which provides daycare for more than four continuous hours per day, or school age daycare center shall provide or have access to outdoor play space which provides for

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[4] Author's conversations with daycare supervisors in the central west area of Winnipeg, 1992-94.

a minimum of 7 square meters (or 75 square feet.) per child and accommodates the greater of 50% of the number of licensed spaces or 55 square meters (592 square feet.) and

> a) in the case of a full time daycare center ... which provides more than four continuous hours of care per day the space shall be located within 350 meters (1148 ft.) of the center.
>
> Regulation 9(5)   Where the outdoor play space in subsection (3) is not adjacent to the daycare center, the licensee shall provide safe access to the space.
> 9(6)   Where the outdoor play space is adjacent to the day care center and is owned or rented by the daycare center or the licensee, the licensee shall ensure that (a) the space is fenced; and (b) a minimum of 50% of the area is grass, sand or a similar surface.
>
> Regulation 10(4)   Every licensee who operates a full time daycare center ...for more than four continuous hours a day or a school age daycare center, shall provide outdoor play for children attending the daycare center on a daily basis except where:
> (b) wind chill conditions of more than 1600 watts per square meter, temperatures below -25C , or other forms of inclement weather exist.

Outdoor play is obviously considered important by these regulations. There are only a few limiting factors on the quality of the play space. The recommendation of 75 square. ft. per child is within research recommendations, although some researchers warn that when there is less than 100 square. ft. per child it must be very well planned in order to keep the child occupied for any length of time (Esbensen,'90). Similarly the regulation that half the outdoor space should be surfaced with a soft material and should be fenced follows research recommendations. However, there is nothing here to ensure the quality of the content or the layout of the space provided, whether public or private.

Winnipeg's Central Daycares

Many daycares in central Winnipeg use city parks as their outdoor play space. Even those with private space use public facilities on a weekly if not daily basis. as one daycare director mentioned, it is only reasonable to use the public facilities as they offer much more than what the daycare is able to offer within it's own space.

These daycares average a maximum capacity of forty children, and range between twenty and eighty. The only daycare which has eighty spaces, is located in a

residential zone in the very center of the city, across the street from Central Park.[5]

Advantages of an Urban Site

Many urban daycares only use public outdoor space. The quality and content of this space is therefore crucial to the functioning of the daycare and the growth of the children in its care.

"The total environment should be recognised and considered for children's play, not just parks and playgrounds....The diversity of surroundings accessible to children should include all aspects of daily life of the adult community and its natural and built surroundings."

(International Policy Statements on Play Spaces, Ottawa,1978)

Older city neighbourhoods are often much richer than recently designed places are. In the early 1980's, Moore did a number of studies in England with children ages 8 - 12 years.(Moore, 1986) The three areas under study were a housing development within an older city shaped by the industrial revolution, a new town of the late 1950's and a high traffic area within London. The new town was found to be over simplistic, with it's greatest asset being the non vehicular trails connecting different parts of the town. The housing development within the older city was found to hold the greatest potential for learning and child development because of the great variety of information, spatial types and findable objects. The London area was greatly hampered by access problem caused by the traffic. Although areas with potential for learning and development were there, the children were not allowed to get to them. From this two important points can be drawn. The first is that new developments are sometimes over simplified and can be without the richness of history, detail, or usable objects that older places have. The second is that no amount of richness and variety is of use to a child unless it is accessible and perceived as safe by caregivers.

Richness in older areas of the city is not only present in the history of the physical environment but also in the richness of activities present. Cooper Markus, after qualitatively studying the environments that her landscape design students grew up in, concluded that children brought up in suburban, designed developments did not favour that type of environment as adults. This contrasted to those who grew up in areas of nature, forest or farm, and those brought up in the

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5 information obtained from Child Day Care, Manitoba Family services, 1995.

city. It appeared that the poverty of environmental information in the suburbs and the separation between working life and family life resulted in the distaste for the suburb in later life. In contrast, her students told childhood stories of forages into nature or observation of adult working life with intense personal involvement. From this she concluded that such experiences were of extreme significance, even into adult life. [6]

There are areas near the center of Winnipeg where the edge between public and private is full of interest and information. There are other places, like the back of the University of Winnipeg, which do little more than present an undifferentiated wall of brick or metal to the person on the street. One example of a place which involves the passer by is the West End Cultural Center, on Ellice Avenue, at Sherbrook Street. Although the building fills it's entire site, the walls are covered with colorful paintings of dancing people and other simple but expressive motifs. My daughters were taken there by their babysitter when they were two and four years old. Ever afterwards they recognised the building with a sense of ownership, remembering the people that were part of that event.

In many ways a daycare situated in a city neighbourhood has opportunities to draw from the richness of its existing surroundings. Cities are, by definition full of people and events. Cities are also full of a wide variety of different places. The challenge which daycares encounter is in obtaining access to these places and events within reasonable levels of safety and comfort.

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[6] Sebba's more recent research, comparing adult and children's favourite places, might qualify this conclusion slightly. Sebba concludes that the significance of experiences with nature is not apparently important at the time, but becomes significant as a symbol of what it felt like to be a child within such a situation.(Sebba, 1991.)

Chapter 3
The Significance of Space for a Young Child

Children's growth and development, emotional, physical, mental and social, are affected by the physical and social environment that the child is in. If designers are to be successful, in taking on the task of designing developmentally supportive physical environments, it is important that they understand how a child develops and what role the physical environment plays in that development.

"Research shows clearly that the first four or five years of a child's life is the period of most rapid physical and mental growth and of greatest susceptibility to the environment."(Hill,1980) Many studies have been done, not only on how children develop, but on how the design of their environment affects that development. Although not all developmental theorists can agree on the exact ways in which children's growth is affected by the physical environment, there is no doubt that children's behaviour and identity is affected by what is around them.

There are several areas of study which supply information to this end. Geography, planning, developmental and environmental psychology ,and anthropology all contribute. Although their spheres cross, each discipline comes at the problem from a different angle. Developmental psychologists and anthropologists tend to see actions as the result of the child's "personality", stage of development or cultural imperative, whereas environmental psychologists and planners tend to see the environment as the cause of differences in action. (Garling and Valsiner,1985) Geographers tend to study how people use, understand and categorise the environment. (Garling,1985) As it is a relatively new field of study the complexities of man-environment relations are far from being completely understood. However, general outlines of how children are affected by the complex world around them, are becoming clear.

Human Need - safety, access, and place theory

The human animal is very capable of adaptation. However, the goal of place-making is not to aim at mere survival, but to support the full range of human potential and experience. There are certain factors which must be present in an environment before positive growth can occur. Maslow's hierarchy of human

needs points to safety as second only to food and water, when considering what is essential to any human.(Maslow,1943)

For the very young child the most important signal of safety is the primary caregiver or the surrogate. As the child grows, increasing importance is placed on the security found in her physical environment. (Garling, 1985)

"Human beings seem to require a certain amount of familiarity with their surrounding before they can feel comfortable." (Driver &Greene, 1977 as in Beate, 1984, p.36) A physical environment that permits a child to act within it will leave her with a sense of familiarity. This familiarity includes aspects of possessing knowledge about a particular environment, being able to deal effectively within it and being able to predict consequences.

Place as a Cultural Phenomenon

There is no physical setting that is not a socio-cultural setting and vice versa (Rappaport, 1992) . For society to function well the physical environments and socio-cultural expectations of those spaces must support each other. Where cultural and physical setting are at odds, a young child will have trouble developing a functioning relationship with the places around him.

Throughout history humans have changed their environment to reflect and support changes in their cultural structure and values, and to mediate their social relationships. (Rappoport, 1992, Heidmets,1985) This alteration of environment ranges from the larger culture, (which constructs single family dwelling units when single families become the significant unit of group identity), to the personal level, (where the child refuses to share his chair with a friend).

Physical situations do occur where the users do not consider the environment to be supportive of their social structure. These situations are sometimes because the physical environment was formed during a period favoring a different social structure, or because the people in power have imposed a physical structure on the users in order to benefit or control them. Borklid describes such a case in her Swedish study of children's play in two housing developments . Here the parents of young children took them to the supervised play park because they believed that this was the best play situation. However, they would have chosen to have an appropriate play space closer to their homes. Similarly, on one of the housing estates Borklid found that 20% of all play activities occurred on areas that the children were banned from playing on, namely the manicured and landscaped

lawns. In this case the physical environment had not been constructed according to the children's socio-physical needs, so they disregarded the ruling body's decision. (Borklid,1985) Many cases of this type have been recorded. (Moore,1987, Borklid,1985, Rappoport,1992)

When the physical environment is in discord with the social structure then users will often fight to reinstate a structure that supports their social desires. However, when the discrepancy is consistent and severe, the society structure is altered to the detriment of the users. (Heidmets,1985) An example of this is the numerous cases where neighbourhood societies have been destroyed when re-housed in high rise apartments.   Such situations often lead to "vandalism, accident-proneness, non-participation, and alienation from the immediate life environment." (Heidmets,1985,p.226) The built environment works best when it supports social structure.

Society and Culture in Development settings

Culture's truth resides, "not in explicit formulations of the rituals of daily life but in the daily practises of persons who in acting take for granted an account of who they are and how to understand their fellows' moves."(Bruner,1987)
The young child's work is not playing. It is, to meet the "countless demands socialisation places on them."(Elkind,1981 in Johnson,1987) It is in meeting these demands, and forfeiting their own impulses and desires, that children learn how to function within society.

"Many aspects of people-environment relations are essentially cultural phenomenon- impossible to codify as truths for all time and all situations. " (Moore, 1987) As designers it is important to understand one's own cultural biases when creating physical environments.

To some extent children must learn to function, not only within their own culture but also within the dominant culture of the society that they live in. They must learn to adapt to change with a flexibility not required of previous generations. (Prochansky & Fabian, 1987) However, designers and caregivers should be aware that culture is central to how comfortable a child can be within an environment. The built environment is made up of socially determined cues. These cues dictate how it is socially appropriate to act. (Rapoport,1992) A young child is just beginning to learn these cues. If the cues in the home environment are contradictory to those

in the daycare there will be confusion as to how she is to function in the daycare environment.

Sometimes this leap between cultures becomes possible through a transformation in the built environment. An illustration of this is a case of a daycare serving Navajo children. The children in the daycare were not seen to engage in any imaginary play. Nothing in the middle class oriented daycare made any connection with the children's home lives. The kitchen in the daycare had little resemblance to the ones in their own homes where much of the cooking was done over an open fire. One day, purely by accident, the toys in the free play area were left up against the wall after cleaning. The Navajo children began to engage in vigorous sociodramatic play. Finally they could make an association between the toys in the daycare and the structure of their circular hogan home environments. (adapted from p.144, Johnson, 1987) In this case the two environments of home and daycare were too different to make enough connections to engage in make believe play.

Socio-economic differences make a type of cultural division between children of the same society. Strong differences have been found between children of lower classes and those of the middle class. Research done in the United States on the amount of sociodramatic play done in indoor and outdoor environments found that lower class boys and girls, as well as middle-class boys engage in more make believe play outside than in. This finding may have connections to how these groups of children spend their home life. It may also be connected to whether the indoor environment of the play center corresponds to the indoor environment that they participate in at home (Johnson et.al. ,1987.)

The caregiver as the facilitator between child and environment must find ways to make connections between culture at home and culture in the world. The physical environment of the daycare, and of the neighbourhood at large can make this task easier and more successful if it is put together with those connections in mind.

Place defining individual and society

Establishing Self Identity

As a child grows she establishes her place in society both through identifying herself with certain groups and differentiating herself from her socio-physical environment. Children come to know themselves through their transactions both

with a physical and a social world. One of the special qualities of the physical environment is that it remains stable so that it does not itself change, but only reflects a child's manipulations. This makes a particularly valuable domain for the development of sense of self. (Hart,1987). There are three distinct levels of this identification/differentiation. 1) The first is internal or personal control over environment, 2) the second, social openness or closedness (privacy), and 3) the third is the development of self consciousness. In all three, the physical environment is used to develop and express these three relationships to the self and to others. (Hiedemets,1985)

These developments start very early in life. One of the first words that children express, is "mine". She manipulates objects and social relationships through this one word. Learning what is **not** hers and where she is **not** to go is equally significant in her development of self. This expression of identity in connection with place deepens in complexity as the child grows. There is a great deal of emotion involved as a child declares, this is, "my house", "my daycare", "my room". This type of relationship to place not only occurs as an understanding of self but as a statement of who she belongs with. She recognises her social attachments in the statement, "this is our house".(Prochanski and Fabian, 1985, Hiedemets,1985)

Privacy and Special Places

"Children create places for themselves from at least the age of three and probably earlier. The earliest forms of places are found rather than built, they are imaginal rather than physical transformations. "(Hart, 1987) From the first found spaces it is a small jump to the movement and combination of such materials as sheets, beds, chairs, leaves, mown grass and scrap materials. The type of building is strongly influenced by the type of materials available . "In almost all cases, even with these young children, the architecture is co-operative."(Hart, 1987)

A.A.Milne was conscious of the use of special places from a very young age when he wrote this poem thinking of his son, Christopher Robin:

> <u>Halfway Down</u>
> Halfway down the stairs
> Is a stair
> Where I sit
> There isn't any
> Other stair
> Quite like
> It.
> I'm not at the bottom,

I'm not at the top;
So this is the stair
Where
I always
Stop.
Halfway up the stairs
Isn't up,
And isn't down.
It isn't in the nursery,
It isn't in the town.
And all sorts of funny thoughts
Run round my head:
"It isn't really
Anywhere!
It's somewhere else
Instead!"
                    AA Milne

One of the topics which is receiving attention in research is understanding the child's need for privacy. This is particularly important in the daycare situation. While the prevailing western culture teaches a need for personal control over private space, the daycare provides very little opportunity for this. In one study with kindergarten children (c.5 years old) it was found that the impossibility of having one's own place for play was related to the development of dissatisfaction with life conditions among the children.(Lunge,Pitk & Tukvikene,1983, in Hiedemets,1985) The children felt that life would be better if they could choose to play in a place that was all their own. This feeling was connected with the fact that spaces are used to mediate social relationships, and if the children did not have spaces that they could control they did not have a way of limiting access between themselves and other children.

However, children do find ways of creating their own private spaces. In a recent study (Readdick and Hansen-Gardy, 1994) it was found that 58 out of 100 children in the daycare under study felt they had special places of their own within the daycare environment. Of that 58 only 7 felt that their special place was their cubby. (This is the space which most daycares provide as the child's special place) Of the sixteen that had chosen outdoor places, there were no duplications, but in the indoors sometimes two or three children had the same special place. More of the children who had been at the center for a long period of time had a special place within the center. Children often controlled these special places by deciding who was allowed in or kept out. This study showed that there is a need among children

to create private spaces, claim ownership, and control social relationships through their control of space.

Place Identity

First experiences and first familiar places are central to the development of later " appreciations, values, preferences and attitudes,"(Cooper Markus, 1974)This applies to types of places and the objects within them. The feeling of stability, safety, and some degree of power over these first places will continue to affect the child's emotional development, into adulthood.(Beate, 1984)

Prochansky and Fabian (1987) emphasise that place identity,[1] or the "complex integrated defining 'image' of the physical world as [the child] has experienced it." is an important subset of self identity. The home, and increasingly the daycare, are the first places where this type of identity develops. Often, the next place with which a young child forms a relationship is the immediate physical neighbourhood.

The young child in the city is generally not let out into the neighbourhood by itself. It is always accompanied by an adult. This allows the child to establish a process of "safety" in the neighbourhood environment. The neighbourhood is a much more complex socio-physical environment than the home or daycare. The urban child must not only learn how to deal with the complexities of such an environment, and to enjoy the richness of the social and physical settings found there, but she must also learn those aspects of urban neighbourhood which threaten or present danger to her. The complexities of an urban setting, even more than a small town or a suburb, require mastery of environmental skills of understanding a setting, competence in using it, and control of it. (Prochansky & Fabian, 1987)

Gradual access is a vital ingredient in the assimilation of a place into a young child's identity. Gradual access can be created through the physical environment , with the traditional stages of movement from the house to the porch, to the front

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[1] Prochansky and Fabian take what they call "place belongingness" one step further than the more traditional idea of "place identity", which is a static connection to special places. They point out that self-identity, although it has roots in childhood experience and understanding, changes over the life cycle. To view self identity as necessarily, or desirably static is false. So too, to view place identity as statically connected to a single group of places is limiting. "Children look at the environment, physical as well as social, for ways in which to understand their surroundings, to satisfy needs, and in doing so to behave appropriately. All of this in turn contributes to a place identity in which competence in and control of the physical world is an emergent aspect of self identity."(Prochansky & Fabian,87) Once a child has learnt how to act in a place type, she will be able to use that information in other places of that type. For example an understanding of house in Canada, generally carries with it a process of entry. Once the child has learnt to ring the bell or knock and wait to be invited in, then she will be able to perform this method of entry at other houses.

yard, and finally to the sidewalk and street settings. In this scenario each stage allows retreat to the previous one when increased safety is required. Gradual access can also be created through the presence of a caregiver, in which case the person becomes the place of safety. The most successful situation would appear to be where both place and caregiver provide opportunity for exploration and retreat. This situation is the most desirable to both parties, child and caregiver. However, as can be seen in the Swedish community described by Borklid, (1985) the cultural and physical environment often hampers this progression.

Problems occur when neither physical nor social safety retreats are available. In such cases the young child is generally not allowed out into the neighbourhood. An example where this is true is for young children in apartments above the fourth floor. Children under five in this situation will often remain inside, except when accompanying an adult on an adult errand. (Cooper-Markus, 1974, Playground Association,1978)

Important to access and safety, both perceived and actual, is the ability to function effectively in, and to control, an environment. Where physical access is awkward and full of risk, with little opportunity for retreat, a caregiver will prevent a young child from exploring. Even when the caregiver attempts to be the element of safety within such an environment, the tendency is to reduce the tensions created by the environment by severely restricting the child's movements within it. Thus, before any other aspects of creating public environments which are supportive of young children can be considered, problems of access and safety (perceived and actual) must be addressed.

Generally, if environments are designed sensitively for physical access, and the presence of young children, the relationship between adult and child will be less stressful and more supportive.

Environments that Support Caregivers

Ultimately, regardless of the goals of the center it is the directors and caregivers that carry them out. "The centrality of the teacher's role in influencing children's behaviour has been demonstrated by studies of both preschool and elementary school classrooms... the young child is highly dependent on the adult for approval, direction and attention and shows strong tendencies to model his

behaviour on that of a nurturant adult."(Prescott and Jones with Kritchevsky,1972)

Increasingly researchers are recognising that the environment affects how caregivers and children relate to each other. "Tired or irritable teachers, apathetic, ,hyperactive or uninterested children, high noise level, and a large amount of teacher directed activity all have a high likelihood of being spatially induced." (Prescott and Jones with Kritchevsky,1972) There are two categories of problem with daycare environments which affect caregivers negatively. The first is the poverty of environment existent in crowded or over-simplified conditions. Such conditions create situations where children spend more time in fighting and disruptive behaviours, while caregivers direct much of their attention to discipline and crowd control (Rivkin,1990, Prescott,1972) The second set of problems arises when the goals of the center and the layout of the environment are at odds. This leads to a constant battle between the caregiver and the physical environment. (Moore,1987, Weinstein,1987) When a caregiver does not clearly understand the relationship between the environment and the goals, she may find herself giving directives which go against the center's goals.(Kritchevsky,1969 in Francis,1990) A common example of this is the center which states that outdoor play is essential but has very limited access to outdoor play areas.

During infancy the child needs adults who can give dependable nurture and patient physical care. These needs change during preschool, when the child needs adults who are friendly, but who are also strong and clear in their directives and capable of participating in and extending the child's enthusiasm for a widening world. Throughout, the child's access to the physical world is controlled and modified by adults.

The infant is still very dependent on the primary care giver to help them function within the environment.   If the caregiver is to allow the infant or toddler outside then the outside environment must have fairly easy access to the caregiver while also providing some areas which are developmentally appropriate for the toddler to roam in. This will reduce stress on the caregiver, and in turn on the infant.

Safety in the Outside World

If safety, both perceived and actual, is a function of how well an environment is known by the caregiver and by the child together with how much

control either party can assert over that environment, it should be possible to alter a child's environment so that it is, and is felt to be, safer. This table from Garling and Valsinger (1985,p.9) gives suggestions of where significant places in the child's life fit into the framework of possible control over safety. (If the caregiver in question was a daycare worker the categories of home and preschool, would likely be reversed.)

	controllable environment		uncontrollable environment	
	known to parent	unknown to parent	known to parent	unknown to parent
known to child	HOME	PLAYGROUND	YARD	PRESCHOOL
unknown to child	GARAGE	FRIEND'S HOUSE	STREET	NATURAL ENVIRONMENT

Fig. 3.1 - Controllable environments and Safety
- addapted from Tommy Garling, and Jaan Valsiner (eds.).(1985). Children Within Environments - towards a psychology of accident prevention.

Taking into account that the place terms used are general and that they would not fall into these categories in all cases, the table helps to clarify some of the common attitudes and behaviours towards different types of spaces. Home is obviously considered the most safe environment for children. Not only is it known to child and parent, but it is controllable by one or both parties. No amount of knowledge of an environment is is effective unless those involved can "exercise control over the environment and there is no way that they can do that unless the environment is predictable and if these regularities cannot be learned." (Valsinger,1985)

This is not to say that children should never venture into an area that is unpredictable. Adults often take guides with them when entering an unknown wilderness. The guide may be in the form of a map with instructions, or in the form of another person. When a child must venture into the unknown the best guide is a competent caregiver. This is particularly true where traffic is present. Instructions and map guides are also useful in making the environment safer. Preschoolers (3-5 years) are able to recall a mental series of landmarks if casually pointed out by an adult when following an unknown route. Children of the same age have also

shown ability to follow a route within a maze using abstract maps. (Spencer and Blades, 1985) Garling (1985) suggests that the design of environments with the aim of preventing children's accidents has been primarily focused on the removal of or the protection from injury-causing agents, whereas it should also be directed towards making environments comprehensible, predictable, and controllable.

This is not a new idea to design guidelines, however it has rarely been proclaimed as accident saving in scope. Prescott (1976,1985) has always advocated a clear circulation within playspaces, to prevent confusion and collisions. Signage has also been included in the design guidelines as being central, not only to comprehension of a place, but to risk management.(Moore et.al. ,1987) although care should be taken in creating such signs as children can be confused by the meaning of symbols if they are not explained by an adult. Another safety aspect advocated in design guidelines is the element of choice within play structures. This includes choice of levels of difficulty as well as the option to get out of a situation which the child is uncertain about.(Talbot and Frost,1989) This element of clear choice is instrumental in the child's ability to avoid accidents. (Clay inVernez Moudon,1987).

Parents tend to underestimate their children's abilities to make knowledgeable safety decisions. The child will tend to avoid situations where she is uncertain of being able to remain"safe". However, one environment where parents often overestimate the child's ability to safely make decisions is the street. (Spencer and Blades,1985) This problem is discussed further in the section on streets as play spaces.

A set of guidelines, first introduced by Jane Jacobs (1961) and Oscar Newman(1973) is encompassed in the idea of defensible space. The four original aspects of defensible space are:

- surveillance, or eyes on the street; indicating that where there are enough people watching activities in a space, they provide protection against vandalism and crime.
- clearly defined territory; architectural cues that determine what space belongs to the daycare. This definition makes it easier to keep intruders out.
- image and milieu; when the image is of a busy, well used space, others are less likely to feel they can move in and take over.
- safe zones; that a children's place be located near other "safe" activities, such as a school or church, and not near to seemingly dangerous places, such as

busy roads, large parking lots, or industrial areas.(Moore et.al.,1979)

Place Perception

It has long been believed that there are stages that children go through in forming mental ideas of space. Much of the understanding of these stages is tied into Piaget's theories of human development. Recent research has thrown doubts on whether the stages that a child uses to understand space occur in sequence (ie. accumulating complexity) , or are each used at different times in different situations. (Spencer and Blades,1985) The problem of egocentrism is centered in the child's lack of experience and skill rather than in a cognitive inability.(Bruner, 1987) So that while the child may be able to understand space as a three dimensional construct, it may be unable to use it and is certainly unable to express it as such.

Even in the expression of space, ability seems more dependent on experience than age. Hart (1979) found at least one four-year-old who could relate key places around his home in relation to the threshold and to each other, while he was elsewhere. Hart concluded that this understanding of space was created through the sheer amount of time that the child spent in these places, playing by himself and with his siblings. Hart also found that children in general had clearer mental pictures if they had more exposure to the environments around them. One boy who had particularly clear images of his environment in relation to others his age had a father who drove with the child in the front seat and spent time pointing out all the things that they passed. Finally, Hart (1979) discovered that kindergarten children had a much clearer idea of the relationship between their home and school if they walked rather than being driven between the two.

While a child may be able to cognitively grasp space in a fairly sophisticated manner and to use space to control social interaction, she does not relate to space in the same way that adults do. Adults in general and designers in particular are very visual in their approach to space. Adults have collected a childhood full of sensory information, and base their understanding of an object on the visual information combined with the years of sensory information already stored. Children are in the process of building this collection of sensory experience and need to be in closer contact with space in order to understand it. They depend much more on touch, taste, smell and hearing in order to understand their environment. These senses require a more direct contact with the environment.

A child will identify more with the people present and the action within a context, than with the space as a whole. (Olwig,1990) When asked what their favourite place was and why, 8-10 year olds did not choose in favor of spatial or visual characteristics but for activities that were possible, relationships that were supported or feelings that were sustained, such as love, security, or freedom, through the use of that space. (Sebba,1991)

This difference between how adults and children experience space becomes a problem when visually oriented designers, design a place for children on a flat square piece of paper. It is also a problem when the most appropriate places for a child to learn and play are labelled as unsightly and therefore undesirable by the adult population. (Olwig,1990) Research on playgrounds has shown that sometimes the visually pleasing sculptured technique of the designer in making a children's place does little more than the concrete jungle of the "traditional" playground in terms of facilitating children's play experience. (Hartle and Johnson,1993 , Weinstein and Pinciotti, 1988) The designer may know what is required by the child but may not understand how to break out of the visual language of her profession long enough to focus on the child's sensory, constructive and imaginative needs. (Olwig,1990)

Personality and Development

While young children relate to space differently from adults, they also have as much range in personality types as adults do. The under fives "are as much a collection of individuals, with infinite variety, as any other age group" (Clover,1990) Young children do not all react to developmental stimuli in the same way. This should not be surprising; different people are interested in different types of things.

Personality, a word used to describe a wide variety of phenomenon, is still a relatively elusive factor in developmental research. The most commonly accepted measure of cognitive style is field independence/dependence. The field independent child has an easier time finding a simple figure within a complex design. It is assumed that the child's perception does not get caught up and "lost" in in the total design. The field dependent child has trouble finding the same figure. Some researchers have found that field independent children sought out more objects to play with, while field dependent children were more people oriented. It is

clear that in make-believe play styles there are those, called dramatists, who are less object dependent and more verbal, while others, called patterners, are more dependent on being able to manipulate objects around them to create the fantasy. (Johnson, 1987)

When trying to create places for young children the important thing to keep in mind is that provision should be made for as wide a variety of personality types as possible. According to Gardener's theory of multiple intelligences (Yawkey,1989), each child is endowed at birth with specific genetic predispositions that evolve in interaction with environmental events producing differing levels of talent in specific intellectual domains. He identifies these categories of intelligence: "(1) logical-mathematical, (2) linguistic, (3) spatial, (4) kinesthetic, (5) musical, (6) intrapersonal, (7) inter-personal. Gardener believes that providing for exploration of each of these intelligences, within play environments will aid natural personality differences to emerge and develop.

Chapter 4

Development and Play

Play seems to be any activity which has no end purpose or desired result, but this definition becomes less useful the more that play is studied. Over the past century many adults have studied why children play. As with child environment studies the attitude with which researchers approach the study of play and the theories which are put forward seem to be closely connected with the researcher's area of study and social belief systems. There is a range of theories about the purpose of play. Purposes range from the processing of ideas and feelings, to modulating stimulus levels. An attempt will be made to explain some of the ideas about play which have gained support and which have some application in the making of places where children are likely to play.

Categories of Play

Before launching into theories of why children play it is helpful to define play a little more clearly. Generally play is placed in four categories: motor play, functional play, constructive play and dramatic play. Game playing with rules is sometimes used as a fifth category and sometimes included as a form of dramatic play. Most of these categories were laid out by Piaget. Constructive play was added to them by Smilansky in the 1960's. (Hartle and Johnson,1993)

Another way of categorising play is by the social situations in which it occurs; solitary play, parallel play, associative play, and co-operative play. In the 1930's Parten divided these types of play into the age groups when children are able to sustain the type of social interaction with peers required for each type of play. (Johnson,1987) At the age of two, solitary play seems to dominate. Gradually social ability increases until by the age of four full co-operative or social play (as it is often called) becomes a dominant type of play. However, all types of play are seen throughout the age range.

In research situations play is often described by combining Piaget's play types with Parten's social situations. Many researchers record the type of activity that they observe within a chart such as this one:

A sample Piaget/Parten Chart for recording types of play

	motor	functional	constructive	dramatic	games with rules
solitary					
parallel					
associative					
group or social					

Figure 4.1 - Piaget / Parten Observation Chart

As a researcher observes a child playing he records the type of play that occurred and the type of social situation it occurred within. For example over the period of fifteen minutes a 4 year-old child may be involved in 5 minutes of constructive parallel play building roads in the sand box, 4 minutes of dramatic group play as he and another child race their cars around the road made in the sand and 3 minutes of solitary motor play as he climbs as fast as he can over a near by play structure. He may spend the remaining 3 minutes in a non-play activity such a observing others.

Motor play is about physical co-ordination and exertion. It is often divided into fine motor activity such as tying or drawing and gross motor activity such as running or balancing. Gross motor is the type of play that is sometimes called "blowing off steam". Whether performed together or solo, this type of play is often seen as the most basic of play activities.

Functional play is closely tied to what some researchers call pre-play exploration. Pre-play exploration is done to gain information about a place or object. After enough is known about the object the child starts to manipulate the object to change or modify it or what it does. This is functional play. Novelty, complexity and incongruity increase the child's motivation to explore and modify an object or place.(Fein,1978)

Constructive play is play which uses materials to build something. It includes all those activities where there are a number of possible combinations or ways for

putting things together, such as playing with blocks or sand. It also includes those constructive activities seek a single solution, such as solving puzzles.

Dramatic play is often called make-believe. A child enters this type of play when the rules of the real world are suspended and they cross into the realm of fantasy. Symbolic play is closely tied to imitation and the concept of role.

Sociodramatic play, dramatic play within a group, is seen as the most complex form of play. The demand on social communication as well as the ability to transform objects or events is not possible for most children under three years of age. (Vygotsky, 78) A further development of this is seen as games with rules, one of the earliest of which is hide and seek. Such game playing is a type of make believe where the fantasy is suspended and the rules dominate. Many of the group games played into adulthood, such as baseball are clear examples of constructing a non-real situation within which to play.

The types of play that are dominant within a group of children are affected not only by the child's age, but also by caregiver's biases, ethnic or cultural tendencies, gender and, finally, what and who is available to them in their environment (Garvey,1977) One consistent finding, however, is that a richer and more complex environment leads to more functional, constructive and dramatic play, while a place where there is a smaller range of options leads to more gross motor activity, more play fighting and more complex social games with rules.(Fien,1978, Hiedemets,1985)

Play and Cognition

Cognition is the child's ability to know and understand the world. In the first years of life children develop rapidly both physically and cognitively. During the last thirty years volumes of research have been written on the relationship of play to the development of cognition. Some theorists support the relationship and others claim that play has no connection with cognitive development.(Johnson,1987) When designing places where children play it is helpful to understand how they learn through play and how the environment can affect their play.

Ideas About How Children Learn

Piaget's theory, developed in the 1920's and 30's, may still be the most influential theory of development in North America. Piaget states that for him, the

aim of education is to produce human beings who are able to come up with original solutions to problems. He believed that, "an education which is an active discovery of reality is superior to one that consists merely in providing the young with ready made wills...and ready made truths."(Lawton and Hooper,1978, p.26.) This aspect of Piaget's theory is appealing to people who work with the physical environment because it places high priority on discovery through physical interaction.

Piaget also set out a series of developmental stages that every child would pass through as their understanding developed. These stages were inborn in the child and were released to be developed as the child grew. The understanding was developed through interaction with the environment.

Piaget's views have been widely accepted as being important for application in education, particularly at the preschool stage. Learning based on the active manipulation of objects is emphasised over teacher directed learning. The teacher's task in such preschools is to choose challenges and provide materials which are appropriate for the developmental stage of the child. Motivation is given to the child but it is the child who teaches herself through discovery methods. Studies done to see whether this approach to learning at the preschool stage has lasting benefits have not found any lasting difference in children's cognitive abilities. (Lawton &Hooper, 1978)

Piaget's contemporary, Vygotsky while having much in common with Piaget, offered a different approach to understanding cognitive development.[1] Vygotsky's fundamental hypothesis is that the higher mental functions, the functions that set human's apart from animals, are socially formed and culturally transmitted. So,"If one changes the tools available to a child, (such as speech) his mind will have a radically different structure." (Vygotsky, 1978) as a result the functional learning system of one child may not be identical to that of another, though there may be similarities at certain stages of development.

Much of Vygotsky's emphasis was on how other people, peers and caregivers,

help the child to develop cognitively.[2] Part of this process is expressed in his theory of the "zone of proximal development". This zone is a system of measuring the level of a child's development. Vygotsky found that teachers working with children with learning disabilities often had two children who had achieved the same level developmentally, but while one was working on further achievements that were one year ahead of his present stage, the other was working on developments that were three years ahead. This difference in development between the stage achieved and the stage in process is called the "zone of proximal development"[3] . Vygotsky's theory was that development occurs when internal processes are awakened by interaction with people, teachers and peers. Once this learning is internalised it becomes part of the child's independent development.

Although both recognise play as being important to a child's development, the role which they believe play to take in that development is slightly different. Piaget sees play as a time when children go over and over concepts that they have learned in order to strengthen and consolidate them. Vygotsky sees play as a place where the concepts begin to take form.

Types of Development Corresponding with Types of Play

Recent research, done to find the connection between cognitive development and play, has found that certain types of play have unique connections to cognitive development.

Motor play and preceptual-motor development

The connection between development of physical skills and motor play is obvious but the importance of motor play in developing abilities which involve spatial cognition has received relatively little attention. However, support for its importance is growing. This group of skills includes body awareness, spatial awareness, directional awareness and temporal awareness of which the most significant factor is rhythm (Jambor,1990) Poor development in this area leads to a

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[2]Vygotsky, unlike Piaget, sees value in the "rote" teaching of symbols, such as math calculations and phonetic reading. He recognises this form of learning as a unique form of language use and an aid to the development of abstract thought.

[3] An example of this was demonstrated by American researcher, Dorothea McCarthy. She showed that among children ages 3 -5 there was a group of tasks which they could do unaided, and another group of tasks which they could perform with the help of a teacher. The second group of tasks was in the 5-7 year old range.

number of cognitive as well as motor problems later in life. Problems in reading, such as telling the difference between d and b, have been tied to poorly developed perceptual-motor skills. "Research studies by Haubenstricker and Seefeldt underscore the importance of motor needs, indicating that children who have poorly developed motor skills at the age of five will probably never, even with remedial intervention, develop efficient motor skills."(Hildebrand,1990 in Yawkey,1990) As much of the first two years of life is spent in practice and exploratory actions, such as those that build conceptions of self, space and time, caregivers must be involved in providing places for motor development and the freedom to explore movement.

Functional and Constructive play

Functional and constructive play seem to have a direct relationship to problem solving. Children who are allowed to play with objects with which they have to solve a physical problem, often find the solution without teacher intervention, just as well as those who are taught to solve it. (Johnson, 1987) Studies have also found that children who play with an object will be able to think of more creative, nonstandard uses for the object.

Make-believe or Dramatic Play

The types of play which have been found to have the most significant effect on affective, cognitive and creative development is sociodramatic play, (group make-believe) and to a lesser extent solitary make-believe.

Make-believe play has a number of effects on a child's ability to understand, to think and to create. Vygotsky contends that in make-believe play a child begins to transform objects into symbols, an ability which leads to abstract thinking and the development of language. Research supports the idea that children taught sociodramatic play increase their reading writing and speaking skills. (Johnson, 1987)

Other, more recent researchers have tested the connection between the ability to recognise conservation of quantity and the child's participation in sociodramatic play. 4 While some children made the association between the dramatic task and the

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4 The theory was that when children understand that they can change from themselves into a role, and back again, that they will understand that objects can change shape without changing content. It was found that sociodramatic play did help in conservation tasks. Perhaps even more significant was the finding that when the comparison between the object and the child's changing roles was pointed out, it helped some children's performance in conservation tasks.

conservation task without teacher or peer input, others , unable to understand conservation of quantity themselves, could be taught to understand.

Perhaps the strongest link between play and cognition is in the area of creative thinking. Dansky found that children who engaged regularly in make-believe during free play periods increased in their divergent thinking, while those who did not engage in make-believe didn't receive the same effect (1980 in Johnson,1987). In a rare study connecting play theory and environment, Susa and Benedict found that a more complex and object suggestive playground increased children's make-believe play and their immediate divergent thinking.(1994)

Many different types of play are needed if the child is to develop well on all levels. In the following figure Moore, Cohen, Oertel and Van Ryzin demonstrated how a variety of play behaviours are connected to developmental areas:

development	social-motor development	wheel toy play sports informal ball games
	motor development	gross motor play raucous play
	cognitive -motor development	sidewalk games fine motor play fine motor games
	cognitive development	number & letter games toy play arts and crafts constructive play
	social - cognitive development	fantasy play gardening & animals music & dance
	social development	observing others talking picnicking

Figure 4.2 - Types of Development and their Connection to Play Behavior (from Moore, Cohen, Oertel and Van Ryzin, 1979, in G. Moore, 1985)

As can be seen from this figure and the above information, a broad view of places

for children is needed in order to provide for their required range of activity. It is likely that there are few situations which can provide for all types of activity. As a result planners and designers for children's play need to view the total sum of community areas available to children in order to create places for play.

Play as an Emotional Tool
With Freud and the birth of psychoanalysis came the theory that children used play an emotional outlet for dealing with things that caused anxiety or fear in real life. In the early eighties a few studies began, once again, to look at the connections between emotional development and play. The results point towards confirmation of Freud's idea that children learn to cope with difficult situations through play by breaking them down and acting them out over and over. Using make-believe play "children create model situations which help them master the demands of reality."(Johnson,1987) People who work with children see this process in action frequently. When my children's grandmother died they used play as a grieving process, acting out the situation at different levels over and over until they seemed to accept and assimilate the new state of reality.

If the idea of dramatists and patterners is applied here, it would be likely that some children would need constructive props more than others. It is probable that some children would use constructive or functional play as a way of working through emotions. Still other children, or the same children, may use physical exertion, or motor play to help deal with emotions that are beyond social expression.

Arousal Modulation Theory and Play
One theory that seems linked to the ideas that connect play with emotion is the arousal modulation theory. However, the theory deals with play and arousal at a much more basic level than the coping mechanism described above. This theory, developed in the 1960's and 70's by Berlyne, and then Ellis, contends that play is caused by the drive in our central nervous system to keep arousal at an optimum level. (Johnson, 1987) If the arousal level becomes too high, for example, because of the introduction of a strange object, then the arousal can be dissipated through exploring the object and becoming familiar with it. Conversely, if the arousal level is low, a person will become bored. Play is seen as an arousal stimulus- seeking activity. Demonstrations of this theory at work can be seen at any playground.

Children become bored with sliding down the slide in the traditional manner, and begin to improvise. Introducing new ways of using the slide such as sliding down backwards, climbing up the slide and down the stairs, or sliding down in a train adds heightened stimulus to the activity.

This theory has a particularly direct set of implications for the design of play environments. These implications lead to similar goals in design as the calls by developmentalists to create more diverse play environments. When a play space does not provide sufficient stimulation children become bored, resulting in increased social interaction, but also in increased destructive and negative behaviour. (Johnson,1987,Hiedemets, 1985, Prescott,1987)

Having studied the use of playground equipment for many years, Mitsuru Senda has concluded that there are seven key design points for the structure of space that will help to sustain the stimulation and increase the complexity of play (See Appendix A). Even so , he warns that built play structures can only accommodate about 25% of children's play behaviour.

Roles of Adults in Children's Play

The adult caregiver is an ever present salient factor threading play, children and environments. When a caregiver is supportive of, or involved in, play many new dimensions and variations become possible within both the social and physical environment of the play.(Yawkee,1990) The design of the environment has specific, often predictable effects on the relationship between the child and the caregiver. Similarly, the attitudes and values of the adult have an effect on the play relationship between the child and its environment.

Francis (1990) noted that one of the greatest differences between designing for playgrounds and designing for daycare playyards is the guarantee of involved adult supervision. This is also true if the daycare is using public environments.

Increasingly researchers and teachers are finding that adults can help in the development of children's play. As dramatic play is developmentally important on many levels, many of the researched interventions have been in this area. When a child displays little or no make-believe behaviour, their make-believe play abilities can be taught and guided into greater complexity. The adult involved in children's

play can help development along several levels, including: imitative role play, pretend play with physical objects, pretend play with actions and situations, and persistence in play.(Smilansky 1968, in Yawkey 1990)

Studies have commented on the short duration of play events in young children's free play. (Thornburg et. al.,1985,Yawkey,1990, Susa and Benedict,1994) It has been suggested that this is largely due to the newness of the environments to the children, where the studies took place. It is clear that adult involvement in children's play can extend persistence along one line of exploration. (Yawkey, 1990 Johnson, 1987) Learning such persistence in play is a great help to children when they reach school age and are expected to focus and concentrate on tasks for longer periods of time.

One often overlooked aspect of adult involvement in role and pretend play is the provision of material from real life. Preparation for play includes experience of real life situations. Field trips and excursions can provide a rich vocabulary of roles and situations for the child to draw upon.(Yawkey,1990)

"Children at play need to be in control for the activity to be playful, enjoyable and beneficial."(Johnson,1987,p.85.) Adult involvement must be sensitive and never overtake the child in play or it can produce the exact opposite effect from what the adult is trying to create. (Johnson,1987, G. Moore,1987)

Designers can be sensitive to the caregiver's involvement in play by providing places where adults can watch play without being obtrusive and by providing places within play structures where adults can easily access play.

There are other aspects of design which can allow adults to improve play. The most important of these is openendedness within the play environment. An individual caregiver has the opportunity to observe play to the extent that they can see when it might be an advantage to make a space smaller or larger , or to add height to an area so that it can be a lookout. Ideas about moulding play space are prevalent in literature about adventure playgrounds. The "creative playground", supported as the preschoolers alternative to adventure playgrounds, still requires the constant presence of a playleader to accomplish it 's purpose, but allows for more of the space to be pre-designed.(CMHC,1980)

There are some aspects of the creative playground, such as the presence of loose materials or of a water source, which can be incorporated into playgrounds where there will be intermittent supervision by designated daycare leaders.

Situations are fairly common in Europe, where designated members of a community are in charge of loose materials for a certain number of hours each week, (Tony Chilton, Children's play in Newcastle-upon-Tyne, 1985). The guaranteed presence of adults during play allows for the use of loose parts and more flexible structures.

The 1990 National Standard of Canada <u>Guideline on Children's Play Spaces,</u> includes a section on supervised play areas. Included in this are many of the types of spaces which were formerly recommended in <u>Playyards For Preschoolers</u>, (CMHC,1979). Elements which are recommended for such spaces include; garden plots, loose materials, fire devices such as fire rings or barbecues, pets and animals, and water areas. Such elements are considered too dangerous or prone to damage and loss if used without supervision. With supervision they serve to extend the child's experience of the outdoors. Many of these activities are already part of indoor daycare programs. Cooking is done in ovens rather that over a fire. Plants are grown in pots, and tables built for water play are common. However each of these experiences has it's sensory potential diminished when it is removed from outdoor space.

It is clear that play and pre-play exploration consist of a diverse range of activity. Creating places that can sustain that diversity can be a bewildering task. It can also be exciting, particularly if the the designer has the chance to watch the excitement and total involvement with which a small child takes in the places around it.

Chapter 5

Age Groups and Design Opportunities

One of the most common ways of dividing children into groups is by age. Although development does not occur in a simple straight line, children do go through stages of growth within roughly similar time periods. In this chapter I have outlined some of the stages of growth by age and some opportunities for environmental experience that support each stage. This practicum is generally dealing with two age groups, toddlers, and preschoolers. (A section on opportunities for infants is found in Appendix D.)

Toddler (about 18 months - 3 years)

Toddlers, named for their side-to-side motion while walking or running, are in the process of becoming young children. They work to refine both fine and gross motor skills. Coordination can be seen developing as the child learns to turn pages in a book or hold a cup in one hand and a cookie in the other. Larger motor skills such as throwing a ball, kicking a ball and climbing the stairs unassisted are all developed during this period. Toilet training is often also achieved.

Possibly one of the greatest developments during this period is the use of speech. This development opens many doors to the child. Along with the ability to express herself comes the frustrations of not quite being able to get the message across. Emotions are often the cause of great tensions. Caregivers have a difficult task dealing with the temper tantrums common during the "terrible twos".

The young toddler begins the process of playing and interacting with peers, unassisted by adults. Often toddlers play beside but not with each other. This progresses to play with mutual regard during which the two children are obviously aware of each other's presence and may make eye contact.

Objects are often used in the development of social play. Focus on an object allows one child entry into a play situation with the other. The first step of social play is simple interaction, with one child simply reacting to the actions of another. Eventually by the age of three the child will learn to interact with other children so that simple reciprocal games such as chasing, or rolling a ball back and forth are common.

Imitation play increases in complexity for the toddler. Unable as yet to

imagine that one object is another, the toddler relies on real objects or imitations made for play. Real situations that the toddler has observed, are acted out. Most of the situations last less than five minutes.

For the toddler the world in all its intricacies are beginning to open up. There is much to be explored, discovered and imitated. Often outdoor spaces in daycare centers for this age group are notably lacking in variety and interest. (Prescott, 72) Given the toddlers predispositions to treating everything as food this is understandable, but is not necessary, nor desirable.

Chart of Growth and Development

The following page (figure 5.1) shows some of the areas of growth from the ages of one to two years. Children develop at different paces within each of the areas so that the time line is only approximate.

	1 year	15 months	18 months	21 months	24 months
Gross Motor Development		Goes up, one step with assistance Crawls on all fours alone Crouches when playing	Climbs onto things alone		Tricycle (pedals) Jumps with both feet Goes up and down stairs
	Walks - holding one hand then alone		Goes up stairs alone (holding on) Sits down alone		
known	plate coat shoes	Appropriate gestures for dressing Drinks alone from glass Scribbles when told to Points to what has been done	Takes part in dressing Turns over pages of book Eats unaided Seeks self behind mirror	Opens door Turns on light Approaches before climbing	Kicks (ball) Takes off shoe
tests	Puts cube in cup Pincer movement of thumb and forefinger	Stacks two cubes. Fills cup Pellet in bottle Fits in shapes ●	Stacks three cubes dumps pellet from bottle	Lines up cubes (train) ● ■	Imitates train Folds paper ● ■ ▲
parents		Play of many kinds when adult led Recognises after absence			
strangers		Suspicion --			
children (peers)		-----Parallel game-------	Explores: self others -------	(Sometimes aggressive: bites...)	
Language understanding	Take-give Defence Goodbye Bravo	Brothers and sisters Names of various objects	Orders (gather up, go and look, shut, sit, stand etc,) Many objects	tests Clothing 5 parts of body 3 different places	Listens to story
expression	5 words	Jargon	10 - 12 words Names pictures		100 words Begins to put phrases together (2 words)
	Motor functions - tactile exploration (accidents) →		Transports - stacks hides - finds →		Animistic or imitative play (dolls, playing houses) →
	1 year	15 months	18 months	21 months	24 months

Figure 5.3 - Development from 12 - 24 Months of Age - this schematic diagram is adapted from a chart by Nestlé, made for their infant milk program.

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Opportunities for discovery

Messy malleable materials bring delight to the eyes of any toddler. Water, sand , paint and clay, are perfect tools for constructive play and are best when there is no need to be careful or neat. The key here is the freedom to explore possibilities. Process is much more important than product. Anita Rui Olds (1985) recommends the provision of a mud room or wet room that can easily be hosed down with a spray of water for cleaning. Traditionally, outdoors has been the location of such elements as sand and water. Freedom from the need to keep things clean continues to make outside an ideal environment for these types of play. In Canada, the climate is a limiting factor on the extent to which discovery play is done outdoors, so sand and water play is often moved inside. Snow has the potential to replace these materials but only when the temperature is warm enough for the snow to be soft.

Opportunities for the development of dramatic play

The toddler enjoys the active parts within dramatic play. Going in and out of doors, and climbing through the window is as important as the story being enacted. Structures need to be strong enough to withstand such activity.

Make-believe play at this age is object oriented. Dress up clothes and pots and pans are favourite objects for play. Again the toddler is more interested in getting the clothes on and off, or pouring water from a jug to a cup than in putting the actions into a story context. Such activities add to the development of fine motor skills and encourage the development of sociodramatic play.

Opportunities for quiet activities

The toddler is beginning to learn to function in a social world. She will often find this experience too intense. At such times she needs a place of retreat. Retreat places have a number of uses - resting , reading, hiding - but one of their most important functions is allowing the child to observe what is going on without any pressure to join the activity.

Such places should be soft and welcoming, with a small scale and a comforting atmosphere. Some retreat spaces should be found just off the main flow of play, while others should be further removed. Outdoors these places can be made with plant materials and malleable surfaces such as sand or pea gravel. Often a roof of some type is a welcome addition.

Mitsuru Senda designs and builds a small structure in which the outside is a

climbable geodesic globe and the inside is a soft hiding place for two or three children. With this structure he ingeniously combines the two extremes of vigorous large motor play with a quiet retreat area, all within very little space.

Preschooler (3 or 4 years - 5 or 6 years)

The preschool child operates effectively within the adult world on a number of levels. Not only is it more competent socially than the toddler, the child is now in much greater control of its physical movements. It can dress itself. It can put together block constructions and simple puzzles. It enjoys the speed and feel of running and riding tricycles. It loves to display its mastery over balance and coordination by skipping, climbing and hopping.

At this age increased social interaction and communication combined with physical mastery lead to a myriad of simple physical games. Chase games and rough-and-tumble play are popular. Hide-and-seek shows up at this age and increases in complexity and variations as the child grows older.

Vygotsky notes that around the age of three children begin to create symbolic play. They can make the jump in thinking which allows an object to become something else, provided the two objects have something in common. A preschooler can take a broom and pretend that it is a horse, riding it around. She can play roles with increasing complexity and duration, within increasingly complex social situations.

Such developments pave the way towards the understanding of symbols as the preschool child prepares to grasp the beginnings of reading and writing. Speech itself develops to the point where the child can usually express its feelings and desires in words. Depending on cultural requirements this ability to use words may be developed into narrative or rhyming games, or simply be used to facilitate actions and express desires.(Garvey, 1990)

To preschoolers the world outside the home or daycare takes on increasing significance. They struggle to understand the functioning of the adults and the world around them. They become aware of issues such as death, God, and growth and they struggle to understand them. Often their probing minds take in much more than the adults around them recognise.

From the preschool age the values that will form decisions throughout the child's life begin to take shape. These values are culturally and environmentally

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	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs
Gross Motor Development		Runs stiffly Runs on uneven ground Carries bulky objects	Goes up stairs one foot after the other Stands on one leg. Hops. Pedals well. Bicycle without side wheels Opens door, enters and closes door unaided Gets in and out of car.		Jumps with feet together Puts ball in goal.

	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs
Visual Autonomy	Helps actively with dressing Fork	Undresses with assistance Begins to dress Undoes buttons Unlaces shoes Washes hands Dresses doll Eats properly unaided	Goes to W.C. alone Ties bow does hair Pours Drinks with straw	Helps self unassisted all buttons able to wash alone Cuts meat	Simple shopping Opens lock with key Telephones

	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs
Fine Motor - Adaptive	Stacking Fitting together Puzzles (simple) Screwing understands the movement	Tests Sewing Lacing (first appearance begins to lace...) performs it	4 beads in 2 min. Bridge of blocks Puts away in box Cuts with scissors Laces properly (turning over)	10 matches in box in 20 secs Rolls up string Sews with large needle Does not turn over	Realisation of personal left and right

	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs
Emotional and Social Development	Opposition phase Identification - rivalry Idea of sex - Oedipal stage		Locating Persons and places Socialisation		

	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs
Language	Everyday objects Simple orders Parts of body Clothing, etc.	Colors Where is it? Why? High,low Large,small	Yesterday, tomorrow Like,unlike When? (duration) How?	tests 2nd degree comprehension Missed train Fire in house... Logical order colors, thickness, dimensions	
	Words with articles Substantive verbs	States own sex	States name and age	Knows address and phone number Extension of vocabulary	
	Incorrect tenses Unconnected words	Tenses of verbs Accumulation of words	Mistakes in logic Phrases put together	Correct language Improved syntax	

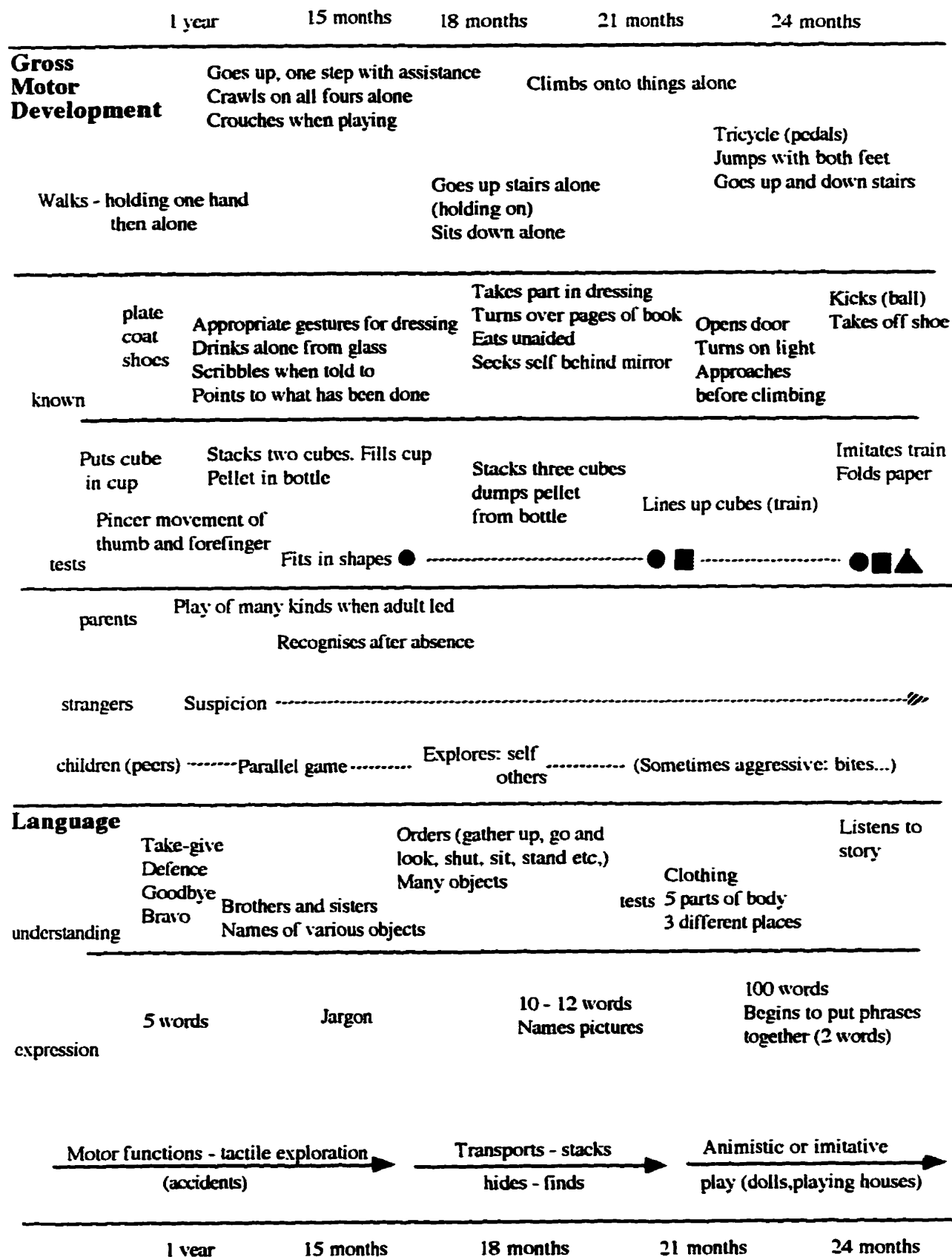|	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs
Drawing	Attempt to copy vertical and horizontal lines Scribbles Centripetal lines ± deflection	Completing half a circle	Various drawings (trees, houses etc.) Full circle Whole body Turned towards objects Start of schooling	Writes Positions transparencies	

Figure 5.2 - Development from 2 - 6 Years of Age - this schematic diagram is adapted from a chart by Nestlé, made for their infant milk program.

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formed. Children growing up in cities may not develop any attachment to or understanding of either the natural or the social world if they have little or no exposure to these spheres of life.

So many things in a preschoolers life are changing and developing all at once that it is hard to grasp all of the changes at once. The chart on the previous page (figure 5.2) attempts to create a picture of some of these changes, making it easier to see how the total child is developing.

Opportunities for the development of sociodramatic play

Sociodramatic play is often considered key to cognitive and emotional development .(Johnson, 1987, Vygotsky, 1978) As more physical types of play are often more easily provided for, careful attention should be paid to making environments conducive to sociodramatic play.

Studies have found that boys and girls tend to play at different types of dramatic situations. Girls are more likely to play house or going to the store. Boys are more likely to play at space ship voyages and such team rivalry games as cops and robbers, or cowboys and Indians. Provision for each of these types of play require different types of space. Unlike toddlers, preschoolers have some facility to transform places within their minds into the types of space that they need. However, space types must be similar in some respects to the places that they are transformed into. The challenge is to design play space in such a way that it can become a number of different place situations, while having some characteristics which belong to each one.

Mitsuru Senda (1992) found that imitative play can be divided into two categories. The first type, playing at airplanes or trains, includes elements of "dizziness", such as sliding or jumping and uses play structures to augment the experience. The second, playing house or store, is less action oriented and is rarely found on play structures of any kind. Susa and Benedict, (1994) report that the "contemporary" playground in their study, encouraged imaginative play more than the traditional playground. Aspects in the contemporary playground that encouraged this type of play were, encapsulation, increased complexity, and the presence of pretend facilitators, such as rockets, cars, boats, castles, tunnels and bridges.

However, natural magical playscapes cannot be replaced by slick manufactured structures. One of the things which aids the development of

sociodramatic play is loose materials. Outside, such materials are mostly found in natural types of spaces. Long grasses or short grasses with nearby trees and shrubs, particularly when fallen leaves or grass clippings are present, have been reported as places where make-believe play takes place. (Payne,1977, Hart, 1979 as in Jansson, 1987)

Opportunities for involvement in the adult world

By the fifth year the child has developed cognitively and socially to the point where the planning and design of places become possible. (Hart, 87) This is evident in their ability to plan their own play spaces, and game activities. From this time on children can be involved effectively in the planning and design of the spaces that they use.

It is an important part of the socialisation process that the preschooler be introduced to how the adult world works. Preschoolers are often taken by daycares or kindergartens to hairdressing salons, behind the scenes of a fast food restaurants, or to see dairy farms. All of these trips are made to help the child understand how things in their world work. This idea of introducing the workings of their society should carry over to the daily and weekly rhythms that surround them.

Many guidelines for playyards advocate fences that allow views to places of adult activity. Simple awareness of the mailman, the garbage truck, rush hours and the comings and goings of patrons at a local bakery, give the children a sense of where they are, both in place and time. They also offer opportunity for simple interaction. On a larger scale, shop windows which allow glimpses of the work going on within or buildings which express their role in the neighbourhood help the child grasp a sense of what is going on in the world around her.

Preschoolers not only want to understand, but to take part in the world around them. Allowing them to help in the growing of a garden or in the cleaning up of a playground or park are activities which are not common enough. (Wortham & Frost, 1990) The teaching and empowerment potential of such activities are obvious.

Opportunities for discovering nature

Some studies have looked at the possibilities of welcoming nature into an urban environment. Both Jansson and Moore have shown through their research that for young children and their care givers, pristine wilderness is not the most

advantageous or the most welcomed addition to the city, by young children or adults.[1] Instead Moore describes the need for "roughing-up"urban parks and playgrounds. Elements such as longer grass, wildflowers, freeform bushes, trees and some topography not only encourage urban wildlife, but allow children to explore in the destructive/constructive methods which allow for true emotional learning and place belongingness to develop. Long grasses are particularly important for small children, as they present a building and hiding medium which is easily within their physical powers to control. (Hart,1979) Rough ground has a resilience to damage that is not present in a less diverse environment. Aquatic environments are also needed, not only to create a place for aquatic creatures but to allow for such classic childhood pastimes as minnow fishing and duck feeding.(Moore,87)

Opportunities for the introduction of symbol

The preschooler, as the name suggests is socially, emotionally and mentally preparing to enter school. One of the greatest differences between school life and home life is the constant emphasis and use of symbol to convey meaning. (Vygotsky,1978) Although little is written on this topic under this heading , it seems that there is an increased emphasis in the playdesign literature on signage in the play area. (Moore, Goltsman & Iacofano,1987, Playgrounds, 1990) Identification signs, directional signs, and informational signs, communicating in pictures and words, help children to navigate their environment.

Beyond traditional signage, symbol in its mystical sense has a place in play space. Talbot and Frost (1990) suggest that the introduction of classic childhood symbols such as sun, circle, tree, home, and person, should be incorporated into play spaces to increase the magical quality of the place. Such symbols can do much to tell the child that the play space is a place the it can understand and control.

Other types of symbol are monuments and landmarks. Whether monolithic, or child size, such symbols enrich the meaning of a child's landscape. While smaller monuments can provide connection to the the past and a concept of history within

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[1] Moore and Jansson record that young children tend to avoid wooded areas, choosing instead bushes and grassy places that are fairly close to home base. In her international survey of studies done with young children in outside space Rivkin describes that even in primitive societies which depend on pristine wilderness for their sustenance young children tend to stay in the home compound. It seems likely that one reason for young children to stay out of the "wilderness" setting is closely connected to their tendency to stay near to their primary caregiver. Not only is the caregiver unlikely to want to enter into uncharted natural space, but in a wooded setting the young child quickly looses sight of caregivers. A shrub and rough grass setting allows the child to control visual connection to the adult, or to home base, while still retaining its own freedom to explore or hide.

a site, larger landmarks help preschoolers to gain concepts of distance and context because they can be seen from several places within a neighbourhood.

Designing For Interaction Among Age Groups

Although children of different ages do have different needs, it is clear that children benefit from interaction with children of other age groups. This points to the advantage of having common areas where young children from infancy to preschool age can interact, with each other, with older children and with adults.
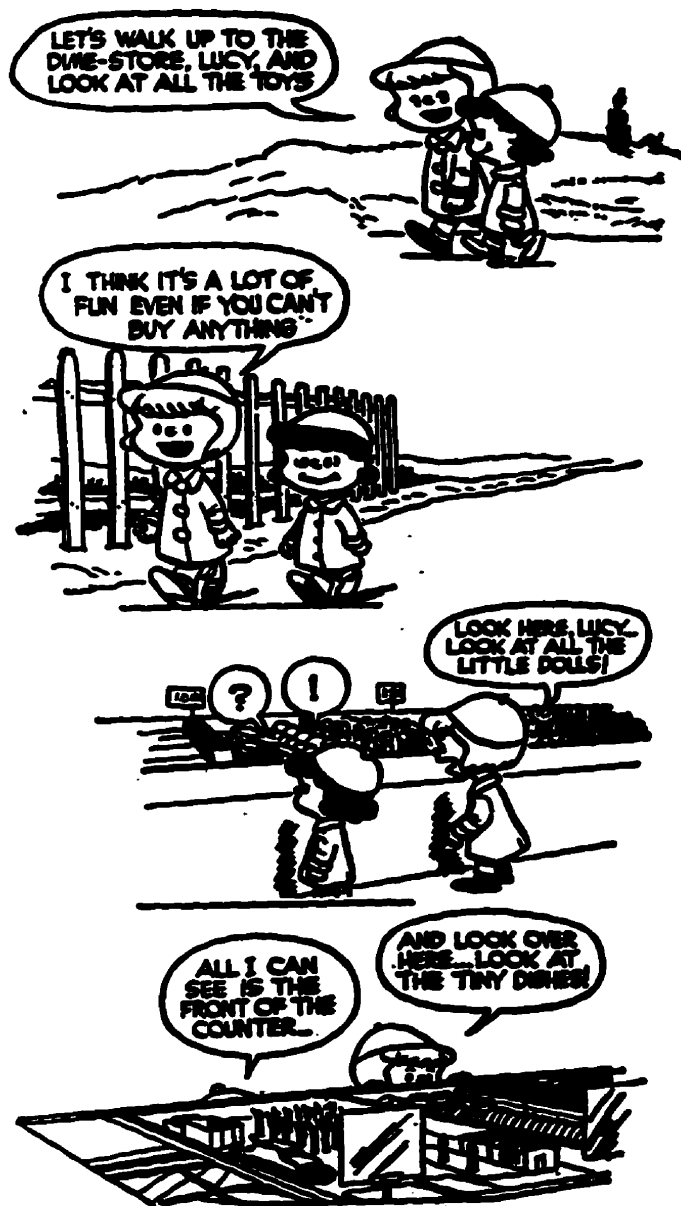
Charles M Schulz.(1963). Good Grief, Charlie Brown. New York: Fawcett World Library.

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Chapter 6

Places for Play and Discovery

Children play anywhere and everywhere that they are allowed to do so. Some argue that there is little point in providing places for play because children will play anywhere that they happen to be. (Senda,1992) This suggests a lack of understanding about how play occurs and where children choose to play.

Mitsuru Senda has spent 25 years researching outdoor play in Japan. His research on play structures, in playgrounds and around housing estates has led him to describe 6 types of play space. The categories are chosen by the children that use them. They are:

1) Nature Spaces - containing trees, water, and living beings
2) Open Spaces - containing playing fields large enough for organised games
3) Road Spaces - before cars these were the main playgrounds, they also function as meeting places and networks connecting play locations
4) Adventure Spaces - full of confusion, garbage dumps, construction sites
5) Hideout Spaces - secret places independent of adults
6) Play Structure Spaces - growing in importance as places where play can be concentrated, also serving as symbolic playgrounds

(from Design of Children's Play Environments, 1992, p.97)

Places for children's play often contain more than one of these place types, but it would be extremely rare for one place to encompass all of these qualities.

Structures and Playgrounds

When a designer is asked to make a place for children it is almost always a play structure or playground which is expected. These are places which adults have set aside specifically for the use of children.

There is a growing body of research and design recommendations on playground design. The most extensive North American handbook of design recommendations is the Play for All Guidelines, with it's last edition in 1992. Edited by Moore, Iacofano and Goltsman, this book covers topics from the variety of surfaces that can be traversed by a wheel chair, to recommendations for signage and risk management, and of course the basics of play structures and vegetation. No

research was done directly for the publication, but researchers and designers were consulted extensively throughout it's formation. It encompasses a wide range of topics that must be addressed in the design of playgrounds and playparks. There has also been much discussion in design and developmental fields of study as to what kinds of places should be built for our children. (A discussion of playground types can be found in Appendix B.)

Play Structures vs. Play Grounds

It is not always easy to separate play structures from playgrounds. In the research literature the two are sometimes dealt with as if they were one and the same. This is because playground design since the 1960's has favored an approach where many elements are connected into one structure. This is a dangerous tendency, as Senda's research indicates that only about 25% of children's play needs can be accommodated within play structures. Other research has indicated that only children under the age of eight use play structures to any great extent. Senda's recommendation to allow circular movement throughout play structure seems to extend the use of the structure from a series of activities to accomplish to a platform for the extension of more complex chase games. This in turn extends the age use of the apparatus. Structures play important roles as focal and symbolic points for all ages within a community. As a result much of public playground design continues to focus on structures as the main provision for children's non-organized play. However, as studies support the idea that children respond to the playground positively or negatively as a whole environment, and that a particular element within different contexts will encourage different play behaviours in children, (Hartle and Johnson,1993) structures should not be seen as isolated elements, but as one part of the total environment in which children play.

In 1988 Weinstein and Pinciotti formed a set of ten guidelines for analysing the design of play structure centered playgrounds.
Their condensed guidelines are as follows:
1) Unified Environment - elements are connected physically or spatially.
2) Variety of Spaces - varied in terms of degree of enclosure, size, shape, and definition.
3) Key Places - areas which can support a wide variety of complex behaviours as opposed to single use equipment such as swings or traditional slides.

4) System of Intersecting Pathways - choice of path, under,over, connecting, etc.

5)Three - Dimensionality - elements are layered so that interaction is multiplied

6) Non-objective Elements - fixed elements that are non-representational and
   therefore open to different interpretations.

7) Variety of Surfaces - both in direction and texture, remaining appropriate to
   activities that will occur there.

8) Loose Parts - manipulable , movable elements either integrated into the physical
   structure, eg.,sand, or supplied on sight, eg., crates or digging tools.

9) Graded Challenge - different degrees of difficulty so that the level of challenge can
   be selected by the child.

10) Retreat Spaces - provision of spaces where children can be separate from activity
    and watch or play alone without being distant from the action.

(Adapted from Weinstein and Pinciotti,1988, pp.354 - 356)

These guidelines encompass much of current thinking on what constitutes a good play structure with the exception of number six - non- objective elements. More recent research and recommendations (Susa and Benedict,1994, Frost,1990) have supported the presence of pretend facilitators. These would include rockets, cars, boats, castles, tunnels, bridges, roads, and smaller elements such as counter surfaces and steering wheels. Frost even goes so far as to mention that the complexity aura of the real object, for example an old tractor or a fire engine, can produce more prolonged and complex play behavior. Making the jump from a pretend object into a non- objective shape is an ability which few children possess. To be used in pretend play the object must have some qualities in common with the real thing. (Vygotsky,1978)

Current thinking in designing for younger children has moved away from creating a total structure towards designing a system of zones (Frost and Klein, 1983, CMHC,1980, Esbensen, 1990, G. Moore, in conversation, 1995). This is the idea of zones, each focusing on different types of play or types of activity has been present for many years. In the older literature (CMHC, 1980, Frost and Klein,1983) recommendations were to divide the play space into opportunities for the various types of play; physical or motor, social, dramatic, and cognitive or constructive. Through use of these four zones and continued research, a more complete idea of how to use the zone concept has begun to emerge. G. Moore, beginning with research in indoor environments, has concluded that children function and learn

best when the physical environment allows them small alcoves or semi-enclosed spaces which allow five or six children and one adult to play or work. These alcoves should have some view of other, similar alcoves but more importantly should have visual and auditory connection to a larger common space.(Moore,1987) This finding has been supported by research comparing the amount of dramatic play engendered by play structures with more or less encapsulated space. The structures with more encapsulated space supported more dramatic play.(Barnell and Kruidenier, 1981 in Hartle and Johnson,1993)) Such findings were also true when the research was done within a single play yard. (Yawkey,1990) Esbensen has put forward a proposal that at least seven zones are needed for a good play ground; 1)the transition zone between building and playground, 2)the manipulative/creative zone (mostly art materials such as paint and playdough), 3)the projective/fantasy zone (sand and water with "loose parts"), 4) the focal/social zone (a talking observing zone - seating , a round table , a shade tree) 5) the social /dramatic zone (a small village - a play house or two, near to a path for wheeled toys and a parking place), 6) the physical zone (for running, climbing, balancing, sliding and rolling), 7) the natural zone (a garden area, area for digging, and plantings to attract insects and birds) . This playground framework is specifically laid out for young children. (Esbensen,1990)

A Concise Guideline for Playground Design

One of the most complete and up-to-date summaries of playground research can be found in Hartle and Johnson's chapter in <u>Children on Playgrounds</u>, (ed.Craig Hart, 1993). At the end of the chapter they set forth some guidelines that attempt to combine the results of current research in a concise way.

In an even more concise form these are their recommendations.

1) There should be adequate accessibility, flow of traffic should be clear and overall the environment should appear attractive, secure, and easy to understand.

2) Challenges should be safe, yet allow for risk-taking, particularly in the development of motor skills. Various levels of challenge should be presented.

3) A wide variety of materials and experiences, some of which can change regularly should be provided to accommodate different personalities, ages, and moods.

4) Loose parts, movable parts and changeable parts, preferably used with some supervision from a play leader, should expand constructive and dramatic play.

5) There should be provision for easy supervision and involvement from adults.

6) A multisensory environment should include stimulation for all five senses in a variety of ways; sight ,hearing, touch, smell, and taste.

7) Clear spatial organisation should connect yet keep distinct activity zones. Zones should allow children to progress from simple to more complex or involved activities, and retreats or passive zones should be easy to access.

8) Safety should be of the utmost importance throughout the play ground. The place must be safe, but attempts must also be made to teach the children safe play behaviour. Surfaces under climbing equipment must be resilient to falls, decks must be of manageable height for the age of the children,and openings should not allow head entrapment. Any toxicity of materials must be avoided and high quality materials and construction used. A maintenance schedule is imperative if the playground is to remain safe.

(Adapted from Johnson and Hartle,1993 pp.32 - 34)

All of these guideline ideas have been mentioned at some point through the discussion of research here. When comparing Weinstein and Pinciotti's set of guidelines with Johnson and Hartle's a difference in attitude becomes apparent. This is the difference between focus on a play structure which incorporates many play types and a playyard which focuses on smaller, more focused playing zones.

Playground Safety

Playground safety is another area which has come under much scrutiny in the past two decades. Research suggests that preschoolers and toddlers use playgrounds much more than older children. Playground structures are often not made in appropriate sizes for toddlers and preschoolers. National standards have been set in place , mainly to provide safe, developmentally and size appropriate play spaces. The National Standard of Canada's Guideline on Children's Playspaces and Equipment was published in 1990. It contains such safety design features as allowable encroachment zones, gripable surfaces, distances between bars, and construction joints. Moore, Goltsman, and Iacofano's Play for All Guidelines, (1984), deals more directly with, risk management in play settings.

Adults caring for infants and toddlers also need to be able to access the children unobtrusively in the midst of play. Many play structures do not make this possible. Design guidelines stress the need to provide seating and tables near the play structure to accommodate adults accompanying young children (Cooper Marcus,1990), but this idea should be taken further to find ways to encourage more interaction between children and adults during play. (Moore,1994).

Open Spaces, Hideout Spaces, and Adventure Spaces

Perhaps the most useful fact to gather from current research on open spaces, hideout spaces and adventure spaces is that these categories of space are dominantly used by children older than age five or six. They are perhaps the most significant types of play spaces for children of the middle years, ages 6 or 8 to 12 or 14.

Huesser and others observed that the primary grade children of one primary school tended to play on apparatus while the upper grade children tended to participate in ball games.(in Weinstein and Pinciotti,1988) Senda also found that the younger children tended to play among the structures, while the older children needed more green space. (Senda,1992)

Open spaces are used by younger children for running,tumbling, and simple tag games. Prescott and others found that between one third to one half of a play ground for young children should be open space, with the larger amount being used when there was a greater number of children using the place. (Prescott and Jones with Kritchevsky, 1976)

Young children do not use the same type of hideout spaces that 8 to 12 year olds use, but they do love to hide. Roger Hart found children as young as four making hiding places in the long grasses, while the older children made more permanent hideouts in bushes or trees.(1979) Young children tend to find favourite hiding places close to home, for example, behind bushes in their front yard. This hiding is sometimes a game activity and sometimes a retreat away from the adult world or their peers. A young child rarely takes time to construct hiding places. Hideout opportunities for young children should be incorporated into other types of playspaces, particularly the places closest to their home or daycare.

Adventure spaces are as attractive to a young child as to an older one, but the young child is rarely given the freedom to explore such space on her own. Adults do not see such spaces as suitable for young children and do not take them there to

play. Small children rarely have the experience required to navigate such spaces with any degree of safety.

Adventure spaces, like adventure playgrounds are significant to older children. Perhaps the best documentation of the significance of this type of play space to children of the middle years can be found in Robin Moore's study of children in three British communities, <u>Childhood's Domain.</u> Such spaces are significant to the children between 8 and 12, as they break away from the adult world and begin to claim their own places.

Nature Spaces

Nature itself contains a complexity and variety that a designed place cannot even begin to imitate. Although a play environment might be more organised and provide more room for supervision it cannot provide any developmental play experience that is not already present in nature. Every play designer writes of the missed opportunities resulting from the dwindling reserve of natural play spaces.

Nature spaces are often connected with adventure spaces and hiding places. Natural spaces can provide the materials to build and the secrecy of being away from adult civilisation. The one thing which nature spaces do not provide is a feeling of safety. The small child is not ready to be let out into nature's wilderness, but it is essential to allow young children to explore nature "close to home". Beate Jansson's <u>Children's Play and Nature in an Urban Environment</u> (1987) while not containing any original research, does attempt to gather existing data and come to conclusions about providing for young children's (3 to 8 years.) experience of nature in the city. She concludes that young children's exploration of nature should be possible to accommodate within traditional urban public spaces and sets out some guidelines as to how this could be done.

Some of her guidelines are:

1) When designing places where younger children, (less than 5), are likely to play, eg., places close to home or to adult recreation areas, the focus should be on smaller highly sensory plantings. These should include grasses and shrubs more than trees.

2) Care should go into choosing the plants so that there are sensory "events" going on during all seasons, and that as much as possible plantings should be

done in naturalistic arrangements using native plant materials. She notes that for prairie regions there are numerous grasses, flowers and shrubs to choose from, but there is a limited selection of appropriate trees among the native species.

In line with Jansson's recommendations, Moore (1986) advises an approach to nature which involves roughing up the landscape. In essence this is creating a less manicured landscape in the city which is resilient to the hands-on constructions and exploration that a small child needs. Rivkin's description of the !Kung children's lives shows the young child's natural choice of the safety of the human community over nature. While being surrounded by bush the children in the village under 10 years chose to stay inside the housing compound relatively close to adults.

While these children stayed close to home, they lived within nature. They were constantly in touch with the "outdoor" world; surrounded by sky, sun, earth, and natural materials. Children in large cities stand in danger of never having any connection with nature and never understanding their places in the natural world. There is substantial evidence which suggests that the access of young people to the natural world is fundamental to the translation of knowledge into active concern for our world (Palmer, 1994). Writing from personal experience, Judith Dighe stresses that possibly the hardest task in teaching young children to love Earth, is getting them outside to experience the natural world. Once outside even a concrete patch will have more to teach than any indoor environment. The young child, compulsively exploring every environment, will find lady bugs and ants, inspect plants pushing through the hard surface, and feel the rush of wind on his face and his body. (1993)

Dighe also remarks that many city children never see a forest before they turn ten years old. It is a false assumption that this can be remedied by letting them experience the forest in later years. Research done with eight and nine-year-olds in Chicago metropolitan area suggests that their lack of exposure to completely natural settings has meant that while they are attracted to nature they are overly aware of the hazards it can present. (Simmons,1994) As Sebba (1991) noted the small child experiences nature in a more primal, sensory way than the older child or adult does. A ten-year-old will never again have the chance to experience a forest with the

awe of a small child. It seems that some introduction to pristine nature at a young age is desirable. If the child can have the benefit of an adult or older child to provide the element of safety, the power of nature is likely to influence her feelings towards the natural world later in life.

Road Spaces

<u>Signals</u>
When the light is green you go
When the light is red you stop
But what do you do
When the light turns blue with orange and lavender spots?

Shel Silverstien

One of the place types that is always present in the life of the city child is the street. While the street has many attractions it also has many hazards. As a result preschool children are rarely allowed to play in the street areas without supervision. However, if the the child has no private outdoor space connected with her dwelling, she naturally plays on the doorstep, the sidewalk and the street. Doorstep and yard play is most significant to a young preschool child, regardless of where they live, because they are rarely allowed to play any further from home. Even in more dangerous traffic situations it is common to have older children playing with their younger siblings between the doorstep and the street.

Experience shows that the street has many attractions. It is perfect for many children's games, from ball hockey to skipping to biking to playing with the water in the gutters. The street is where the social activity of the community happens: adults pass and talk , deliveries are made, people move in or out, the postman makes his rounds and cars pass or park. Children want to be where the action is.

Robin Moore contends that as children will continue to use streets as play spaces, it would be wise to design streets with safe play opportunities built in. "Opportunities for street improvement are especially obvious in older housing areas where traffic levels are moderate and streets are laid out generously and have interesting configurations that already stimulate imaginative play."(Moore, in Vernez Moudon,1987)

Safety on urban streets has long been a topic of concern for researchers. North America in general is far behind Europe and other parts of the world in attempts to make streets places for people rather than cars. Research done in Sweden has

confirmed the great hazard presented by traffic to children younger than ten years of age. Young children are physically and psychologically unable to judge traffic speeds and movement sufficiently to cross streets safely. Despite training in traffic rules, streets can present serious dangers to young children (Bjorklid, 1985, Moore,1987). Research has also found that even a heavily trafficked one-way street was easier for a young child to negotiate than a two-way street.

Combining Children and Cars

Various solutions to the problem of having children and cars on the front streets have been proposed. Wider sidewalks are one simple recommendation. It is common in England to have railings along busy streets. These provide perching places, and prevent small children from suddenly dashing into traffic chasing after a ball or balloon. Simply choosing some residential streets to be dead ends by blocking one end with posts, or adding speed bumps to small residential roads are other common interventions.

A number of very creative streetscapes have been designed that take into account the presence of people and cars. In Japan a street boasts a stream which runs the length of the sidewalk, widening to make a paddling pool at one point and circling a small climbing structure at another. Another Japanese location has made inset the sidewalks leading to an elementary school with tiles painted by the children. Other locations in Japan display street sculptures that children are welcome to climb on. (Ekbo,1990) Frankfurt, in Germany, boasts numerous small courtyards and small fountains both on its vehicular and its pedestrian streets.

Perhaps the most comprehensive type of intervention on residential streets is the Woonerven. This is a portion of a street that has been redesigned so that pedestrians have the priority of movement over cars. Often two or three blocks in length, these streets quickly become playspaces for young children in the near vicinity. The design interventions are often fairly simple. Traffic is kept to one lane, often to one direction and the speed is dramatically reduced. Spaces are left for parking but they are irregular in orientation, allowing for the widening of the sidewalk in certain places and the addition of benches, vegetation, and small play opportunities.(Eubank,1987,)

Eubank's study on the use of two streets, before and after becoming Woonerven, i.e... being redesigned to allow pedestrian traffic dominance over automobiles, demonstrates that when the traffic threat is eliminated the number of

children using the streets, the duration and complexity of their play, increases substantially. (Eubank,1987) This was particularly true of the preschool age group. It was not only the children that benefited from the new layout, older people began to sit outside more frequently, and young men spent increased time on the street fixing and cleaning their cars or bikes. Such an increase presence of residents on the streets adds to the safety of the children.

Although the Woonerven affected the street life of the residents on or near the renovated blocks, it had very little effect on the behaviour of the residents that lived further away. Eubank suggests that in order for the benefits of the Woonerven to be felt throughout the community, a network of pedestrian oriented streets are needed.

Such streets are rare in North America. Attempts to create such places have often met with loud protests from car drivers. Importing the European models of street redesign is not always culturally appropriate in many areas of North America. Careful education and community involvement at all stages of the process is needed in order to make any successful alteration in street layout. Many attempts to do this have failed. However, a North American approach to re-designing streets, with children in mind is needed, especially in areas like the one near the Ellice Avenue daycare where a relatively high traffic count paired with a high population of children accounts for a high incidence of pedestrian/vehicular accidents.

Robin Moore lays out a set of guidelines for "making streets livable for children"(in Vernez Moudon,1987). Although these are focused on children's use of streets from the home, many of the suggestions have some application to the daycare situation.

1) Conserving and Enhancing Fronts:

i.e., all those oddball left-over spaces where the larger community environment intersects with the private domain of the family. (Boulevards would fall into this category). Side, back and front spaces need to intersect and form connections.

2) Reducing Vehicle Speed and Increasing Passage Interval:

Twenty minute intervals are often necessary for street games. If the interval is less than this, but the speed is reduced to 5 - 6.5 km/h. then games can still be played across the street. Intervals of less than five minutes, or speeds more than 16 km/h mean that play is confined to one side of the street or the

other. Necks, bumps, jogged lines of travel, and varied surfaces help to control flow and reduce traffic speed. Narrowed streets and cul-de-sacs reduce traffic speed.

3) Improving Street Performance for Children's Play:
The addition of elements for climbing on, jumping over, balancing on, or sitting are elements which enrich the street's play potential.

4) Community Participation:
The key to success: Everyone uses the streets so everyone, including the children should have a hand in the design.

This last guideline is particularly important in light of all the examples where an attempt to tame traffic has been a complete failure because of the frustrations that it caused motorists. If a street is modified it affects all the people living there and all the people who regularly pass through. It also affects residents of nearby streets who often suffer increased traffic loads.(Appleyard,1976) All of these people need to be notified in advance, and encouraged to participate in the decision-making process.

Moore's guidelines mainly address residential streets where traffic loads are low. Daycares and other people with children must often use mid-to high-traffic streets. Such streets are not played on, but young children still use the space between the doorstep and the curb for passage play. For any child passage does not exist without some elements of play. Low walls are for balancing on, posts are for swinging around, and every surface cries out to be brushed with a stick making a sound or a rhythm. Even under strict supervision a child compulsively looks for play activities. When asked if she was allowed to run her fingers along the fences and buildings when she walked to places with her daycare, my five-year-old answered, that she could do it if no one noticed.

This type of experience with the street as a place for play and developments is rarely touched on in the literature, yet it plays a significant part in a young urban child's life. Daycares in urban centers often use public streets as they take their charges to one place or another. One such daycare's experience on Ellice Avenue in Winnipeg, Manitoba, is looked at in detail in chapter 7.

Winter Spaces

All outdoor spaces are transformed in winter. Other seasons mark a passing of time and a rotation of growth, but with the coming of snow and extreme cold the outdoors takes on a completely different set of characteristics.

It is surprising how little is written about winter and particularly about snow, in children's design literature. This is partly because much of the design literature comes from more gentle climates. It also seems likely that the adult tendency to avoid outdoor activity during any adverse weather conditions has something to do with it. Thomsen and Borowieckia in <u>Winter and Play</u>,(1979) point out that there are two ways to look at outdoor activity in winter. The first attitude, which is prevalent, is to protect and hide from the extreme conditions. The second, is to welcome the changes brought by winter and to create spaces in order to enjoy them. This second approach is followed whole heartedly by most children. They apply the approach, not only to snow but to all types of inclement weather, as John, in A.A. Milne's poem, demonstrates:

<u>Happiness</u>
>   John had
>   Great Big
>   Water proof
>   Boots on
>   John had a
> -   Great Big
>   Waterproof
>   Hat;
>   John had a
>   Great Big
>   Waterproof
>   Mackintosh-
>   And that
>   (said John)
>   Is
>   That.
>   A.A. Milne

Examples of this attitude towards weather are numerous. A few weeks ago my five-year-old insisted that she could not come inside when a thunderstorm broke because she had to test if our spruce tree would keep her dry during the heavy downpour. Thomsen and Borowieka, give a winter example of three children seen

in the midst of a snow storm, pretending that the snow hill they were climbing was Mount Everest. Spaces designed for children should support their desire to experience everything the "weather" has to offer.

Snow transforms the outdoor environment, creating magically new opportunities that can only be experienced outside. Young children are enchanted by snow. Infants and toddlers look, touch, and taste at any opportunity. One of the gifts that snow brings is the chance for unique constructive play opportunities. Some research has found that daycare children engage in constructive play much more indoors than out. The researchers suggested that this might be due to the lack of constructive play materials outside. (G. Moore, 1985). This problem can no longer be true when the snow arrives. Snow transforms the whole world into one giant edible sandbox, but the scale of the constructions that can be made are much larger than any sandbox. The effect is more like that of a beach .

Snow properties change and evolve with temperature and time. When the snow is wet and warm it makes good snowmen. When it is piled or settled to the right degree, it can be cut into building blocks, or carved out to form tunnels, quinzees, or mazes. When it is dry and granular it provides a surface for writing in or making body prints. Snow brings with it the chance to create mounds and hills for rolling and sliding, which are so often absent from Prairie landscapes. It transforms the few existing hills into potentially multifaceted slides.

The best days for snow play are usually the warmest days. Snow itself is much more malleable and movable when the temperature is just above zero degrees Celsius. More significantly, the children can tolerate being outside for much longer without risk of frost bite.

Ice formations and the use of snow to slide or to glide on are suited to the colder days of winter. Ice rinks for skating can be created anywhere there is a source of water and a flat piece of land. Although small children do not generally participate in formal ice hockey, two-and three-year-olds are often taught to skate. Because ice skates expose feet to the cold more than other winter foot wear, provision of a near-by shelter to warm up in is crucial. Sheets of ice can be made with variations. In, Winter and Play, (1979) an ice rink was covered with a maze of snow mounds. Ice can also be used for it's sculptural effects. Elements can be designed to encourage the formation of icicles and other interesting ice formations. (Jansson,1987, Thomsen and Borowekia, 1979)

A northern climate makes the task of helping children experience nature more challenging. On the one hand it is a gift, because when nature is at an extreme it is impossible not to notice. Children of a northern climate understand that nature is a controlling factor in their lives. On the other hand the cold of winter sometimes makes spending time outside impossible.

The street also changes in winter. Depending on the snow fall, the size of snow banks rise on either side of the roadways, blocking the view from the sidewalk to the street. The banks are very tempting play spaces but children are repeatedly warned not to play on them because of the dangers of slipping into oncoming traffic. Access problems occur when sidewalks are left uncleared and it becomes increasingly difficult to take small children anywhere by foot. Snow banks also often block access on and off of busses despite regulations that such areas should be cleared. Going anywhere becomes difficult and the daycare in general sticks closer to home base.

In the winter, transitions between indoors and outdoors are incredibly important. The contrast of the cold and the bright glare of the outside with the darker warmth of indoor spaces, requires a set of spaces to allow the transition to occur more gently. Planting outside entrances can begin the transition (R.Moore, 1987) Glassed in porches offer a place to put on and take off boots and extra clothes, and let the winter sun give extra warmth to the indoors.

Having a place to observe the outside from within, can extend the outside experience beyond the short time that it is possible to be in the cold.(Francis,1990) Added nature lessons can be learned if a group of shrubs can provide perching places and shelter from the wind and a bird feeder can be seen from a window.

The sun takes on particular importance in the winter climate. The sun is only present for a portion of the waking day . The majority of any outdoor playspace must be in a sunny location. If it is in the shade it will be uncomfortable to be in for all but the warmest months of the year. The sun not only creates warmth and light. Together with a good drainage system it is the best method to move the snow and ice out in the Spring.

Wind is also a major concern. Regulations require that children in Manitoba be kept inside the daycare if the windchill is 1600 or greater. Thomsen and Borowekia, (1979) cite data which describes the methods for controlling the effects of wind. To prevent the swirling gusts created by abrupt obstructions of the air flow

walls could be made permeable, angled away from the direction of the wind, or softened with the addition of a baffle to the top, slanted away from the wind direction. Wind can also be used to the designer's advantage. Places can be designed to collect certain amounts of snow in certain shapes through the construction of elements which block the wind. Special attention should be given to bus stops, where young children have to wait in windy locations.

Play spaces can be made into warmer microclimates if the sun is let in and the wind from the north and north-west is blocked out. Thomsen and Borowekia, (1979) point out that in Manitoba southerly winds can also cause winter wind-chills to soar. Their construction of a ring of snow mounds, combined with a dark colored, south-facing, lean-to shelter, proved effective in producing an enticing winter play environment for Winnipeg elementary school children. Types of materials used also affect their winter usefulness. Density, texture, water content and color affect a material's reaction to temperature. Brick, stone, or wood, having high conductivity, and low reflectivity, absorb heat when the sun shines on them, and later let it out into the atmosphere. Asphalt clearly displays the effect of color and texture. During light snow falls. Snow melts from it first, long before it leaves near-by grass, or rough limestone surfaces.

Elements must be designed to create a balance between the need for heat absorption in winter, and the need for its reflection in summer months. For this reason the use of deciduous trees to create shade in summer and to create shelter without blocking the sun in winter is often encouraged.

Places for Toddlers and Preschoolers

In this survey of play spaces certain aspects of places for small children repeat themselves many times. Generally young children function well in places that are already constructed for them, or that have easy-to-manipulate materials, such as sand, long grass or leaves. They respond well to smaller types of plant materials such as grasses and small shrubs. Often spaces for young children fit easily together with adult spaces. Young children feel best within shouting distance of adult caregivers, and the caregivers also feel the need to keep them close at hand. Small children in the city are often kept inside unless their adult caregiver can accompany them outside. Daycares also need to take large groups of small children through

largely adult types of spaces. The more that the presence of these young children are designed for as an integral part of adult city spaces, the better the quality of life for both adult and child can become.

Chapter 7
The Daycare at 667 Ellice Avenue

The daycare group walks through the urban environment in a straight line. They are under strict control. Each holds her partner's hand and follows the couple or the caregiver in front. If no one sees they can run their fingers along the fence or grab at a tree in passing, but they are allowed very little deviation from their goal.

As they pass the environment dances around them. Buildings jump out and beckon, trees twirl and wave, locks on small doors whisper, "What's inside me ?", curbs offer a step up, cars whiz past and windows show glimpses of treasures to be gazed at. Some elements jump out and present gifts of discovery or delight, others hang back waiting for their secrets to be found, some are facing them and others have their backs turned. The elements that jump out every time the children pass act as landmarks, letting them know where they are on their path, but most come and go in consciousness, as in sight. These are the experiences of the street that were documented by taking private walks with some daycare participants along routes that the daycare often uses (See Figures 7.4 - 7.7)

The previous chapters have provided information which aids in understanding how children tend to interact with the physical environment (ch. 4,5,and 6) and how they learn to ascribe meaning to physical space (ch.3). Other chapters looked at some of the controls placed on children's use of outdoor spaces (ch.2 and 3). These chapters provide a framework from which to view the following example of a Winnipeg daycare's experience of the streets. After discussing the routes that the daycare takes through public space those routes are explored and explained by two daycare participants. Then, a portion of one route is chosen for further description from an adult point of view.

The Ellice Daycare Philosophy

The parent's manual for the Ellice daycare clearly states its philosophy and methods. The stated intention is to provide children with "a safe, warm environment which will allow them the opportunity to develop socially, emotionally, intellectually and physically at their own rate". The manual goes on to state that the daycare believes that children learn most effectively through play and that the daycare tries to provide the guidance and stimulus required for children to make their own choices and allow them to experience the world around them.

ROUGH SITE PLAN

FIGURE 7.1

DAYCARE
LOCATION

HOUSES

HOUSES

HOUSES

HOUSES

PARKING

JOHN M. KING
ELEMENTARY
SCHOOL

APART
MENT

BAPTIST
CHURCH

APART
MENT

APART
MENT

HOUSES - SINGLE DETACHED

HOUSES - SINGLE

BACK LANE

AGNES STREET

McGEE STREET

PARKS
+
REC. POOL

LUTHERAN
CHURCH

SCHOOL
FIELD

7-ELEVEN
+ ESSO

LANE

FENCE

SHOPS

ELLICE AVENUE

AUTO PARTS / RESTAURANTS / SHOPS | ETC

HOUSES

HOUSES
65

KEY

■ DAYCARE BUILDING 2ND FLOOR

▨ DAYCARE PARKING

▩ DAYCARE PLAY AREA

The Daycare Facilities

The daycare currently provides for 45 children ages 2 to 5 years of age. The children are divided into two separate groups which function as different programs, sharing common areas and common administrative staff. The facilities themselves are rented. They consist of the second floor of a two storey 50'x100' building, the stairs both front and back, and a 50'x100' lot, across a back lane, rotated 90 degrees from the building. The inside facilities include two long areas divided into activity nodes, a kitchen, office, staff room, reception area and a small gym. The outdoor facilities consist of an enclosed play area and parking space, used by both staff and parents. The two long rooms function as two separate programs that share facilities, with just over twenty children each.

The regulations for Manitoba daycares state that at minimum 7 square meters (75 sq ft) of outdoor play space should be provided per child and that the greater of 50% of the licensed spaces be provided for at one time. In the case of the Ellice Center a minimum of 55 square metres (592 sq.ft.) would be required to provide for half ot their fifty children. The current outdoor play space is a 30' x 77.5 ' fenced play area. This 2,325 sq. ft. of space easily exceeds the minimum requirements.

Given the right conditions it seems to be possible to make a quality sustainable play space within urban Winnipeg. There is a site near the Ellice daycare where a small daycare play yard has been developed. Over time it has become an "organic" and complex play space capable of sustaining a number of children.[1] Working with relatively little area requires careful layout and choice of structures. The Ellice daycare contains a simple design which could be more effective if other site situations could be addressed.

Current Use of the Private Outdoor Space

Numbers playing in the play yard are usually similar to those sent on field trips or smaller (either 16 children with two adults or 8 children with one adult). The difficult access between the daycare and its outdoor space not only makes it hard to get loose parts from indoors to out, it also makes it awkward to send many children outside at one time.

In discussion with the daycare director it became clear that one of the biggest problems with the play space is vandalism. This varies seasonally. In summer

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[1] The author discussed this space with Heather Cram ,a local Landscape Architect,'96, but has not done any analysis on the space nor discussed it with the daycare staff. Although more urban than the Ellice site this play space is more protected physically, and the outdoor and indoor transitions are much smoother.

months vandalism is so severe that the daycare does not even try to use the space. In winter very little vandalism occurs but another problem arises. Snow accumulates in and around the play yard to the extent that the daycare workers no longer attempt to take children into it. The snow accumulation varies from year to year but the last two years, 1995 and 1996, have had so much snow that again the play yard was not useable.

Further analysis of the play area would clearly reveal the problems and the positive aspects of the daycare play space. However, such an analysis is not within the scope of this practicum. There are a number of checklists and tests which have already been devised by those writing recommendations for daycare, street and playground design. Some of these, such as Prescott and David's analysis of play units per child, focus on specific factors within the environment. Others, such as Francis' design review checklist attempt to accommodate all factors to be considered in the design of a private play yard, from social implications, to micro-climate, to child development. (Some of these tools are found in appendix A of this document).

Present Use of Outdoor Public Spaces

Information from Discussions with Daycare Staff

Because there are better spaces for play available in the surrounding neighbourhood, the daycare spends much of it's outdoor time in parks, recreation centers and at the local libraries. In order to arrive at these places, they walk or use public transport. The routes which they take range much further in summer months than in winter. Regardless of the season, the journey almost always begins by moving up or down Ellice Avenue. The daycare director noted that Ellice is used even when other streets would provide routes of similar length. (Warm Weather Routes Mapped, see Fig 7.2; Cold Weather Routes Mapped, see Fig. 7.3)

The current daycare director has been at the facility for nine years. The following are some of the things she had to say about the daycare's use of outdoor space:

> "In summer we use the parks around the area, especially the recreational facilities on Langside near Ellice. We use the green space park and the water park there. We also reserve the gym at the rec. center there and they will give us balls and things to play with.
> We haven't been in the daycare's park (their private outdoor space) all summer. The vandalism is just too much. Every day it's a mess, so we just leave it.

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We go to the (paddling) pool at John M. King (school) almost every
day, and we spend time there on the field and in the shade of the trees. We
sometimes do chalk drawings on the playground asphalt.

Usually we take the kids swimming at the YWCA pool all summer.
In the summer we walk to places that are near enough. We usually take a few
longer trips to the water slides at Vimy Ridge Park, and to the Dakota Water
Play Park in St. Vital.

In winter we use the daycare park a lot. The vandalism problem
usually goes away in winter. We also take the transit system to a lot of indoor
places. " (See Figs. 7.2 and 7.3, and Appendix F for more detail.)

Problems with the street area that she mentioned included the construction
this summer along an adjacent section of Ellice Avenue, which left no sidewalk
available to pedestrians. She described snow clearing on the sidewalks in winter as
"pathetic". Snow banks at bus stops also created problems.

She mentioned the bus stop across the street from the daycare as a particular
problem spot. The daycare uses that stop to wait at more than any other. Parents also
use it to drop children off and to carry on down Ellice to their different schools or
work. Problems she mentioned were no bench to sit on and no summer shade or
winter shelter.

Walks along the Routes with Daycare Participants

Discussions were held with the Daycare Supervisor, and one of the daycare
staff (see Appendix F) The places that they mentioned were mapped. The next step
was to walk or ride along the routes accompanied by a 5 year-old child who had
attended the Ellice daycare in the recent past. On some of these walks another child,
age seven, who had also attended the daycare, accompanied us. During these walks
the children were asked to talk about the things they saw along the way, especially if
they remembered them from their walks with the daycare. When they remembered
a place which they had been to with the daycare they were asked what they
remembered about the place. Sometimes they described places that we were going to
before we got there, but usually they remembered a place after seeing it.

The following maps describe the walks and the things which the children
noticed. There are also some comments about their actions as they walked along the
path. (See Figs. 7.4 - 7.7.)

Key

Routes taken - walking ⌇⌇⌇⌇⌇
           - by bus ∥∥∥∥∥

Frequently used bus stops ✱

Node - Frequently visited ●①
      - Sometimes visited ①

Route to:

YW/YW swimming Pool ▲①
Dakota Water Slides and Karen's House ▲②
Vimy Ridge Park Water Slides ▼③

Oriel's Community Center and Park ①
West End Community Library ②
Home Street Park ③
the Ellice Avenue Daycare ④
John M. King Wading Pool ⑤
John M. King Playing Field ⑥
Furby Tot Lot ⑦
Mallory Eliason Community Center ⑧
The "Green Park" ⑨
The "Water Park" ⑩

Scale 1:7500
0   75   150   225m

Figure 7.2 - Warm Weather Routes Used by the Ellice Avenue Daycare

Key

Routes taken	- walking
	- by bus

Frequently used bus stops

Node	*
	● - Frequently visited
	① - Sometimes visited

Daycare's Play Park	●
John M. King Field	②
Mallory Eliason Community Center	③

Route to:

YW/YW swimming Pool and Portage Place ● ▲ ▲
Centenial Library ● ▲ ▲
The Forks and Children's Museum ③ ▲
The Manitoba Museum and Planetarium ④ ▲

Scale 1: 7500
0   75   150   225m

Figure 7.3 - Cold Weather Routes Used by the Ellice Avenue Daycare

Key Walk Taken : Sept. 5/96, 11am

Along the way all curbs and walls to 30" ht. were walked along. All fences were used to run fingers along.

Scale 1: 7500

Route taken: walking
bus

Nodes arrived at
Nodes pointed out
Points of intrest -
fixed
semi-fixed
non-fixed

Bus stops used

① School Crest in tall limestone wall
② Top of Church Tower
③ 7-11 and the flower planters in front
④ Window of children's clothing store
⑤ West End Cultural Center -
"the dancing place"
⑥ Ornate wrought iron fence
⑦ Benches and trees in front of police
Office, "we sit there for snack"
⑧ Water park with "slides that squirt"
⑨ Play structure & motorcycle rocker
⑩ Cross walk with lights
① Low wall c.18" - flat top
② Outdoor play area for a daycare
③ YM/YWCA swimming pool

Figure 7.4 - Walk #1 to the YM/YWCA Swimming Pool, past the Mallory Eliason Community Center.

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Figure 7.5 - Walk # 2 to Ortéis Community Center , Past the West End Library.

Key

① weeds growing out of side of building
② barbershop pole and photos of hairstyles
③ Rainbow colored Pic - a - Pop sign
④ bracelets and fabric in shop window
⑤ grass and shrubs beside apartment
⑥ bench and garbage recepticle on corner
⑦ Library sign with "big brown" BFI box
⑧ 7 - 11 food store
⑨ blue carpet on house steps
⑩ truck route sign
● two apartment walls with white concrete
● brick jutting out of red brick wall
lots of trees and blue sky

Walk Taken : Oct.3rd,'96, 3:30pm

Various fences and walls were also noticed in the way. Tree guards and lamp posts were swung on. Nothing was noticed across the street.

Scale 1 : 7500
0   75   150   225m

Route taken: walking
                        bus

Nodes arrived at   ● ○
Nodes pointed out
Points of intrest -   ● ★ ☆ ✳
                fixed
                semi-fixed
                non-fixed
Bus stops used

72

Figure 7.6 - Walk # 3 to the Mallory Eliason Community Center and the Adjacent Water Park.

Figure 7.7.- Walk # 4 to Home Street Park.

Key

List of observations:

1. Hairdresser sign with "Chinese" writing.
2. Mailbox with silver medallion on it.
3. Silver minivan alone in parking lot.
4. Red fire hydrant.
5. Red van with "bone" shaped window.
6. Potato chip delivery truck by store.
7. Person on bike. "The cars could hurt him."
8. Tree with shiny yellow leaves.
9. Garage sale sign on tree. "What are they going to do to the tree?"
10. Pink curtain in upper window of house.
- Two choke cherries with red leaves. ●
- "Girl", old woman cleaning a mat.
- Leaves on the grass.
- Swings in a yard.
- Black mailbox with a golden eagle on it.
- Pile of four shopping carts.
- Bench in a yard.
- Wrought iron "curls" around house door.
- Slide and swing in a yard.
- Fire hydrant.
1. Green drainage pipe down side of house.
2. Teenagers crossing the street.
3. "The park near the video store."

Walk Taken : Oct.7,1996, 11:30 am

This route led through a residential area. Compared to the commercial streets it was very rich, full of delight and story. it also appeared to be safer.

Scale 1: 7500

0 75 150 225m

Route taken: walking

Nodes arrived at
Nodes pointed out
Points of interest - fixed
semi-fixed
non-fixed

Bus stops used

74

Analysing The Street Corridor Structure

The investigations of the Ellice Avenue daycare's use of streets combined with the previous literature review allows some hypothesis to be made as to the role that streets which are primarily used as pathways, can play in a young child's life. The design of a path's formation, contents, and sight lines affects the controls placed on the child's use of the path and subsequently of places which it leads to (see ch.2). To understand probable controls placed on young children presently using Ellice Avenue, the street was examined in terms of the safety, ease of access and comfort that it offered to caregivers and young children. (See fig. 7. 14) These three attributes of space are significant because adults control a child's use of space according to their presence or absence.

Children do not usually look for the safety or comfort aspects of a path. They do not look for the shortest or easiest routes. Instead they look for paths that sustain a sense of familiarity and belonging, give more information about the world around them, or provide a sense of delight.(See fig.7.14.) The pedestrian path along Ellice was also examined in terms of its qualities for providing wayfinding and a sense of belonging, information and delight.

Checklist for the Analysis or Design of Corridors

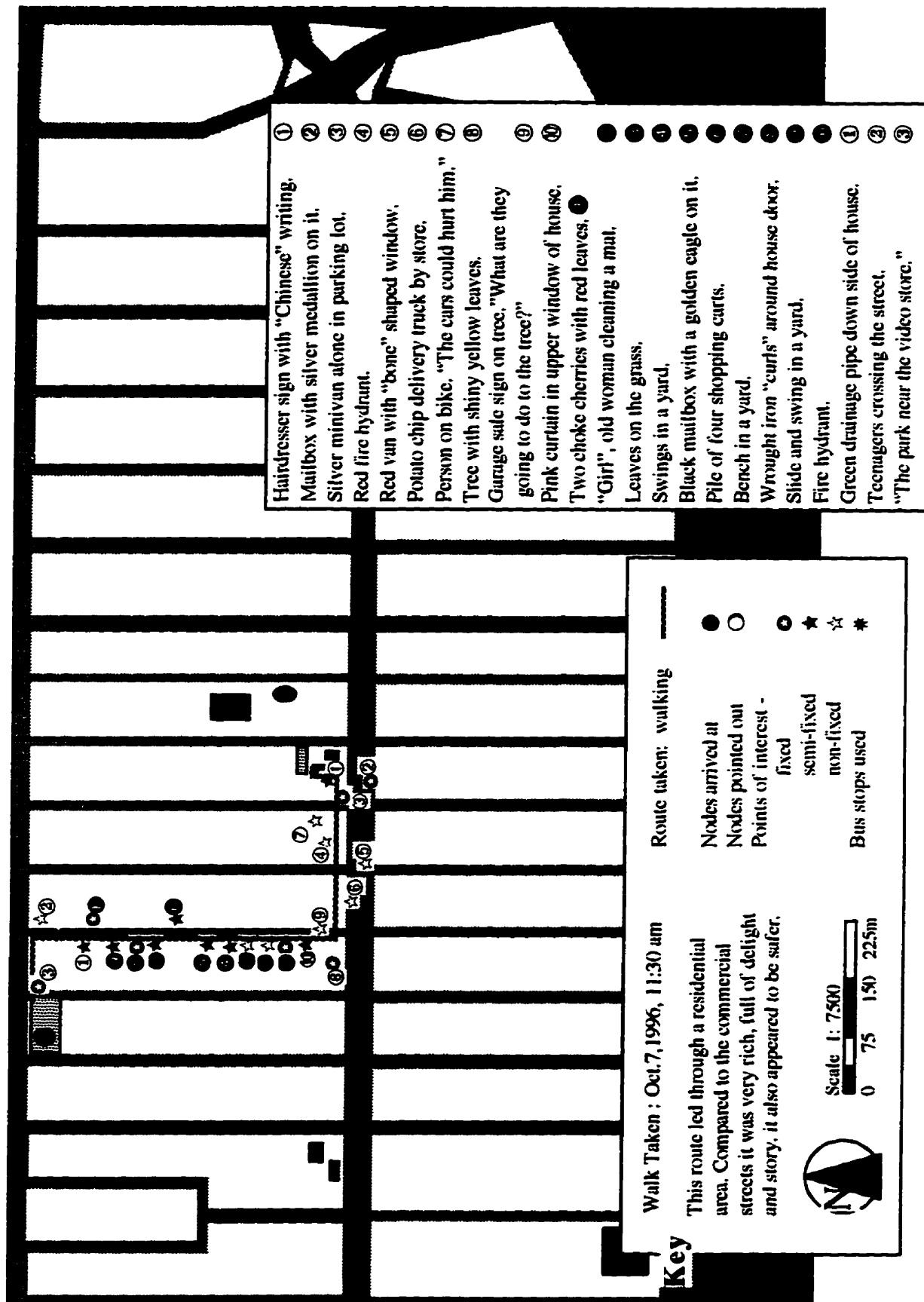|	attribute	categories within that attribute	
adult concerns	safety	- physical measures for safe play	
		- traffic	
		- pollution	
		- extreme cold and heat	
		- "unwanted" people	
	access	- easy movement - eg. in doors, up stairs	
		- inclusion in adult or school activities	
	comfort	- physical	- cold and wind
			- sun versus shade
			- rest places

```
                           - social        - feeling welcome
                                           - feeling safe from vandalism
                                           - feeling safe from violence


child's concerns    wayfinding  - recognising a place and identifying with it
                    & belonging - knowing where a place is in relation to
                                      other places
                                - being able to find the way "home"
                                - feeling welcome in a place
                    information on - the adult social world
                                   - the adult working world
                                   - the social world of older children
                                   - the school world of older children
                                   - the physical world - nature
                                   - machine and structure
                                   - the history & order that things happened
                    delight        - sensual stimulation (all five senses)
                                   - surprise and uniqueness- contrast of scale
                                              - color, sparkle and light
                                   - testing or changing their physical being
                                   - suggestions of myth or magic
```

**fig. 7.8- A Checklist for Analysis or Design of Public Paths used by Children and
their Caregivers** (See Appendix F for an extended version of this checklist.)

These six factors were mapped along the Ellice Avenue routes and rated on a
scale of one to five, one signifying big problems and five indicating excellence. This
process helped to define the types of problems and combinations of problems that
existed along the paths most frequently used by the Ellice Avenue daycare. It also
highlighted the positive points along the path.

Through this analysis, it became clear that there were distinct sections of the
path which had similar building formations and use types, and as a result had
similar issues that needed to be dealt with. The section of Ellice Avenue most used
by the daycare divides into five landscape types. (See Fig. 7.9.) Because it represented
the largest range of problems, the section west of the daycare which includes the

Key

landscape type ① - this section is characterised by the transition into a single family residential area combined with the small businesses clustered around Arlington, a major through street.

landscape type ② - this section is a mixture of commercial enterprises, often with dwelling units behind or above. - this section contains the businesses surrounding the junctions of Sherbrook and Maryland

landscape type ③ Streets with Ellice Avenue. These are main thoroughfares for the city. There are currently a number of vacancies in this area.

landscape type ④ - this section is similar to section 2 , containing a variety of small commercial enterprises. However it contains a number of apartment buildings while section 2 contains none.

landscape type ⑤ - this section is characterised by the back of the University of Winnipeg buildings and the large intersection of Ellice Ave. with Isabel St. There are small areas of landscaped trees and shrubs. It is known as a high crime area.

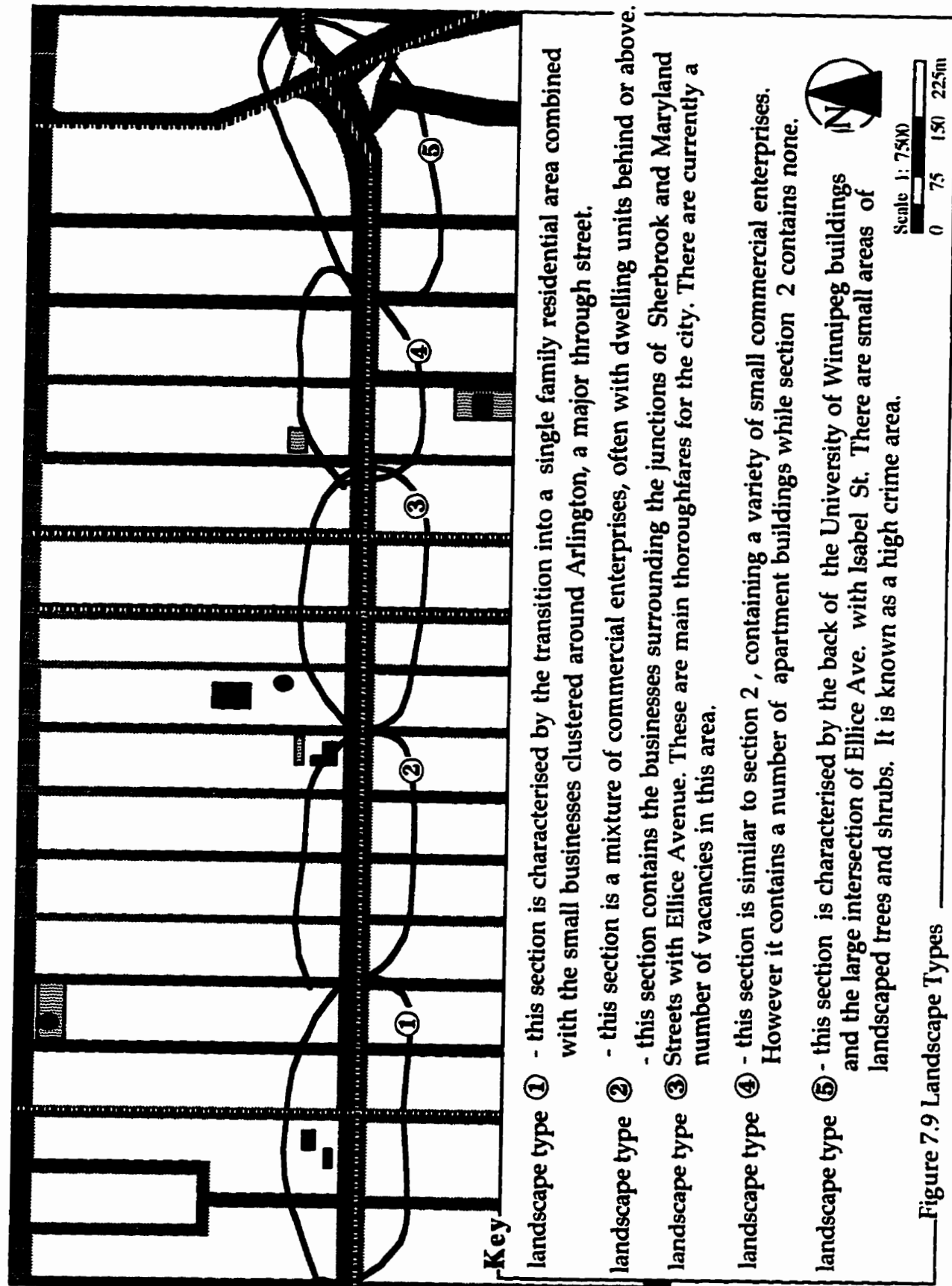Scale 1: 7500

0   75   150   225m

Figure 7.9 Landscape Types

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daycare itself was chosen for further analysis and final design demonstration.
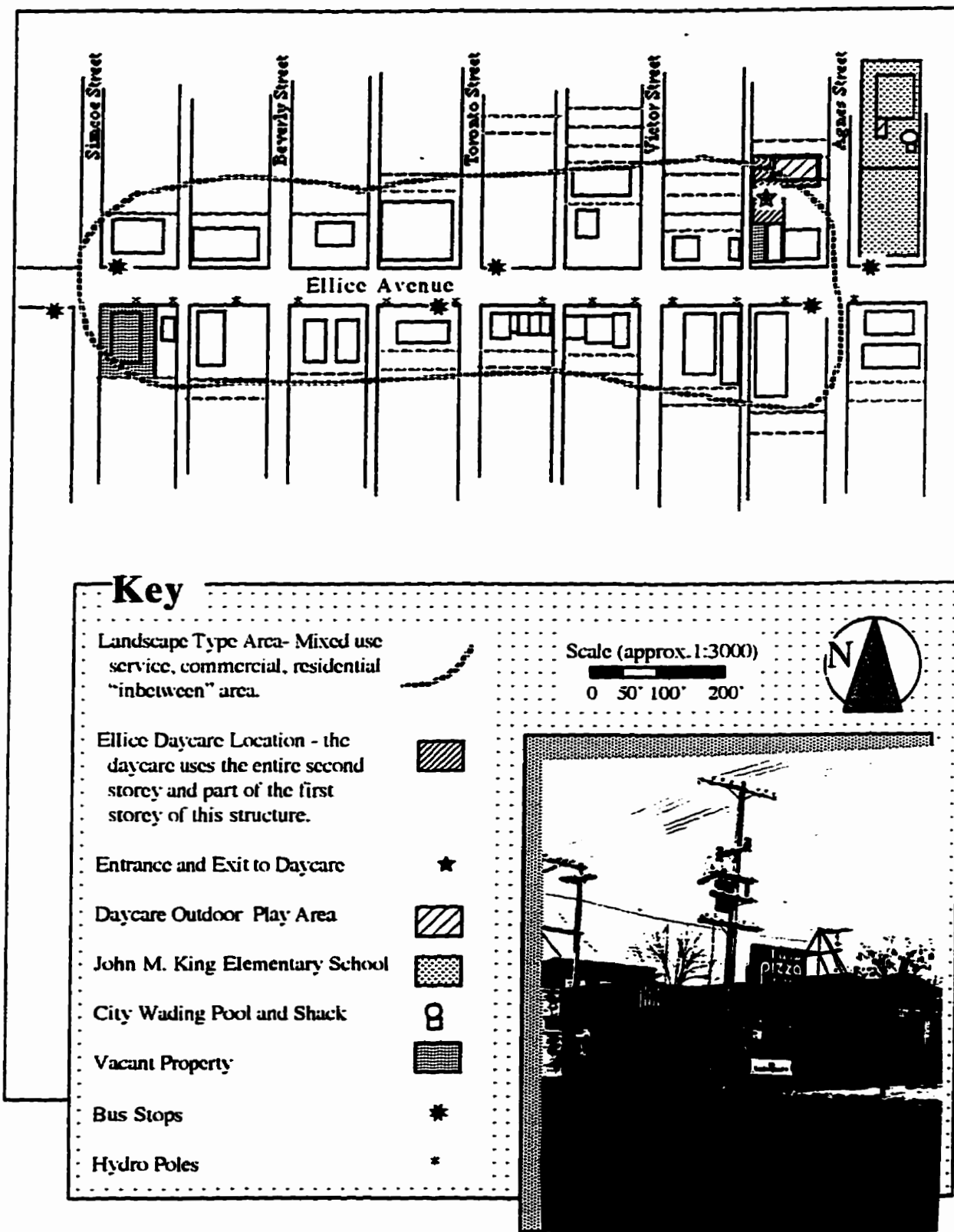
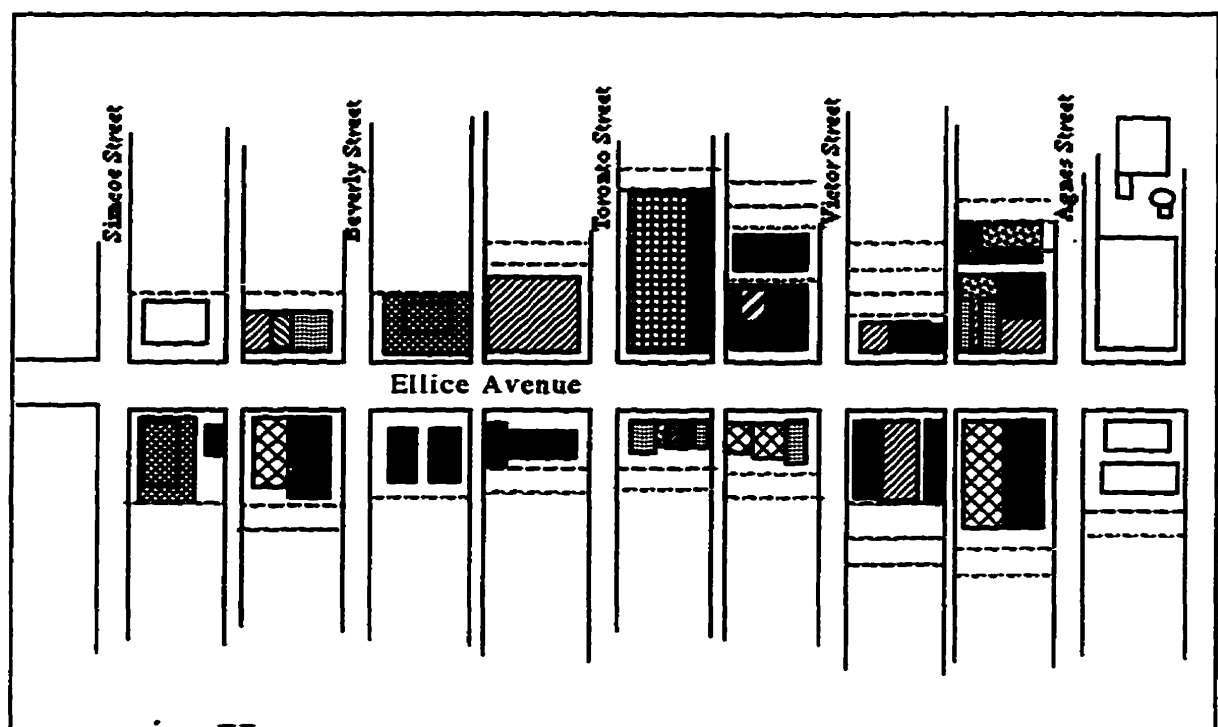**Section 2 of Ellice Avenue from an Adult Perspective**

Ellice Avenue sustains heavy traffic flow during rush hour periods. The nearby Maryland and Sherbrook Streets are main through roads and are heavily trafficked throughout the day. All this traffic is controlled at the intersection opposite the daycare by lights and pedestrian signals. They are present because of the great number of accidents which have occurred, and continue to occur, between traffic and children around John M. King School. Section 2 of Ellice Avenue runs from Agnes Street to Simcoe Street. It contains no major intersections.

The character of Ellice as a whole is neither residential, commercial or light industrial, but in this section the commercial businesses dominate. The type of commercial ranges from wholesale auto parts, to small family run restaurants (See Fig. 7.11.) Within section 2 the building types do not exceed two storeys and there are large sections of street level parking. Buildings date between 1900 and 1980. The older structures are zero lot line, commercial residential mix and 2 storeys. Along the side streets single family residential housing clearly dominates. Lots are generally 30' at street front x 100' deep. Some houses date back as early as 1904, but most were built between the two world wars. All housing has front and back lane access. West of the daycare, the side streets are lined with mature elms.

This area of the city boasts such infamous attributes as the highest rate of unemployment in the city, together with the lowest average income. The community includes several strong ethnic groups which change as new groups of immigrants move to the city. Ellice Avenue istelf reflects the presence of many ethnic groups because many businesses have chosen to use ethnicity as a marketing tool. (See Fig. 7. 12.) Although not reflected in the bussinesses along Ellice Avenue there is a large native population residing in the area.

Exposure to the natural elements in walking and waiting areas, and lack of inside edge or attraction away from the street are problems that reoccur within the area. Some attempts have been made to address these problems with the addition of trees, fences and pedestrian level lighting. (See Figs.7.13 and 7.14.) As a whole this section of Ellice Avenue contains some places which have much to offer a young pedestrian, but it has other spaces which are comparatively blank. Safety from the elements or from traffic are a constant concern for care givers, and children find little to attract or hold their interest.

Street labels on map: Simcoe Street, Beverly Street, Toronto Street, Victor Street, Agnes Street

Ellice Avenue

Key

Landscape Type Area- Mixed use service, commercial, residential "inbetween" area.

Ellice Daycare Location - the daycare uses the entire second storey and part of the first storey of this structure.

Entrance and Exit to Daycare ★

Daycare Outdoor Play Area

John M. King Elementary School

City Wading Pool and Shack

Vacant Property

Bus Stops

Hydro Poles

Scale (approx. 1:3000)

0   50' 100'   200'

N

Figure 7.10 - Section 2 of Ellice Avenue - Area for Detailed Study

Key

- Use types presented are taken from ground floor only.
- The dominant building types are one storey industrial or smaller two storey structures. Many smaller structures have attached residential units.
- Places outside the defined landscape type area are not identified.

N

Scale

0 50' 100'   200'

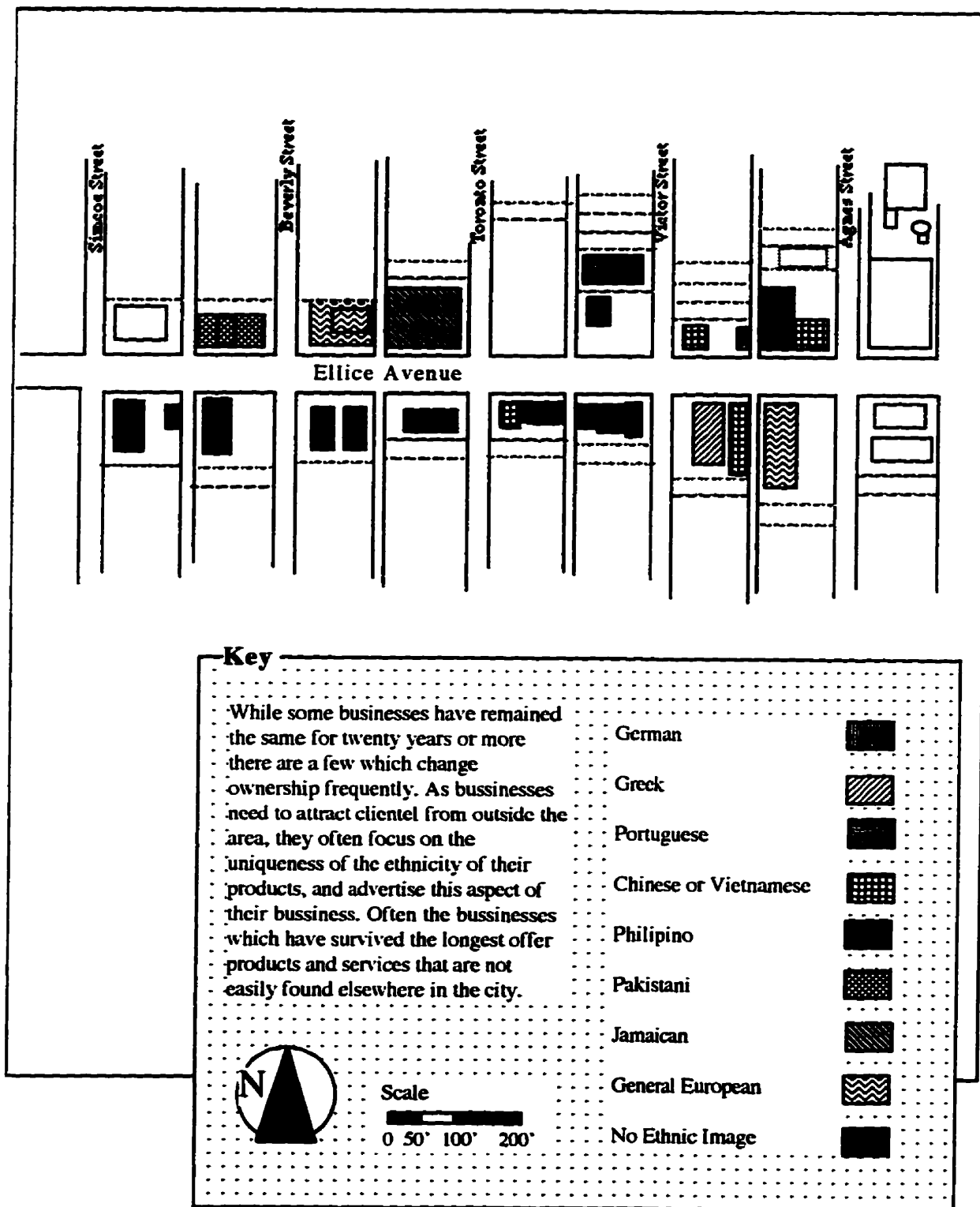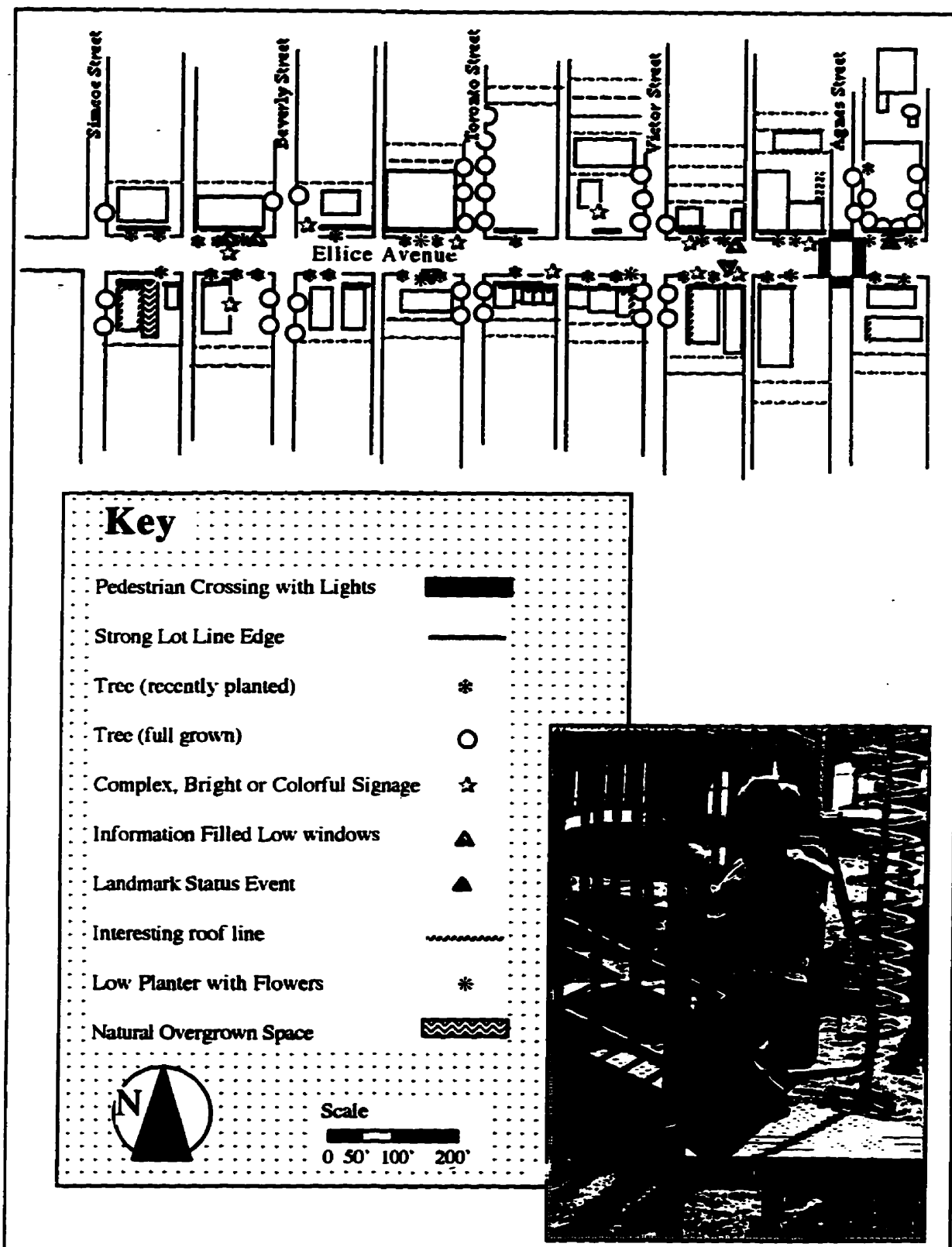|	
Church or chapel or associated building	▓
Hairdresser	■
Childcare Facility	▒
Medical Doctor / Chiropractor	▤
Restaurant or Lounge	▨
Automotive Repair	▦
Travel Agent	▧
Commercial - clothes / jewellry / wedding	▥
- food / specialty food	▨
- variety and video	▨
- appliance or auto parts	▨
Commercial Paid Parking	▦
Parking areas - seen from the daycare or street; all associated with adjacent businesses	■
Residential	■

Figure 7.11 - Section 2 of Ellice Avenue - Types of Uses

Streets labeled: Simcoe Street, Beverly Street, Toronto Street, Victor Street, Agnes Street

Ellice Avenue

Key

While some businesses have remained the same for twenty years or more there are a few which change ownership frequently. As bussinesses need to attract clientel from outside the area, they often focus on the uniqueness of the ethnicity of their products, and advertise this aspect of their bussiness. Often the bussinesses which have survived the longest offer products and services that are not easily found elsewhere in the city.

German

Greek

Portuguese

Chinese or Vietnamese

Philipino

Pakistani

Jamaican

General European

No Ethnic Image

Scale

0 50' 100' 200'

Figure 7.12 - Section 2 of Ellice Avenue - Ethnic Image Projected

Key

Pedestrian Crossing with Lights	▬▬▬
Strong Lot Line Edge	———
Tree (recently planted)	✳
Tree (full grown)	○
Complex, Bright or Colorful Signage	☆
Information Filled Low windows	▲
Landmark Status Event	▲
Interesting roof line	～～～
Low Planter with Flowers	✳
Natural Overgrown Space	～～～

Scale
0 50' 100' 200'

Figure 7. 13 - Section 2 - Positive Existing Elements and Aspects

Key

Although it cannot be shown on the map there are no rest places provided throughout this area. One block to the west and to the east benches are available.

There is no generic signage or repetitive construction in section 2, although it does occur further along Ellice.

Scale

0 50' 100' 200'

N

Climatic/Shelter negatives
- open - no shade ○
- closed - no sun ●
- open and low - extreme winds ■

Extensive Vandalism or Vacant Property

Poor Access Point ◆

No vertical definition of lot line edge

Extended Blank Wall - at child's sight line

Extended Parking Area - few visual anchors

Figure 7.14 - Section 2 of Ellice Ave. - Existing Negative Elements and Aspects

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IMAGES OF ELLICE AVENUE ~   FIGURE 7·15

Chapter 8
Ideas for Change

There is often a large gap between the accumulation of environmental design research or knowledge and it's application in the creation of places. There are many factors that contribute to this problem. Designer, government, and public attitudes all take time to change, but an equally demanding problem is that of translating an idea of how a place could be into actual nuts, bolts and spaces for piling snow.

The Street as a Designed Path

Traditional streetscaping is not consistent with designing for the needs of small children. An example might be placing the same light standard, fencing and paving pattern along the length of the pedestrian path. Such a streetscaping has been done along Ellice Avenue. Although the streetscaping project did many good things, including the planting of many street trees, the sameness of each element within these introductions seems to mask rather than reveal what was already there. The tendency to decorate the passageway rather than to emphasise the presence of the spaces along it not useful in supporting safety, wayfinding, or providing information to the passerby.

There is a balance to be struck between wanting to display a cohesive, easily identifiable image and exposing the uniqueness and variety already installed by the street's process of formation. The unification created by traditional street designs can produce an effect of delight in adults. The colonnades of full grown elms found on some side streets in the area do this effectively. However, small children do not see things in the same way that adults do. They are more likely to be delighted by unique events that they find along the path. (See p.39 and the maps of walks in Ch.7.)

Writers interested by the street's capacity to teach and to express society, both to children and adults, have been frustrated by the lack of knowledge available on how a street can be made to perform effectively in it's many educational functions.

The Ellice area is highly variant and rich by its very nature. Introducing the same pattern of bench and lightstand throughout is likely to create wayfinding problems for children. In adding to the present path, care should be taken that elements or groups of elements contain qualities of uniqueness while still clearly

displaying their function.

The basic structure of Ellice Avenue is already comfortable and legible. The symmetry of the Avenue is very direct, moving outward from the street's center line, to moving traffic, to parked traffic, to the curb where there is often a street tree, the sidewalk and finally the vertical building wall, fence, or curb. The pattern is strong enough that in places where this last vertical element is missing pedestrians are left feeling a little lost.
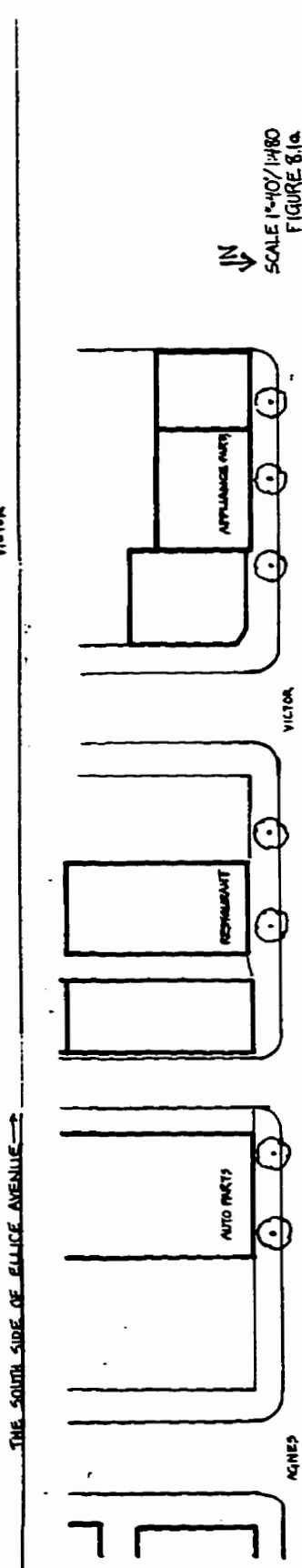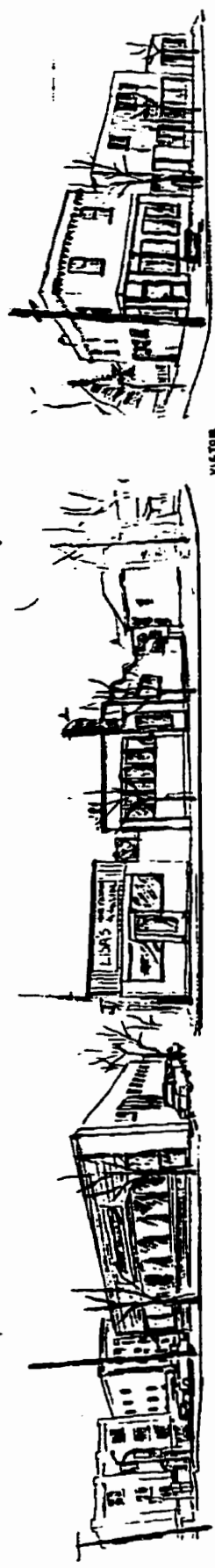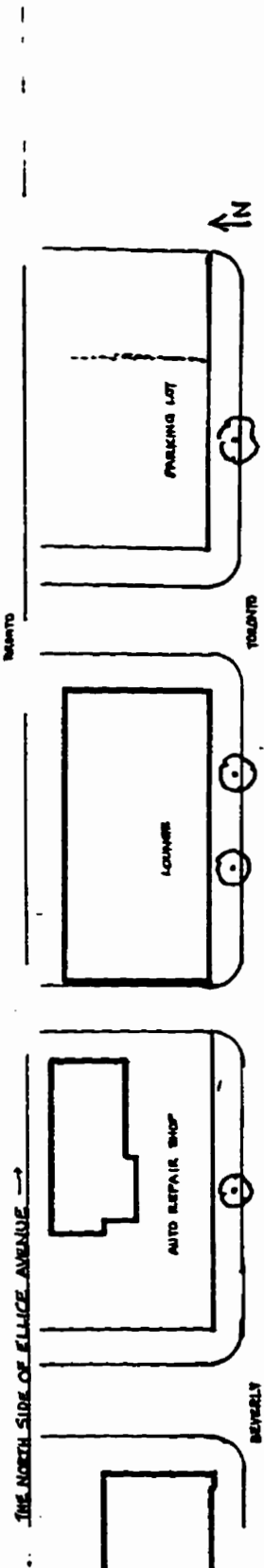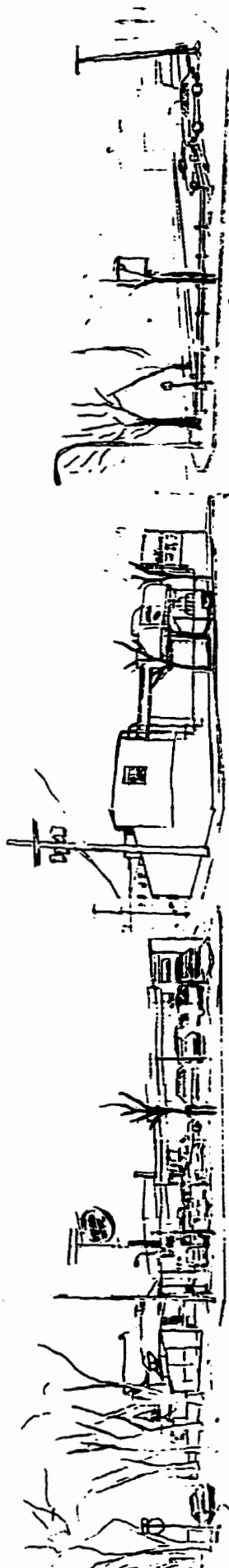
As a pedestrian walks along Ellice Avenue they can read the use of the streets and pathways through their size. Maryland and Sherbrook, the two major streets are noticeably larger than any of the other cross streets. There is even a clear feeling of approach moving towards the Sherbrook and Maryland intersections because the buildings become bigger and higher as you approach them. Inversely, the residential side streets and their pedestrian paths are smaller than Ellice Avenue. The hierarchy of the path is easily legible.

Rhythm and repetition is present in the regular crossing of streets with the avenue. A street , (12' of pedestrian path, 24' of vehicular path, another 12' of pedestrian path), and then a backlane (16' wide) intersect Ellice Avenue at regular intervals. Sometimes the backlane is missed out, but not so frequently that the rhythm is lost. Sometimes the cross street is larger, creating a pause in the rhythm, but as this exception is passed the regular rhythm resumes. Even at the far east of the path, just beyond the University of Winnipeg, where it appears that the rhythm is broken, it is in reality only changing direction as two grids intersect. The rhythms of Ellice Avenue resume just beyond the study area. The five block area chosen for detailed study strictly follows the basic rhythm of cross streets and lanes. A further , not unrelated, rhythm is created through the bus stops that occur at two block intervals along both sides of the street.
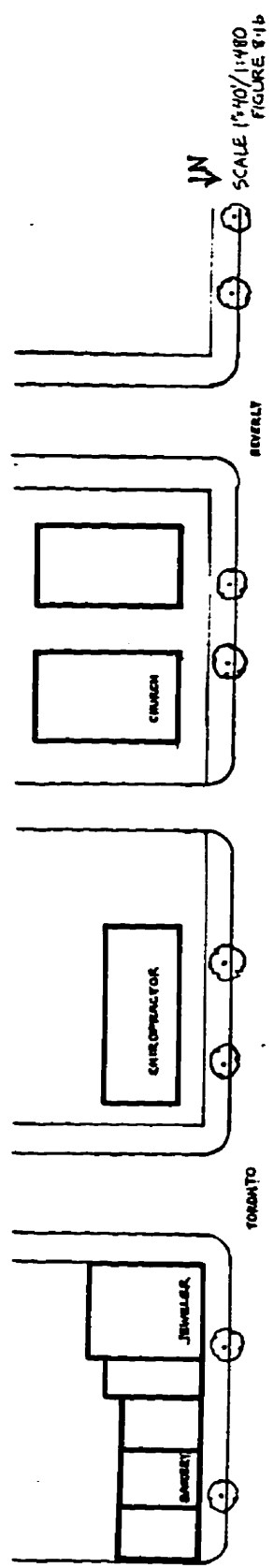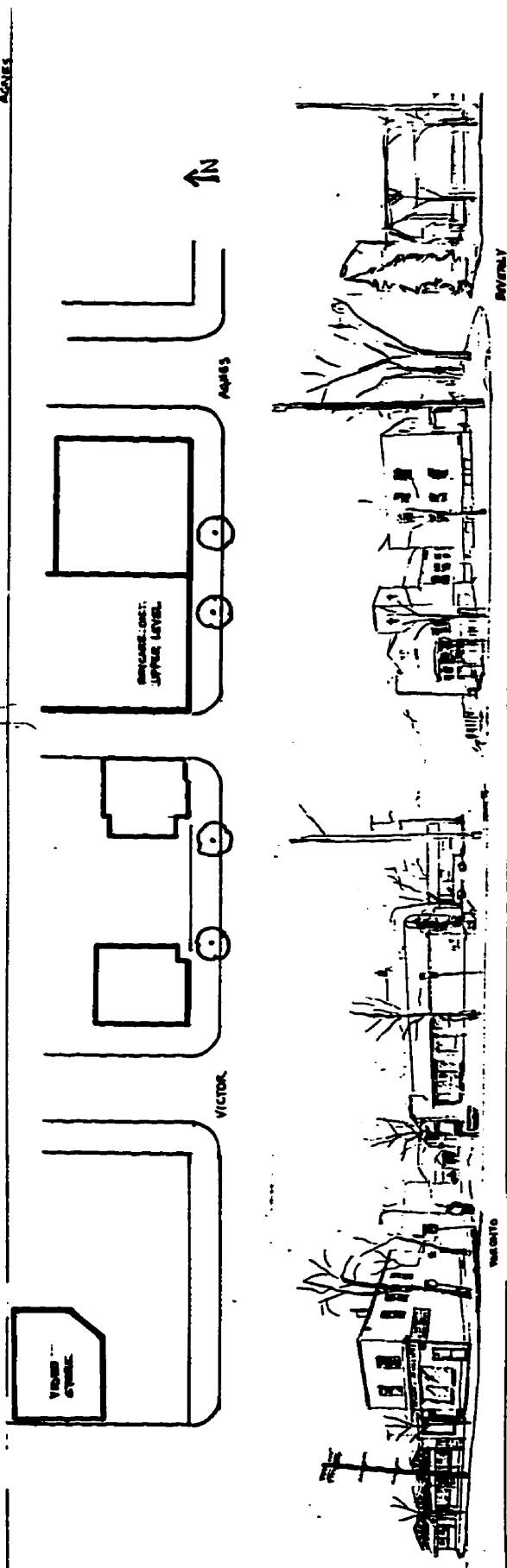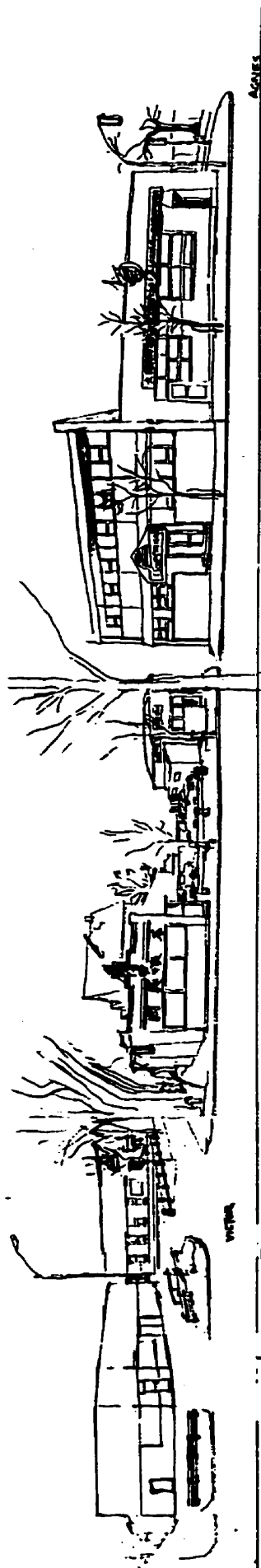
Such rhythms in street structure help with safety and wayfinding. They provide an easily legible street with options for exit at regular intervals. The avenue with, it's symmetry, it's rhythms and it's axial qualities, acts as a datum[1] organising for the set of buildings and activities along it into a coherent whole.

Often the most beautiful pieces of art are those that take every day things and let us see them more clearly or in a different light. Sometimes the most significant

---

[1] datum - thing given, known, or assumed as the basis for a reckoning, reasoning, etc. (Webster's New Dictionary) A datum organises a random pattern of elements through its regularity, continuity and constant presence.(Ching, 1979)

THE NORTH SIDE OF ELLICE AVENUE →

BEVERLY · AGNES · BEVERLY · AUTO REPAIR SHOP · SUNOCO · PARKING LOT · TORONTO · N

THE SOUTH SIDE OF ELLICE AVENUE →

AGNES · AUTO PARTS · RESTAURANT · VICTOR · APPLIANCE PARTS · VICTOR · N

SCALE 1"=40'/1"=180
FIGURE 8.1a

SCALE 1"=40'/1:480
FIGURE 9-16

piece of landscape architecture consists only of placing one stone, one post or one tree so that it and the environment around it become more real than they were before. Certainly the suggestions here cannot be elevated to those levels, but they are an attempt to move towards revealing the everyday, existing environment and drawing people into participating in their surroundings. Changes and additions try to emphasise rather than mask the exiting patterns, allowing the various activities and histories belonging to the street to affect the street itself.

Changes to the Pedestrian Pathway

Simple adjustments or additions along Ellice Avenue could help to bring out the patterns that already exist within it's structure.

Rhythms could be emphasised by providing public phones, shelters and benches at every second bus stop, or placing special paving patterns at each street crossing, with lesser patterns at each lane. Such a pattern could continue even where the lane does not cross, adding an element of delight and understanding. This is not to say that the pattern for each street should be the same. There could be a change in color or in shape for each side street and at the lanes the two shapes or colors meet. (See Fig. 8.2.)

The present form of the path could be reinforced by continuing a vertical edge at lot line more consistently. Vertical edges at the lot line provide children with an object to touch and a guide to follow. Edges could be raised or shaped to give shelter in open areas. Landmarks could be foreshadowed before they come into view. Interesting shapes in existing buildings could be echoed elsewhere on the street. There is also potential for the creation of a vertical rhythm which could counterpoint the rhythm of the streets and lanes. All of these add teaching possibilities to the street.

With the individual buildings along the street comes a variety of experiences for passing pedestrians. Those that have big approachable windows displaying enticing or descriptive goods, or describing possibilities brought by the activities inside (eg. hairdressers and travel agents) already give a great deal to the passing child. Others which sustain the privacy of indoor activity could potentially use their building faces to bring an identity to the building and an association with the child. Possible additions include low planters or window boxes, doormat type paving patterns, tiles with pictures drawn by children of the activities inside, or even the presence of "tools of the trade"s fixed within or adjacent to the building's facade.
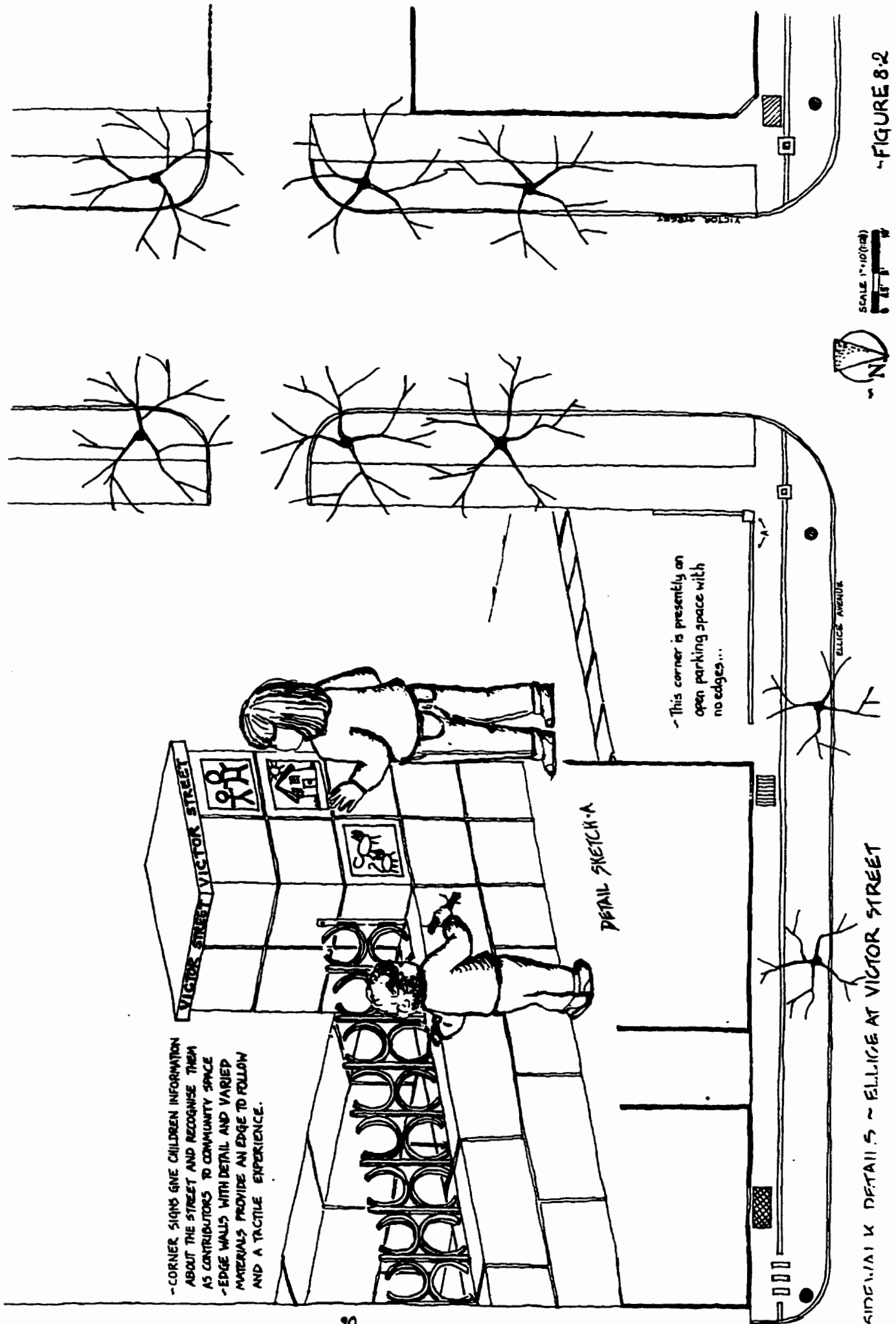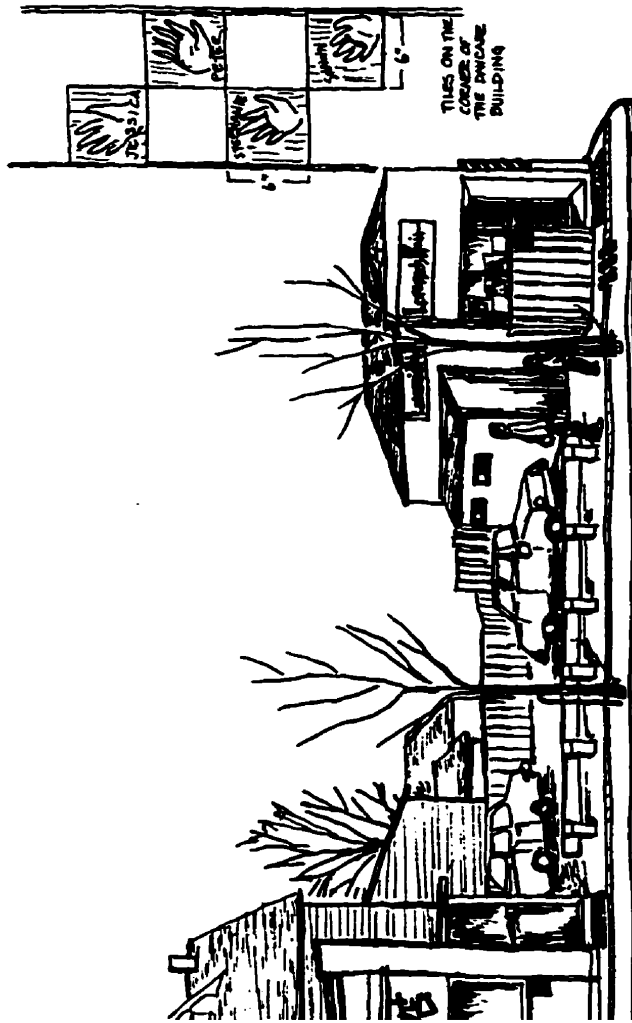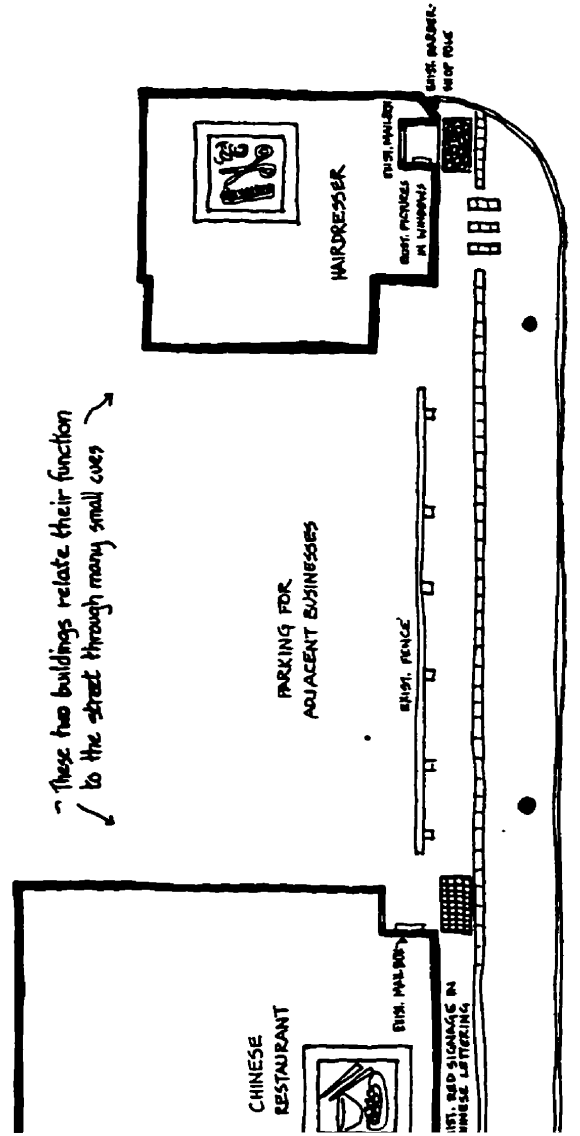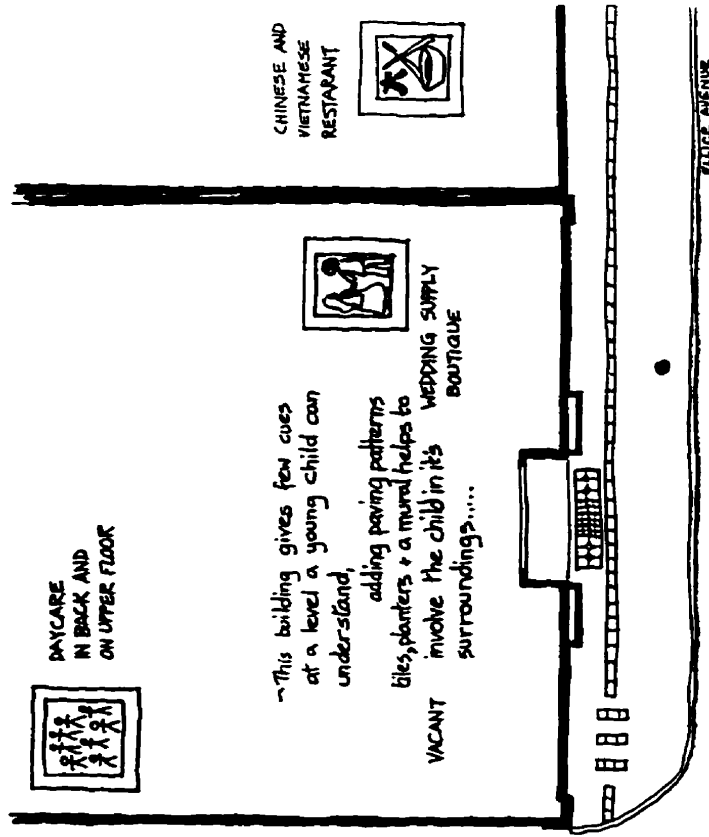
~CORNER SIGNS GIVE CHILDREN INFORMATION ABOUT THE STREET AND RECOGNISE THEM AS CONTRIBUTORS TO COMMUNITY SPACE

~EDGE WALLS WITH DETAIL AND VARIED MATERIALS PROVIDE AN EDGE TO FOLLOW AND A TACTILE EXPERIENCE.

DETAIL SKETCH·A

~This corner is presently an open parking space with no edges...

ELLICE AVENUE

VICTOR STREET

SIDEWALK DETAILS ~ ELLICE AT VICTOR STREET

~FIGURE 8·2

SCALE 1"·10'(1:18)

~N

90

CHINESE AND VIETNAMESE RESTARANT

DAYCARE IN BACK AND ON UPPER FLOOR

~This building gives few cues at a level a young child can understand,
adding paving patterns tiles, planters + a mural helps to involve the child in its surroundings.....

VACANT

WEDDING SUPPLY BOUTIQUE

TILES ON THE CORNER OF THE DAYCARE BUILDING

~These two buildings relate their function to the street through many small cues

PARKING FOR ADJACENT BUSINESSES

BRUSH FENCE

HAIRDRESSER

EXIST. BARBER-SHOP POLE

EXIST. PICTURES IN WINDOWS

EXIST. MAILBOX

CHINESE RESTAURANT

EXIST. MAILBOX

EXIST. RED SIGNAGE IN CHINESE LETTERING

BALFE AVENUE

SCALE 1":10'(1:120)

(N/A) —FIGURE 83

Corners are points of transition and benefit from details that aid identity and wayfinding. (See Fig.8.2.) This is particularly true of corners where cross streets lead to significant community spaces. Details such as picture or symbol signage could also help by providing interest at places where the forward part of a group of daycare children could wait for others to catch up.

Strong elements which are already part of the streetscape should be used in better ways rather than adding more elements to an already crowded passage way. Hydro poles are one such element which have a dominant presence in the area. There are presently three of these towering structures on each of the short blocks on the north side of Ellice Avenue. Some of these poles could be painted or carved before erection, adding a human touch to the industrial feel they give to the street. (See Fig. 8.4.)
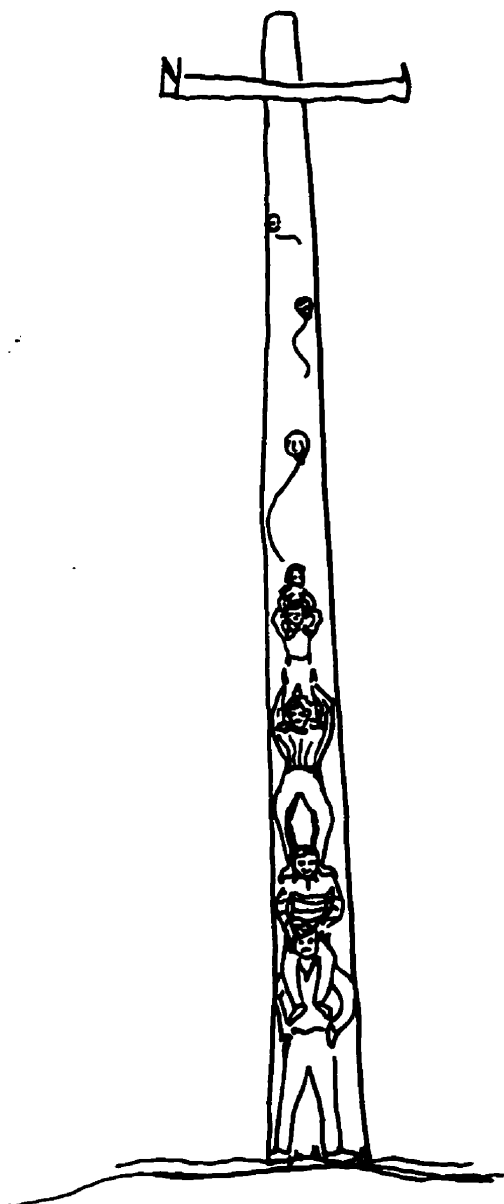
Waiting places

Waiting places, such as bus stops and rest areas, have a different set of needs from passing places. Essential to them is an edge for children to sit on or lean against while the caregiver deals with other things. For younger children it is useful if this edge is somewhat enclosed so that caregivers can control any sudden urges to move on the child's part. The more interesting the resting place, the easier it is to keep the children within it occupied. There should be elements which are distinct, and give identity to the waiting place, so that the child can recognise the place and develop an attachment to it. There should also be elements within the space which change with each visit. Such elements can be related to changing light, such as prisms, or interesting shadows. They can be related to wind, such as flags or weather vanes, or they can be related to seasons, such as flowers, shrubs or snow enclosures.
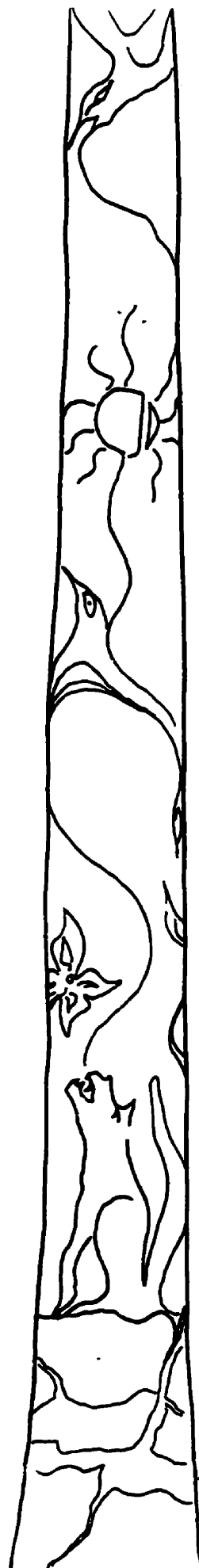
Sites with Potential

There are certain locations along Ellice which present particular and acute problems for the small child and caregiver. Two of these areas were chosen for further design exploration. What is presented in the following drawings is just an example of what could be done. Any real project would have to be carried out with the input and co-operation of the businesses and land owners of the properties involved. It would also benefit from any input from residents of the neighbourhood.

Because the diverse mix of cultural influences is such a strong aspect within the area it was felt that an idea which could strengthen the small child's identity
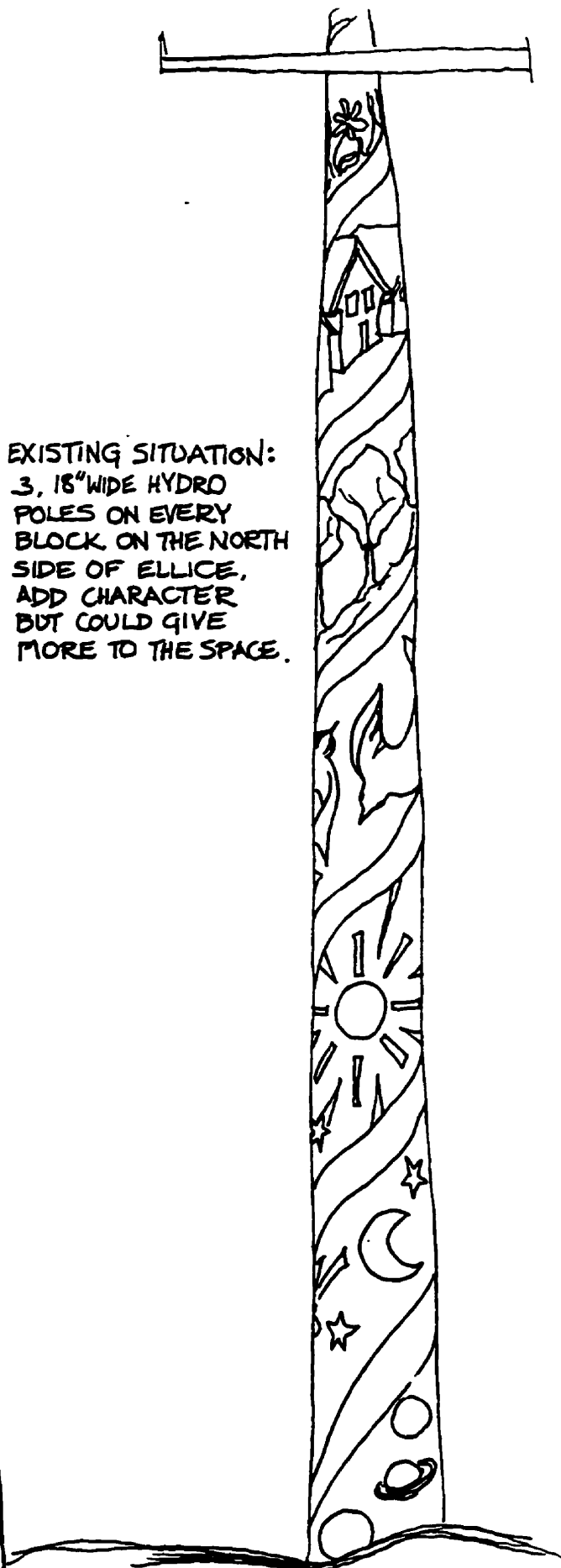
EXISTING SITUATION: 3, 18"WIDE HYDRO POLES ON EVERY BLOCK. ON THE NORTH SIDE OF ELLICE. ADD CHARACTER BUT COULD GIVE MORE TO THE SPACE.

— Let local artists submit proposals for designs.

HYDRO TOTEMS

Figure 8.4

with those cultures should be used within the concept of the places. Around the world children are told tales about animals, not only to entertain, but to illustrate human tendencies, explain animal characteristics and teach moral lessons. The animals in these tales help to explore the child's identity and to explain important facets of society. Children themselves often enjoy identifying and acting out the characteristics of the animals.

The first site (Fig.8.5) is located across the street from the daycare. It was pointed out as a problem spot by the daycare supervisor and by other caregivers that were asked about problems they experienced in the area. The site contains the main bus stop, used by both the daycare and by parents coming and going with their children. The building structures around the open parking lot space create a strong wind in winter while providing little shade on hot summer days. There is no edge along the lot line except the irregular parking of vehicles from the adjacent auto parts dealer. This presents problems of safety and discipline because with little else to attract their interest, children are constantly attracted to the action at the curb. There are no possible resting or even leaning places near the bus stop. The combination of problems adds stress, discomfort and confusion to the already difficult task of keeping small children in one place for any length of time.

Little Rooster and the Heavenly Dragon

The animal tale that was chosen for the site comes from China. In the tale the celestial dragon tricks the rooster into lending him his golden horns. He persuades the rooster to trust the testimony of the centipede as to the dragon's good character. The centipede, because of his fear of the dragon, tells the rooster that the dragon is trustworthy. Of course the dragon never returns with the golden horns, and to this day the rooster is calling to the skies telling the dragon to bring them back.(See Fig.8.5).

The animals in this story provide some interesting shapes to play with, within this fairly compact space. In the suggested design the centipede's sinuous body on the ground is echoed by the dragon's airy ribbons in the trees above. The rooster, while not actually present is suggested by a large fence post that he might choose to perch on. The setting in a farm yard, while not implied by the construction materials of concrete, stone and tile, is supported by a small grouping of plant material behind the adult seating area. (See Fig.8.6).

LITTLE ROOSTER AND THE
HEAVENLY DRAGON
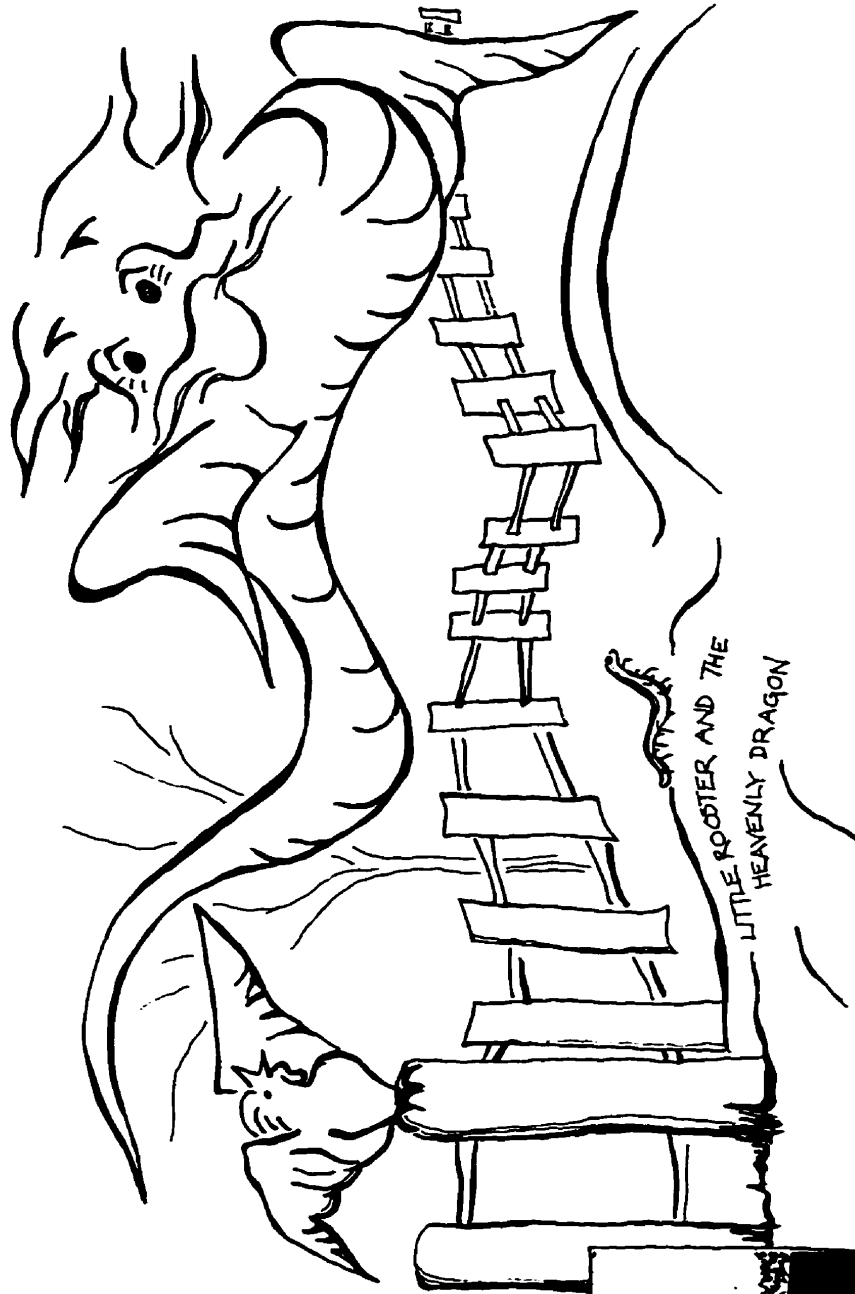
THE SITE: A WELL USED BUS STOP ACROSS ELLICE AVE.
FROM THE DAY CARE. TRAFFIC LIGHTS AND
PEDESTRIAN CROSSING LIGHTS MAKE THE
CORNER A GOOD PLACE FOR CHILDREN TO CROSS.

PROBLEMS: A WIND VORTEX REINFORCES WINTER COLD
-NO SHADE FROM THE SOUTH SUN IN SUMMER
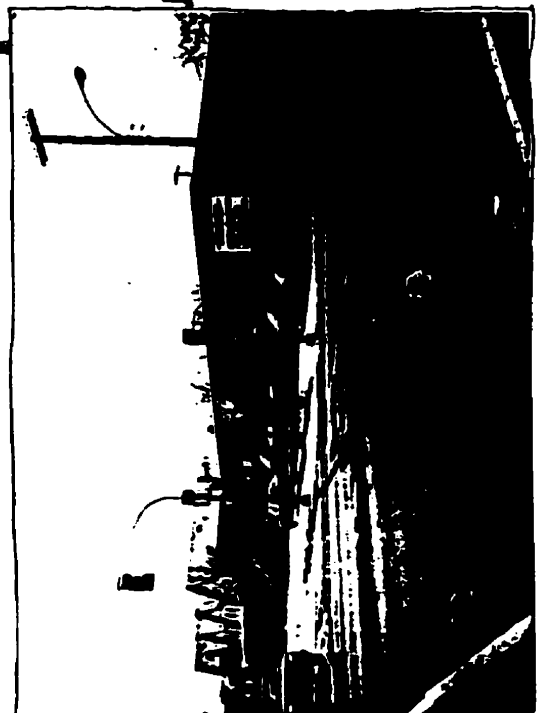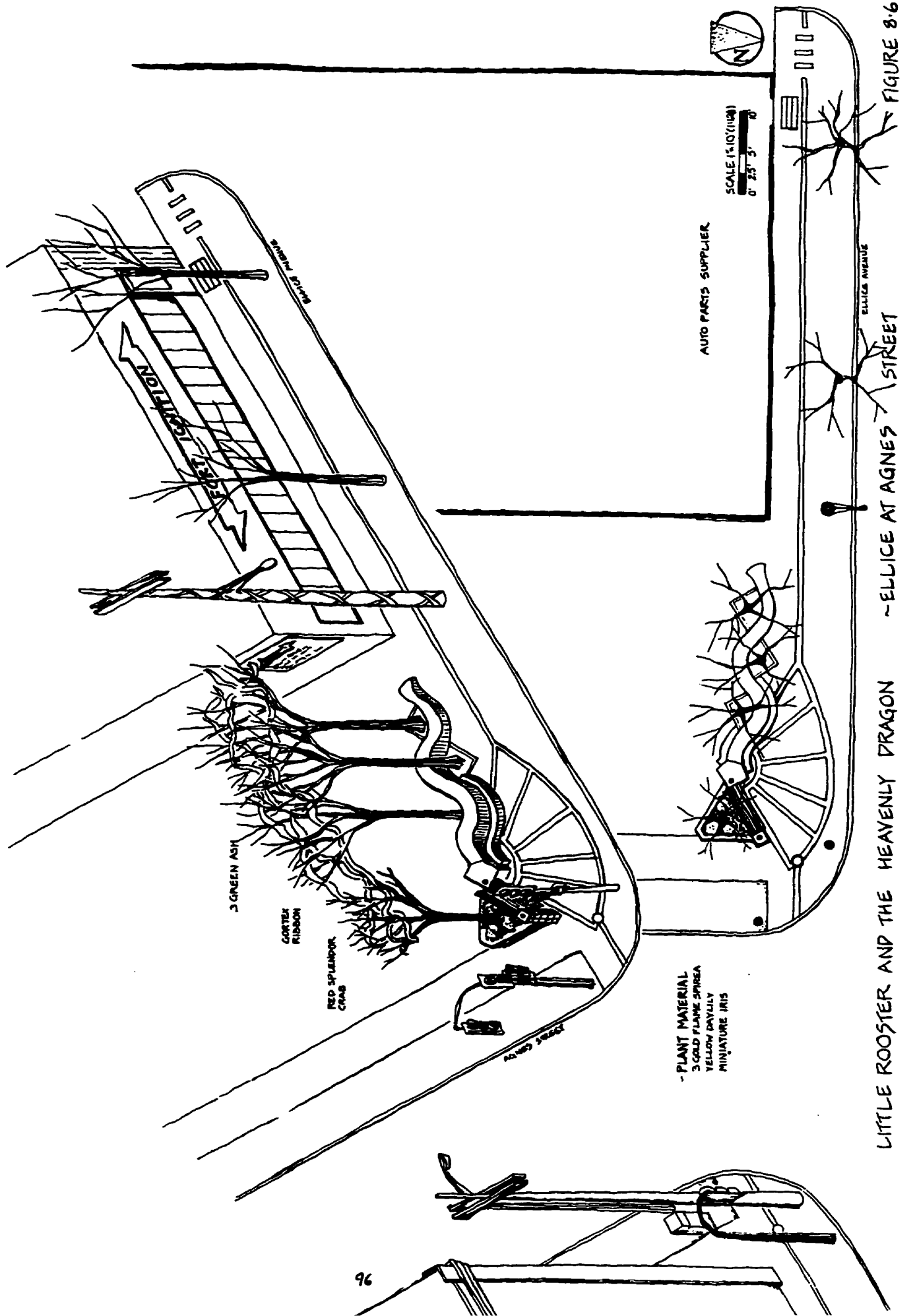-NO SEATING OR INTEREST AWAY FROM THE STREET.

FIGURE 8.5

LITTLE ROOSTER AND THE HEAVENLY DRAGON   ~ELLICE AT AGNES~   FIGURE 8·6

While an inset bench provides adult seating, the low step beside the curving wall allows small children to sit lower down, or to climb up onto the wall, level with the adult seating. The trees will eventually provide sufficient shade in summer. As they grow, they will not only give some shelter from winter wind but they should decrease the severity of the existing wind vortexes. In the mean time, the rooster perch and centipede head can provide anchors for a small wind and sun shelter over the adult bench area[2] . The story of the rooster and the dragon, written in Cantoneese and English, is placed on the perch so that it can be read while sitting.

Imagine that you are there watching this space. This is the second summer that the wall, paving and plantings have been in place. Consider how the new elements provide possibilities for activity and positive interaction for the children. A group of daycare children are waiting for the bus. The two smallest, in a twin stroller sit beside a caregiver, close to the bench. One is watching the movement of a sparrow hopping in and out of the ribbons on the crabapple tree. The other is fascinated by the moving patterns of leaves that the sunlight is projecting on the pavement. Three older children are kneeling on the bench beside them. One has spotted a squirrel darting under the daylily leaves. The two beside him are bobbing and straining to catch a glimpse of it. A boy sitting on the wall is poking his sister on the step in front of him. Another pretends to slide down the slope of the wall into his buddy. Two girls are trying to count how many ribbons are in the trees above but they keep getting different numbers and cannot agree on the amount. Three children are huddled at the base of a tree following the progress of caterpillar along a crack in the tree grate. One boy lies flat, his back against the wall, so that he can feel the curve as it rises and falls. A caregiver calls to him to sit up because the bus will soon be there. The bus arrives. Holding hands, in twos, the children mount the stairs and are whisked away.

A few moments later a mother walks by. Her three-year-old runs happily along the waves of the wall as he holds his mother's hand. She pauses to see if the daylilies have any scent. The little boy stops, both feet on the hexagon at the junction of Agnes Street. At a nod from his mother he rushes forward from the hexagon to press the crosswalk button. When the light changes they cross, hand in hand.

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[2] This suggestion is provided to demonstrate the point. The writer recognises that the complete bus shelter design is not provided.

Later in the afternoon two of the daycare girls are back at the bus stop. Their mother has picked them up and they are on their way home. They are playing tag, scrambling back and forth over the centipede wall. Soon their mother will intervene, but for now she sits back and watches them. On the other side of Ellice a bus passes. It stops two blocks away at the second site chosen for modification.

This site is located just west of the daycare, on the north side of the street. It consists of a large parking lot, spanning the entire block. About half of the area is parking associated with a local pop and video store. This site was originally a gas station. The other half is a commercial parking lot surrounded by a low fence. There is a bus stop located at the far west corner.

While the low fence on portions of this area does provide an edge, and the clear view to the lines of mature elms along the side streets add a beautiful natural element to the scene, there is little else to provide interest or protection from the elements.

The Journey of Amikoonse, Little Beaver

The story of a journey was chosen as the inspiration for this location. In this modern tale from the Ojibwa nation[3] a young beaver who was raised by a boy, leaves the human village and travels through the forest until he finds other animals like himself. On the way he meets a bird who asks him why he is so far from the big puddle of water where the other beavers live. A little further along he meets an owl who shares his tree and performs a ceremony asking the Great Spirit to guide him. The little beaver experiences many new things on his journey. He has never been in the bush before. Eventually, he finds his way to the beaver lodge in the big puddle. (See Fig.8.7.)

In the suggested design the first concrete and tile pillar at the east corner of the site is a reminder of the boy's cabin. Travelling west the materials lose their smooth polished feel. The rough concrete wall surrounding the first tree with a juniper at it's base, is the beginning of the bush. Under it a large rock inset between the asphalt parking lot and the concrete sidewalk, is the little beaver (Fig.8.8). Further to the west, on the other side of the back lane is a large fieldstone and mortar planter containing trees and plants associated with the Canadian Shield. The planter wall is 18", a good height to sit on, but it remains rough so that it is not comfortable to sit for any length of time. The wall contains a smaller alcove,

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[3]There is a high population of Cree and Ojibwa peoples who reside in the Ellice area.
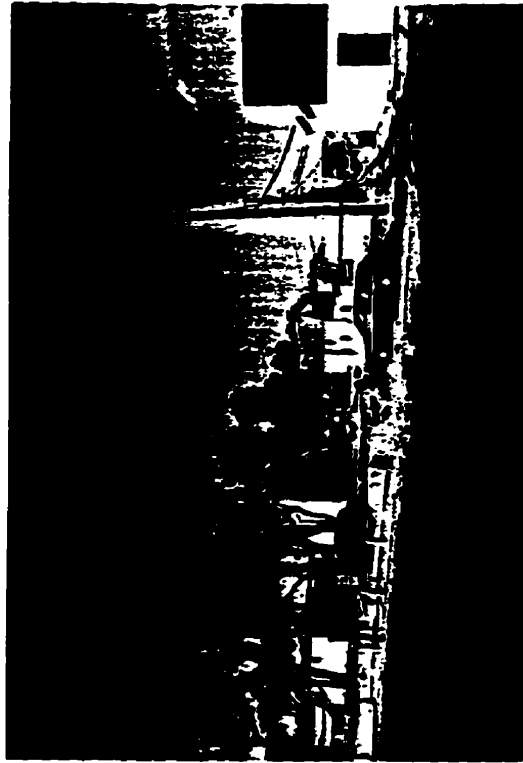
THE SITE : A LARGE PARKING LOT, SURROUNDED BY VARIED COMMERCIAL
ESTABLISHMENTS, WITH A BUS STOP AT THE WEST CORNER.
THE SITE OFFERS AN OPEN VIEW TO THIS ROW OF ELMS ON
TORONTO ST. IT IS NOT WELL USED FOR PARKING ON WEEK DAYS.

PROBLEMS: NO SEATING AT THE BUS STOP
NO SHELTER FROM WINTER OR SUMMER ELEMENTS
LITTLE OF INTEREST AWAY FROM THE STREET
NO VERTICAL EDGE ON EITHER SIDE OF THE BACK LANE

AMIKOONSE
LITTLE BEAVER

FIGURE 8·7

VIDEO STORE

ELLICE AVENUE

VICTOR STREET

ELLICE AVENUE

LITTLE LEAF LINDEN

PRINCE OF WALES JUNIPER

LITTLE BEAVER ROCK

ELLICE AVENUE

~ FIGURE 8.8

SCALE 1"=10' (1:120)

0   2.5' 5'   10'
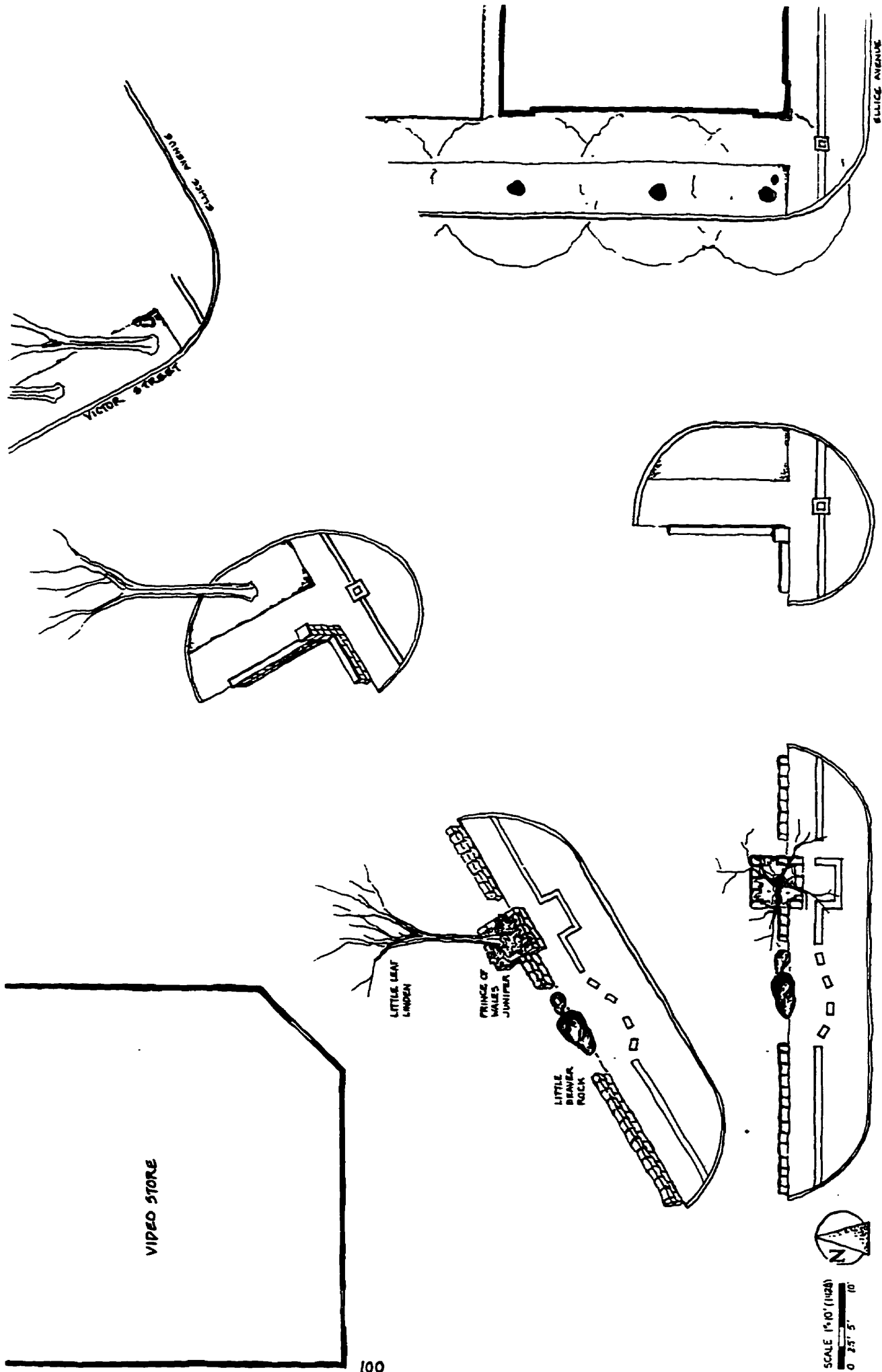
LITTLE BEAVER'S JOURNEY BEGINS ~ ELLICE AT VICTOR STREET

100

SMALL PLANT MATERIAL
LOW JUNIPER
GOOSEBERRY
WILD RASPBERRY
TURKISTAN BURNING BUSH
FLOWERING ALMOND
VIRGINIA CREEPER
CANADA ANEMONE

SCALE 1"=10' (1:120)
0' 2.5' 5'   10'

HYDRO POLE

ARNOLD'S RED
HONEYSUCKLE

WHITE
SPRUCE

AMUR
MAPLE

4 FALL GOLD
ASH

WHITE
SPRUCE

ELLICE AVENUE
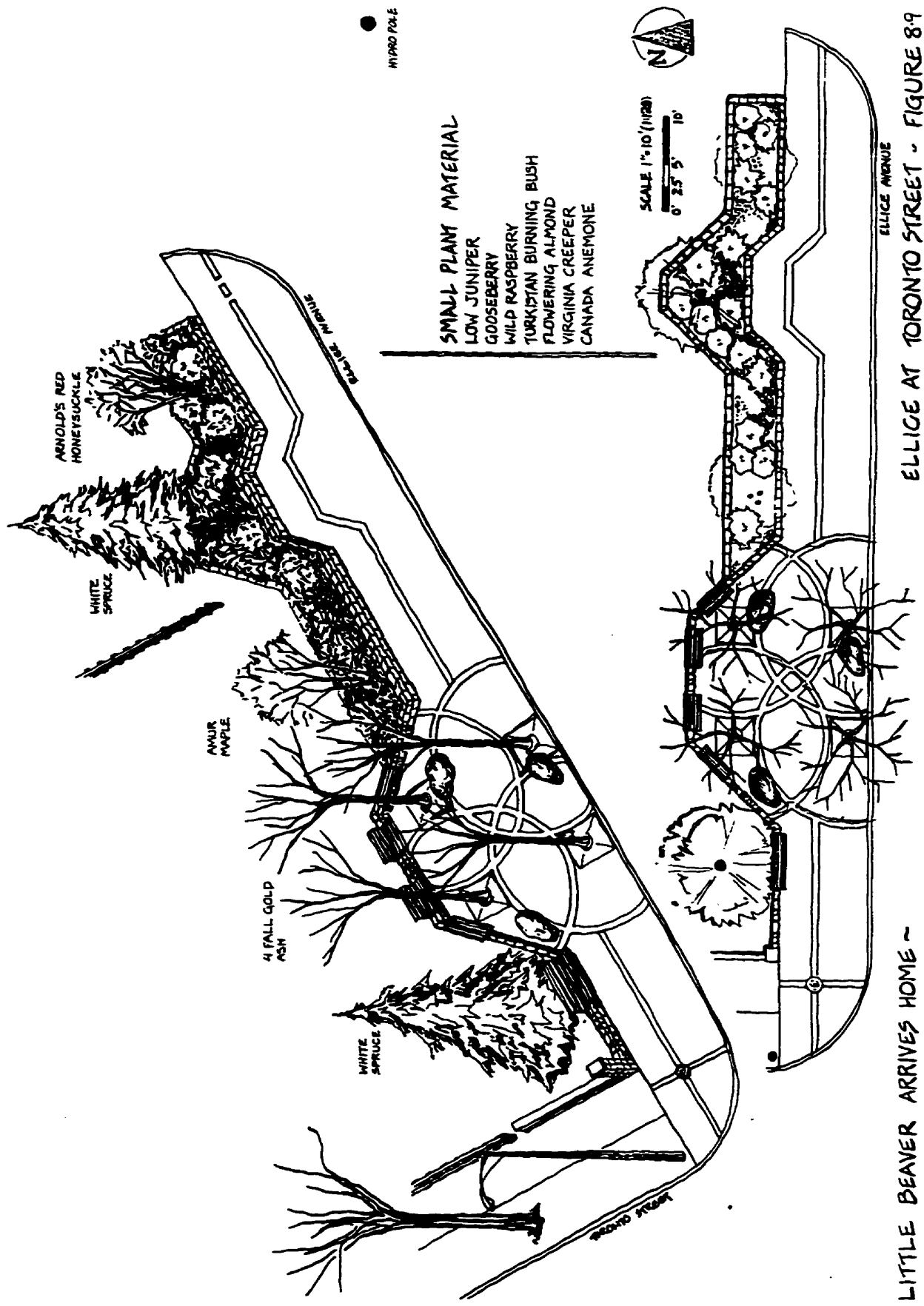
TORONTO STREET

LITTLE BEAVER ARRIVES HOME ~

ELLICE AT TORONTO STREET ~ FIGURE 8.9

indicating the home that the owl shared with Amikoonse. The final arrival at the beaver lodge is located on the west corner of the site, near the bus stop. Here the wall forms a larger alcove lined with benching. The paving pattern of four hoops and four trees symbolise wholeness and well being. Together they create a feeling that this is a special place. The moving shadows of the branches and leaves against the patterned paving give a reminder of shadows on the pond. Four large rocks, for climbing on or perching on, are placed in the pond area. They indicate the presence of other beavers (fig.8.9). A plaque telling the story of Amikoonse in both Ojibwa and English is situated beside the highest bench at the back of the beaver lodge area.

Imagine yourself on Ellice Avenue, on a sunny October day. Two summers after construction the plantings under the trees just cover the soil. Birds are gathering in the branches of the scarlet amur maple. A group of daycare children are approaching from the corner of Toronto Street. They have been instructed to walk with one partner on each side of the line which runs down the center of the sidewalk. Two girls in front giggle as they try to follow the jogs and curves exactly. Ouch! A little boy pulls his hand away from the wall as it touches the needles of a juniper. The children are heading to the library further down the street but on the way they have been instructed to look for colored leaves for a craft project. They spot the maple up ahead. The girls in front start to run. Their caregiver immediately slows them down. Together they all cross the backlane. Then she allows them to disperse along the planter. There are more bright red and yellow leaves here than they have seen anywhere else in the neighbourhood. The biggest boys scramble onto the wall of the planter trying to reach farther into the array of crimson and scarlet. Within minutes they each have the leaves they want and begin pushing each other into the gooseberry bushes. The caregiver calls them to order back on the sidewalk. They walk in pairs to the benches and sit in a row. Their collections are deposited into bags with their names on and placed in the caregivers backpack. A boy jumps up and runs to catch a leaf that the wind has blown off the trees above. He is ordered to sit. Three other children are looking at the rocks in the wall behind them. One is telling the others that these rocks might have diamonds inside them. Another sees the sun glittering on the quartz in a piece of granite and confirms her friend's idea. A child asks the caregiver if the pattern in the pavement is a flower. The caregiver replies that it could be a flower and asks if he can see what the flower is made up of. Soon they are back in pairs, making their way along the line in the center of the

path. The gathering of birds which moved to the safety of the nearby spruce on their arrival filters back to the warmer branches of the maple. At first glance nothing significant has happened on this outing, but this is misleading. What the children are learning here is a feeling for how the pieces in their world are connected together.

Conclusion

Welcoming and educating young children are tasks that belong not only to parents but to society as a whole. Young children respond to the spaces around them in their own unique ways. They are attracted to the activity within a space more than to the space itself. Their experience of space is different from an adults, not only because of their size but because their five senses operate on a more equal footing and in a more open manner than an adult's. Instead of relying mostly on sight, taking in large landscapes at a glance, the small child tends to see the details and reach out to touch the smaller pieces of the world around it. The small child will test each new discovery with as many senses as it is physically or culturally allowed to use, gradually building up it's knowledge of the objects which form places. (ch.3)

As the child grows it moves away from the caregivers control of space towards controlling and constructing spaces of its own. Children learn to claim territory and to control social relationships through the use of physical space.

Adults watching children explore, manipulate, socially control or construct the objects or spaces around them usually call their activity play. Because young children are often accompanied by adults, they tend to play in spaces that adults use. Making public spaces compatible to both caregiver and child is possible and can enrich the experience of both groups.

One type of place that caregivers and young children in the city use are commercial through streets. Such streets are often the main passageways and bus routes through city neighbourhoods. The Ellice Avenue daycare uses this type of street almost every day. What the children and their caregivers experience on this street will influence their understanding of the city and of the society that they live in.

In order for a caregiver to be comfortable taking small children anywhere she must be confident that is is possible to be safe from crime, traffic, or adverse weather conditions. She will be more comfortable if it is possible to move along the street easily without the high curbs, stairs, or narrow openings that make moving with strollers or sleds difficult. If there are sufficient resting places, phones in case of emergency, shelter from rain or snow, access to bathrooms and the choice of alternate transit, such as a bus along the route then she will feel better about

venturing out with her young charges.

The small child will go where the caregiver takes him. The child will benefit from the streets that he is taken along if they contain recognisable landmarks and pictorial signage that help with wayfinding. If the street shows evidence that children are welcome through the presence of elements that attract a child or the marks of other children along the path, then the child will have a sense that it is welcome in public society. When the street is sufficiently transparent, displaying the activities the occur in the buildings along it, there is much that that street can teach a child about how adult society functions. The street can also provide experiences of delight for the child by giving the chance to test its physical abilities or by showing hints of whimsy, myth or magic along its path. All of the suggestions for street modification in chapter 8 follow from these ideas and are meant to help daycares become comfortable, involved and interested in the street spaces they use every day.

There are a number of areas where further study could reinforce or extend the ideas presented in this document. Little is really known about how a street can teach a child about its world. People have written on this topic from their own experience, but studies which link the real environment with real learning are rare. Many of the ideas proposed have little scientific exactness to back them up. Questions such as: At what intervals are resting places needed along a route?, What constitutes adequate shelter from wind and rain?, What is required to help adults to use the street to teach their young charges? and How can levels of noise be balanced with visibility on a street with mid-to-heavy-traffic?, are all unanswerable without further research.

There is enough evidence to substantiate a claim that environments effect the functioning of the daycare and the type of activity that the children engage in. The supervisor for the Ellice daycare commented (ch. 7) that her daycare uses the public spaces around it because they provide much more than the daycare is able to provide by itself.[1] Daycares are certainly a major category of user of public streets and parks in Winnipeg's core area. A question which is not answered by the

---

[1]The situation at the Ellice Avenue daycare where an outdoor space is present , but virtually unusable, also needs further study. Different sources indicate different answers as to why the space is under used. The daycare director points to constant vandalism and accumulations of too much snow as the key problems. One daycare worker complains that there is no shade and that the whole surface is sand. Literature on the subject seems to indicate that a difficult access situation and a lack of accessible storage are likely the cause of the lack of use. Until further study is done, either on this site or by surveying sites in similar situations, it is hard to be sure which are the key factors in preventing the use of this space or if it is possible to turn the place into a useful play yard for the daycare.

predominantly American literature about daycare outdoor space is how necessary is it for daycares to have usable private outdoor spaces? To answer this a number of other questions must be answered: How does the child's familiarity with a place change its learning in that place? How does the child's familiarity or ownership of an outdoor space affect the child's behaviour within that space? Does having an outdoor place which it can build on or add to, effect that child's growth? Can public or shared spaces provide these opportunities for children?, and Is such a solution acceptable within Canadian or Winnipeg society?

Regardless of the answers to these questions, caregivers and young children will continue to use central streets and public spaces in the city of Winnipeg. The choice of creating places to welcome them or to discourage their presence will be made by adults. It is up to those adults who understand the importance of young children's welfare in the city to be advocates for the children in their cities.

Appendix A
Design Guidelines from Other Sources

7 Requirements for the Structure of Space and Equipment for Play
(Mitsuru Senda, 1992)

> 1) there must be a circulation of play ie. there must be a clear flow of movement which compromises one big activity.
>
> 2) the process must be safe but rich in variety.
>
> 3) the space must not be singularly patterned and must have short cuts and by passes.
>
> 4) the place must entail symbolic high places
>
> 5) the process must contain parts where the children can experience dizziness.
>
> 6) the process must offer large and small gathering places.
>
> 7) the process as a whole must not be closed, it must be open and have a number of access routes.

Play Units, Calculating the Amount to do
(Kritchevsky and Prescott,1969 in Elizabeth Prescott, 1985)

Number of Play Units	Type of Unit	Number of play spaces
12 vehicles	simple	12
1 rocking boat	simple	1
1 tumble tub	simple	1
1 jungle gym with boxes and boards	complex	4
1 dirt area plus scoop trucks	complex	4
1 equipped sand table with water	super unit	8
Total Play Places		30

(The ratio of the number of children to the number of play spaces gives the number of things to do per child. Prescott considered 2 -2.5 things to do sufficient but still conflictual, while a really good space would have 5 or more things to do per child.)

Plants for Children in an Urban Play Environment

(Beate Jansson,1984)

Guidelines

1) Emphasis on sensory as opposed to functional qualities inherent in trees, shrubs and ground cover vegetation when designing for the 0 - 5 yrs age group. (eg. leaves, fruit , flowers, sun/shade.) Focus should be on vegetation in scale with the size of these children.

2) Seasonal availability should be designed so interest value scans all four seasons.

3) As far as possible in urban open green spaces plants should be placed to emulate natural settings. Native plants should be used to avoid cultural taboos against touching more ornamental plants. (Thomsen and Borowieka,'80) (Butler,1958). The more naturalistic is also more forgiving in that trampled grasses and broken branches do not destroy the look.(R. Moore,'86).

General Issues

1) Carrying Capacity - the ability of natural systems to tolerate or absorb certain uses. If use exceeds a threshold the plant community cannot heal itself, or compensate for the impact.

to optimise this: a) use tougher easily regenerating species

b) obtain larger specimens

c) combine plants into groups rather than scattering them as individual features.

2) Slow Growth - Where possible planting should be done 3-5 years before play is permitted (Cohen et al.'79) In the interim conventional play structures could be provided and young plants protected by fencing. Children should be involved in the process to generate a sense of pride and protection.

Responsive Environments

(Bentley et al. ,1985)

       1) Permeability - making the environment rich with choice

       2) Variety- uses lead to further variety

       3) Legibility

       4) Robustness - flexibility

       5)Visual Appropriateness

       6) Richness - range of sensory experience

       7) Personalization - functional and visual - 3 levels a) private domain

                                              b) boundary domain

                                              c) public domain

Other significant guidelines which are too involved to be abbreviated into this appendix include:

Guidelines for the Development of Winter Play Environments, Thomsen and
       Borowieka,1980

Daycare Outdoor Spaces Checklist, Carolyn Francis,1990

Recommendations For Child Care Centers, Gary T. Moore et al, 1979

       Of particular interest to subjects addressed in this practicum are patterns
       800 - 807, 506, 512 and 513.

Appendix B
Playground Structures and Play Equipment

Playground Types

There has been much research done on the comparison between types of playgrounds to see which is more beneficial or more desirable to the child. The divisions that are generally used in this type of research are; traditional, contemporary, adventure and creative. Although the adventure playground is very popular in some parts of Europe and in Israel, it has failed to be accepted in North America. The adventure playground is a supervised construction zone. The materials for construction are provided and the supervisor participates when necessary, but generally children make their own places. A few good examples of Adventure playgrounds exist in North America, but generally they have been resisted or shut down by grown-ups who are afraid of a lack of safety, and repulsed by the mess and noise that such a place might cause. Generally, adventure playgrounds are considered to be for older children. However, Rivkin ('90), describes an Israeli kibbutz with such a playground for the preschoolers.

The guidelines given by Hartle and Johnson(1993) as well as Esbensen's description of zoning (1990) would fall within the category of creative playgrounds. They are, without a doubt, the most comprehensively educational type of playground for young children. In North America, creative playgrounds are rare on public sites. To be their most effective they require some supervision, the provision of a storage place with loose parts, with a fairly high degree of maintenance and protection from vandalism. Although a carefully designed creative playground should be possible within a highly volatile public play space, most authorities and adults are unwilling to put the extra effort in and take the extra chances. Many playgrounds that should be classed as "creative"lie within daycare properties. (For a more complete description of this type of play space see the 1980 CMHC publication, Creative Playground Information Kit 1)

The most common types of playground available in the public play spaces of North America are the traditional and the contemporary playgrounds. The traditional playground has been called the concrete and steel jungle. (Johnson and Hartle, 1993) It is generally described as a playground of the 1950's, with single elements of a slide with on entry ladder, one or two sets of swings, a roundabout, a

climbing frame and possibly a sand box. Often the floor under the elements of such playgrounds was concrete or tarmac. These playgrounds are fairly vandal proof, and with some variations have continued to be maintained into the present.

The contemporary playground carries with it many variations most of them a reaction against the traditional playground. The best of these would contain most of the qualities described in Wienstien and Pinciotti's guidelines. Some recent research has supported the use of contemporary playgrounds over traditional ones, finding that:"Children use contemporary playgrounds more than traditional playgrounds, contemporary playgrounds encourage educationally worthwhile forms of play, and some specific characteristics of the contemporary playground (eg.."encapsulation or enclosed areas) may promote particular play behaviours." (p.562, Susa and Benedict, 1994) Johnson, Christie and Yawkee compare three types of playgrounds, element types and the play behaviours that they support in this table:

	Traditional	Contemporary	Adventure
Linkages	-	++	+
Flexible Materials	-	+	++
Graduated Challenge	-	+	+
Variety of Experiences	-	+	++
Types of Play Promoted			
Functional Play	+	+	+
Constructive Play	-	-	++
Dramatic Play	-	++	+
Group Play	-	+	+

- = weakness,   + = strength,   ++ = major strength

Problems with the Names Used

Although the table does show the difference between the aims of playground types, other research has found that sometimes contemporary play grounds are no better or worse than traditional playgrounds in terms of their play potential. (Hartle and Johnson,1993) Brown and Burger's research on six playgrounds, both contemporary and traditional in design suggests that it is the individual elements and their layout which influences children's play behaviour and that describing a playground by playground type is too narrow a method to be useful. Hart and

Sheenan's 1986 study confirms that some contemporary playgrounds may appear more aesthetically pleasing to adults while being similar or worse than traditional playgrounds in terms of play value. (in Hartle and Johnson,'93) However, other studies support the idea that children respond to the playground positively or negatively as a whole environment, and that a particular element within different contexts will encourage different play behaviours in children. (Hartle and Johnson,'93)

Over simplification of describing the physical environment, particularly the outside environment, has long been a problem within developmental research. The most recent research in this area has served to emphasise the importance of understanding the specific layout and contents of any environment under study.

Play Equipment

To the general public play equipment has long been seen as the way to provide a place for urban children to play. Discussion of types of playgrounds is common but unspecific. The specific pieces of equipment and other elements within the playground are also important. Many books written about playground design in the early eighties contain diagrams of play equipment made from lumber and found objects, such as tires. These were revolutionary as they made a complete departure from the equipment of the "concrete jungle" playgrounds. However they often echoed the typology of the equipment of that former era. Today the equipment has moved back to mass production, but with a few exceptions the typologies of specific pieces of equipment have remained the same.

Swings vs. Slides

One of the questions that needs to be answered is that of the swing. Some support it's use saying is is a movable part which the child controls and it offers opportunity both for parallel, solitary and in some cases social play. Others see the need to encourage social play on all fronts and as a result will only support the use of tire swings. The most influential playground designers rarely include swings as an element, yet several studies show that it is the most popular element on traditional playgrounds, which still comprise 85% of reported structures in the United States (Wortham ,1988) The most popular playground structure manufacturers do not even build swings into their structures.

The evidence is there to support the presence of swings on playgrounds. They

encourage the development of motor skills, co-ordination, rhythm, and visual-perceptual development, requiring that the child be constantly re focussing on the changing landscape. (Wortham,1988) They also provide the "dizziness" factor that Senda believes is essential to any successful play environment.(Senda,1992)

Slides have replaced swings in modular structures as the main dizziness element. This appears to be mainly because swings have a higher maintenance factor and contain moving parts, which are sometimes considered safety hazards. Slides also keep the circular motion going, a factor important if a number of children are using the structure at one time. Many structures today offer a variety of sliding experiences, pointing to the need to have some variety within the dizziness experience. What slides do not provide is a place to sit and watch the world from.

A chapter in Playgrounds for Young Children, by Marshal R. Wortham, looks at the playground equipment industry today. It discusses companies and the market they compete in, advances in materials used and goals that the manufacturers are trying to achieve.

Balancing sensitivity to the physical and social environment a playground is designed for and the children that are meant to use it is not an easy task. There are bound to be some mistakes made along the way. However, continued evaluation of places built combined with collaboration with the community of users is a method which should eventually lead to more success than failure.

Appendix C **Manitoba Childcare Statistics**

Notes on the Canadian National Child Care Study -Manitoba Report

Data for MB, taken from phone interviews conducted during fall 1988:

-Sample 24,155 families with 42,131 children ages 0-12yrs

Social, historical and legislative contexts of childcare in Manitoba are provided in the first 3 chapters of the child care study

The following statistics are taken from Statistics Canada and stated in the Canadian National Child Care Study:

- There are 110,300 families with at least 1 child under 13 in Manitoba.

- There are 193,600 children ages newborn-12 yrs. in Manitoba.

Of those families interviewed in the national study:

- 85.2% of the children lived in two parent homes

- 14.8% of the children lived in one parent homes

- almost half, 48.3%, of those in two parent families were newborn-5yrs of age

- 41.6% of those children in two parent families were newborn-5yrs

Large Urban Centers

In Manitoba 56.5% of children live in urban centers of 100.000 or more.
Of those in large urban centers, who are newborn-5yrs,

-58.9% of 0-17mos. are in large centers,14, 200 out of 24,100

-60.2% of 18-35 mos. are in large centers, 13, 600 out of 22,600

-58.7% of 3 - 5yrs olds are in large centers, 26,300 out of 44.800

In total 59.1% or 54,100 out of the 91,500 children aged newborn - 5 yrs live in large urban centers.

Special Needs Children

Of the children in MB, 11.3% of families have at least one child with special needs. They comprise 7.1% of all children in Manitoba ages newborn-12yrs.

Employment

Of the parents that were interviewed by phone during the CNCCS with children, ages newborn-5yrs:

- 38.6% worked full time

- 16.4% worked part time

- 45% were not employed

Most often it was the mother that was interviewed.

Appendix D
Designing for Infants

The Relationships that Influence a Child's Growth

One way to describe this relationship between the child, the caregiver and the environment is within a "nested environmental structure" (Brenner,1979 in Heidmets,1985).

(CULTURE = (CAREGIVERS/PEERS = (CHILD = ENVIRONMENT)

In this model the child-environment relationship is mediated through the social relationships. Although this role of social relationships and environment is sometimes reversed, so that the child-social relationship is mediated by the environment, the three elements always work in relation to each other. Whether the relationship is seen as more one or another may be due to the discipline of the person studying the phenomenon, the phenomenon being studied and the child's personality tenancies (eg. global or analytical) (Johnson and others,1987) and age. All three; child, environment, and caregiver, are mediated by culture. What is limiting in this diagram is that it does not show that the caregivers and peers are also mediated by the environment. For the purpose of this study a slightly different diagram may be more appropriate:
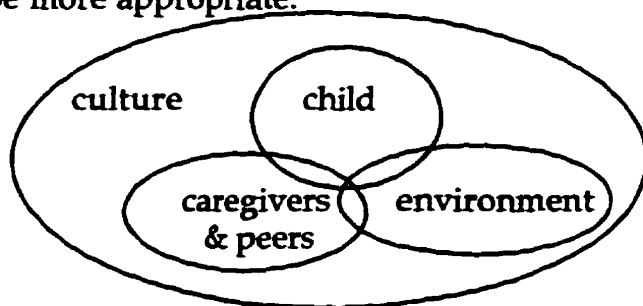
In this diagram the child, caregivers, peers and environment all act on each other. Different types of research uncover different aspects of this relationship. It is easy to see how the following research statistics suffer from only comparing two or three factors of the child's situationat a time. However by combining such research with other types of research and tempering it with some experience of the situation one can begin to gain an acurate picture of the lives of children.

Infants (birth -12 or 18 months)

The needs of the infant are very different from that of a toddler or a preschooler. Often in childcare centers infants are seperated from older children because of their greater dependancy on the caregiver and their irregular sleeping patterns. However, in smaller groups, such as those found in home daycare situations, one or two infants can easily be integrated into the same environments as older children.

In infancy the child is only concerned with its immediate environment. Its connection with it is very direct. Its perception is not independent but is an integral feature of its motor reaction. "Every perception is a stimulus to activity."(Lewin,1935 in Vygotsky, 1978) A ball demands to be touched and tasted. A door demands to be opened; a staircase to be climbed.

Its sensori-motor skills are developing at an incredible rate. With each new physical development come new ways to explore the immediate environment. The child begins by exploring its own body parts, fingers and toes. As co-ordination increases it learns to grasp objects and then to release them. Sitting, standing, crawling and finally walking all bring increased access to the physical environment.

Imitation is the first evidence of the child's growing ability to function in the symbolic realm. The child imitates sounds, facial expressions, and actions that have been heard or seen.

Play is integrated with exploration. Object play moves from mouthing and banging objects to grouping and sorting objects, and finally to conventional use of the object. For example, doll goes from being tasted to being associated with other dolls and with babies, and finally to being rocked to sleep. Object play is said to move from centered to decentered. Vygotsky points out that at this point the child has already achieved a high level of connecting meaning with the object. His example is that a clock is understood as a clock, not a circle of glass two sticks and some numbers.

Social play is often limited to solitary play in the vicinity of others or interaction with an accommodating play partner; a partner old enough to recognise the baby's limitations and ensure that the play runs smoothly. However, caregivers

are able to facilitate social interaction with peers (Johnson and others, 87, Spencer and Blades,'85)

Environments that encourage movement

Opportunities to climb are particularly important after the first four or five months, as they allow for the development of muscles and coordination. One environmental design which works well restricts areas by requiring advanced skills to reach them, while the rest of the area is open to exploration. Older infants and toddlers who are ready to take on tasks like sand play and block construction are able to surmount the obstacles to get to the areas, while younger infants are still free to roll or roam in areas that are appropriate to their abilities.(see Francis,1990)

Environments that move and stimulate the senses

Of the five senses touch is the most neglected in non residential settings for children. For a small child, under three, touch is the most critical of all senses.(Olds, 1987) The skin is the humans largest sensory organ. The infant discovers the world with every touch.

In creating a place for infants a lot of thought should be put into surfaces. Floor surfaces are most often in contact with the infants body. Variety within these surfaces allows for a range of experiences. Often in daycares there are too many hard surfaces and not enough soft enveloping surfaces.(Olds, 1987, Prescott,1987)

Another sense which is often neglected is hearing. Besides playing music for a child, allowing the infant (and the toddler and preschooler) to test out sound making is important. Traditionally a favorite activity of the five to eight month child is banging together and beating on "mom's" pots and pans. This can be expanded into a music playground with wind chimes, drums, surfaces that make sounds when sat on or walked on.

Light is a sensual stimulant that the infant craves. Of particular importance is daylight. No other type of light has the range of intensities or the patterns of change that daylight provides. Daylight plays a role in teaching the regular pattern of day and night.

Similarly variety should be sought in types of space. Some spaces should be large and others small. A variation in ceiling height, floor height, and wall shapes allows infants to become aware of the entire space.

Prescott and David comment that the success of a daycare is directly related to the number and types of spaces that can be created within it. (1976, as in

Olds, 1987) The presence of natural forces and elements within or forming these spaces is an important asset. Nature engages all the senses with it's constant change and variety.

In daycare environments infants are usually placed in a ratio of one caregiver to every three children. This much higher caregiver/child ratioincomparison to the toddlers and preschoolers, 1:3 instead of 1:8, demonstrates the extremely demanding nature of looking after infants. Any design for children of this age must look at such ideas as containment during play and isolation during rest times, which allow caregivers to function more effectively.

Appendix E
Private Outdoor Space for Daycares

As a closely related topic to the one covered in the main body of this practicum information was also gathered on the topic of private spaces for daycare. This appendix gives an idea of the design thinking that has developed around such spaces.

Available Information

The best, and most inclusive, of the design guidelines for daycare outdoor space include the following. Gary T. Moore et. al., 1979 <u>Recommendations for Childcare Centers</u>, contains guidelines made in a form based on Christopher Alexander's concept of a pattern language. This project was done for the United States Army and involved extensive literature and facilities research. Sybil Kritchevsky and Elizabeth Prescott's, <u>Planning Environment's for Young Children</u> was written after three years of empirical study, of fifty daycare centers all over the United States. There has not been another such in depth study since. Although written in 1969, it contains valuable tools for the measurement of quality in outdoor daycare environments that are as appropriate today as they were then. Finally, Carolyn Francis' chapter in <u>People Places</u>,(1990) on "Daycare Outdoor Spaces", which brings together more recent information, critiques some case studies, and provides a design review check list, is a straight forward introduction to the topic. All three of these publications provide valuable information on how to design outdoor spaces for daycares.

How Much Outdoor Space Is Needed

The necessary quantity of outdoor space per child was established by Prescott and others' (1969) survey of daycares in the United States. Most writers rely on and continue to quote their recommendations. The generally agreed upon guideline is that a daycare center should have between 100 and 200 sq. ft. of usable outdoor space per child. Where space is very difficult to secure, 75 sq.ft.. per child, if well used , is considered adequate by some. (Moore and others,1979; Frances,1990, Esbensen,1990) Esbensen stresses that if less than 100 sq. ft. of space is provided, the child will have little desire to use the outdoor space, and as a result the advantages of such a space

will be lost.
What Should be in the Space ?

Thirty years of research since the early 1960's have led to the formation of what it is to have a developmentally appropriate space. Most publications on outdoor daycare space which were published before the year of the child (1980) had little developmental research to back them up. Since that time play space recommendations in general have emphasised the need to provide space for all types of children's play and activity, rather than the old emphasis on "blowing off steam". There are two sets of goals in the design of daycare outdoor play space. The first is to provide for all types of play, functional, constructive, dramatic, and group as well as for observation or withdrawal, the second is to provide sufficient quantity of things to do. More specific recommendations tend to grow out of these points:

Functional, or gross motor play is generally provided in play spaces through various climbing and balancing apparatus, dizziness apparatus, such as swings and slides, and space for running. Wheeled toys such as tricycles are also recommended.

The importance of sand, or some other malleable substance, preferably along with a water source and loose containers and toys, is stressed for provision for constructive play (Francis ,1990). Rough natural areas areas are also emphasised for their teaching possibilities as well as their provision of many constructive materials. Snow is another important constrictive material, which should be designed for in a winter climate. (See Winter Spaces, Chapter 6, p.75)

Suggestions for provision for dramatic play include construction of small spaces (Yawkey,1990) the inclusion of suggestive objects such as store counters, space ship shapes, towers and steering wheels within the play park (Susa and Benedict,1994) and the provision of loose parts, in the form of dress-up clothes, or props (Francis,1990). There is some suggestion that the existence of detail in these physical provisions can serve to encourage persistence in pretend play.(Clyde and Ronald,in Garling and Valsiner 1985) This is likely one reason why real objects create more interest and generate more extensive play than pretend play objects made for children; a real fire engine is better than a toy one.(Frost,1990) Garden areas and animal areas are also highly recommended, as they provide many lessons about life, growth and allow for acting out roles of adults in a real situation.

Group play is a wide category. Studies have shown that more social

interaction and group play occurs in activity poor environments. (Prescott,1972, Yawkey,1990) The common sense of such a conclusion is easy to see if one remembers the form of many of street games. However there are some recommendations in the research for the design of group play environments. Group play must be broken into categories. If the total play space allows for circular routes then it is more conducive to active group play such as chase games. (Senda,1992) Provision for dramatic play has similar requirements whether for a group or a single child, simply the size of pretend constructions needs to be altered slightly. Preschoolers do not generally engage in the complex game activities of older children. Their group activity requires smaller spaces with more complexity than the playing fields or street surfaces used later in childhood. (For more extensive suggestions for play opportunities, listed by developmental stages, see Chapter 5 and Appendix D).

How Much is There to Do?

Quantity is a deceptive aspect of play space. A place may be full of exciting things to do, but if it really only provides for twelve children and fifty children are expected to use it , numerous problems can result.

Kritchevsky and Prescott developed a system for measuring if there is enough to do for each child in the play yard. This system divides play units (A piece of play equipment with the space needed for it's use) into simple units, such as a swing, complex units, such as play house with supplies or an area with animals, and super-units which combine three or more play units, such as sand with play materials and water, or a tunnel with movable boards , boxes and crates. a scoring system developed from these categories, allowing one for a simple unit, 4 for a complex unit and eight for a super unit. Super units were scored highest because of their potential to accommodate more children over a longer period of time. This scoring was put into a ratio of units (or play spaces) to children. It was found that when a space has only 2 to 2.5 play spaces per child free play periods did not work well. A really good space provided 4 to 5 play units per child.(Prescott,1987)

In recognition that the perfect place is often not possible, Prescott, Jones and Krichevsky, recommend that whether limitations are spatial or climatic major emphasis should be placed on " the maximum organisation of a large variety of primarily simple units and the provision of space for those activities, such as wheel toys and digging, which cannot take place indoors."(Prescott and Jones, with

Kritchevsky,1972)

Other Practical Site Considerations

There are other practical considerations which are recommended in the design of daycare outdoor space. Child accessible, lockable storage for bikes, sand tools and other loose parts with access from the outside is incredibly useful, especially when the outside site does not have an easy flow into the daycare building. Such storage allows for the introduction of more and varied loose parts, allows children more choice of what they use and gives the children opportunity to do their own cleaning up.

Drainage is also an incredibly significant aspect of successful play design. Having a well drained paved area near to the building allows outdoor play with balls and wheeled toys more quickly after rain or snow. (Thomsen and Borowieka,1979, Francis, 1990) Playstructures, also need to be well drained. Surfacing beneath slides and swings are particularly important as the tendency is to wear grooves onto compacted sand, soil, or gravel beneath them, creating areas for water to collect. The presence of vegetation away from the building can mediate climate and provide an on site place for rain water or snow melt to drain into (Francis,1990).

Transitions are a category of design which are often over looked. The inside 'outside transition deserves careful design consideration. Easy, clearly visible transition between inside and outside lets the child see and understand the connection between where he has been and where he is going. Screened porches or overhangs, are described as invaluable transition spaces (Moore et.al.,1979, Francis,1990, Olds, 1987) Large enough porch areas allow for play outside even in marginal weather conditions, provide a protected place for wet or dirty play, and allow clear physical communication about transition between in and out. In colder climates there is reason to feel that a glassed in porch may be advantageous for allowing sun in and providing a place for cold weather clothes.

Circulation must be clearly visible. Absence of a path causes confusion. Children do both know how to move from one place to another so they run into each other and often disturb each other's play. (Kritchevsky in Prescott and Jones 1972) There is also a problem with dead space, which is never used because it does not lead anywhere. Careful structuring and placement of play units can insure that all the free space is useful path space. Cooper Marcus (1990) also recommends that within more open settings there be a paved circulation space around the play

structures allowing children on wheeled vehicles to move freely and productively.

Using a "Found" Site

Most urban daycares in Winnipeg are situated in found sites; meaning that their premises was built for something other than daycare use. Some of these conversions to daycare are successful, others others are not. Gary Moore et.al. (1979) comment that the costs of using found space over construction is the major factor in making found space desirable, and that the image of the space, both for adults and children is the major obstacle to overcome when renovating the old space. Anita Olds (1987) is quoted as giving some ways to create a positive image: "give the renovated building a distinguishable entry, a "feeling of place"; increase the articulation of the new function; create a warm informal atmosphere, a "fun place to be." For these reasons, Moore and company (1979) add that often the use of an old house is a very successful found daycare space. The image already has a "homey" atmosphere.

This image problem holds true in at least one urban Winnipeg neighbourhood. Of the three local daycares, all constructed in found space, the one situated in a large old house, across the street from a park, is by far the most successful. The least successful of the three is situated in an obviously industrial one story building, uses a side entrance, and for outdoor space has just a fenced in portion of the large adjacent parking lot. Although the indoor facilities are carefully and sensitively laid out, the daycare's image is created by what can be seen from the outside. The third daycare is the daycare being looked at in this practicum, the YM/YWCA daycare on Elice St. (see Chapter 7)

The Site as A Whole

Daycare outdoor space not only consists of the outdoor play area. Parking and drop off facilities, as well as pedestrian access and entrances are important features. There is often little flexibility in a found site in how these functions are laid out. However, small seemingly insignificant adjustments to such features can make a difference in the daycares functioning and image.

Moore et. al. (1979) recommend that pedestrian walkways and entrances be made visually dominant over vehicular access and parking. Entrances should be obvious and welcoming, indicating clearly to children that this is a place which will welcome them. They recommend that entrances should echo the local entrance process of most homes. Often this includes a front yard, followed by a front porch.

They also suggest that materials which a residential rather than institutional in nature be used, and that views into the building and play yards be provided.

Positive Proximities

In many city daycares sited in found spaces, there is little or no outside space belonging to the daycare. In such cases a great deal of use is made of the public spaces within the daycare's neighbourhood. Beyond the obvious use of neighbourhood playgrounds and parks, "children need to spend some time in the center of things, near schools, libraries, places of work, shops, and the like, in order to aquire familiarity with the adult life of the community."(G.Moore et. al.,1979) Many such areas can be used creatively to supplement the daycare's own space, and provide necessary learning opportunities.

Dangerous areas, and areas where there are noxious fumes are obviously negative proximities. Cars remain the most serious danger to small children. Where ever possible designers should go to great lengths to protect areas where small children frequent from vehicular hazards.

Moving in Neighbourhood Space

Due to the infant and toddlers size and limited movement capacity they are often transported in wheeled vehicles of some shape or size. Any care giver pulling the standard ratio of three infants or six to eight preschoolers is limited in their ability to move through space. Access up stairs or through narrow multiple doors is impossible. Curbs constitute frustrating barriers, as do entrances to parks , made to prevent bicycle access. Easy access to bathrooms and warm up facilities is also of primary importance in any area that is regularly used, which is away from the main facility.

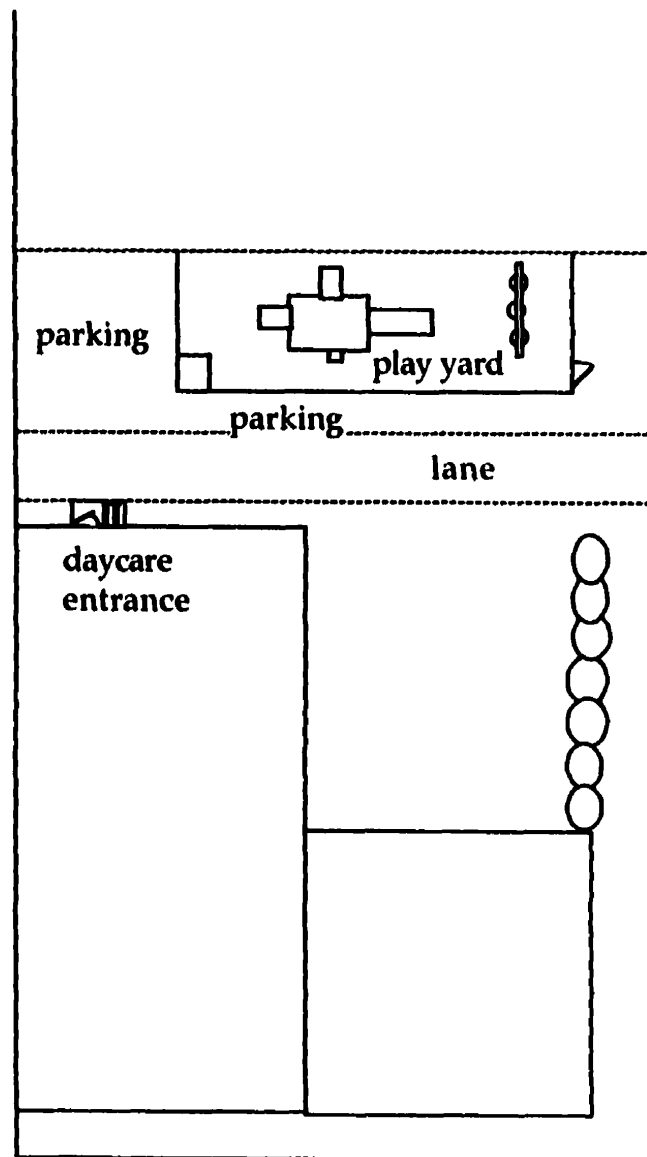**The Ellice Avenue Daycare Entrance**

Each time they exit or enter the inside space of the daycare, they pass through the same doorway, down the same stairs, and traverse the same lane. Whether they move from this exit to Ellice Avenue and beyone, down Agnes Street to Nursery or Kindergarten classes, or into the daycare's own outdoor play space, this same doorway constitutes the end or the beginning of the journey. This space is crucial to the identity of the daycare center and to the identity of the children who claim ownership of the daycare.

Although neither adults nor children actually voiced concerns about this area directly, it is clear to the writer that both groups are concerned about it. The children

identify that entrance as their daycare, but there are problems with it's lack of visibility from Ellice Avenue or even from Agnes Street. The daycare supervisor and other workers have made attempts to create a welcoming entrance within the confines of the present structure. They have painted the stairs and door in bright colors, and places a clear sign with the name of the daycare to one side. However, the current structure of the entrance is extremely limiting. When analysing problems on the street (see Ch.7) it was found that the bigest access problem that the daycare faced was their own entrance.

Some preliminary sketches were done to explore what could be done about this problem. Simply, blocking the lane, which is already blocked in winter by snow, changeing the staircase to a porch /deck/ramp space, moving the entrance to the play area near to the building entrance, and adding some lockable outside storage would make an enormously positive impact, not only on the daycare's image and visability, but on the usefulness of the current outdoor play space. (see the following page)

existing

proposed

1 - deck/stair area
2 - ash tree in center of deck
3 - stage with storage underneath
(additional storage under deck/
stair area)
4 - large gate entrance to allow the
deposit and removal of a snow hill
5 - new entrance to play yard
● - shrub

Figure F.1 - Ellice Avenue Daycare Site - Existing and Proposed
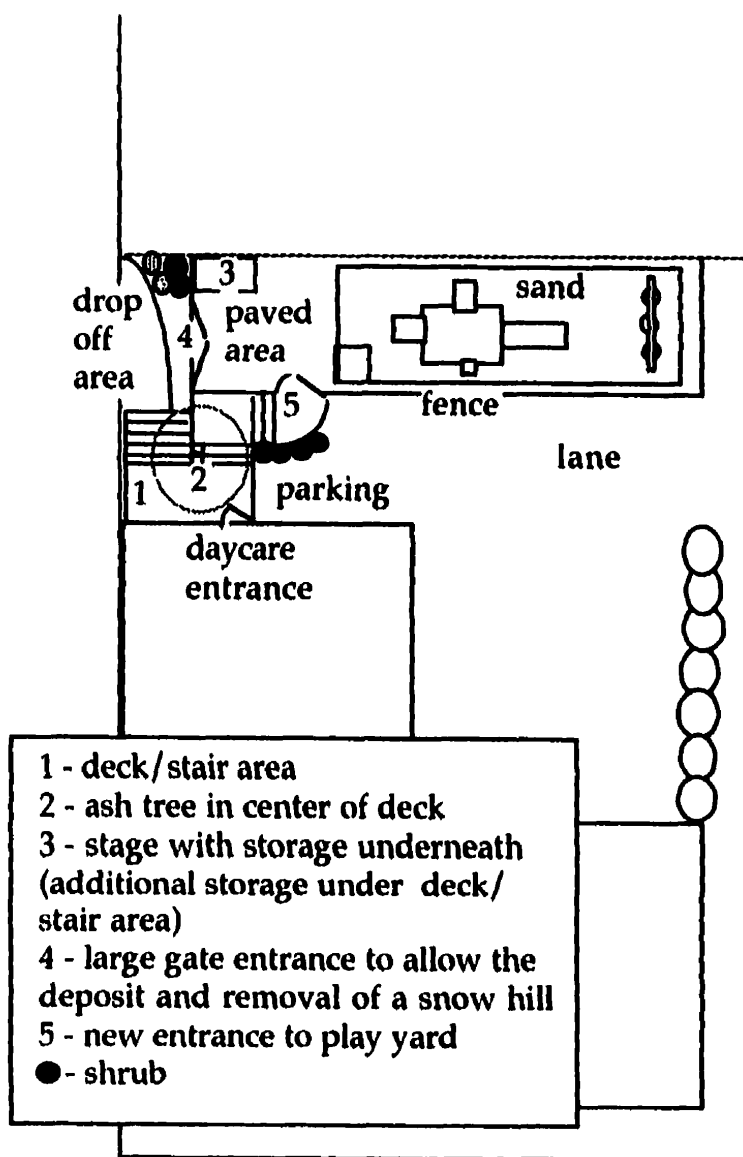
Appendix F - **Field Notes**

Discission/Interview with daycare director

September 1996, 9:30 am

- The director has been at the daycare for nine years.
- Notes were taken as she talked.

"In summer we use the parks around the area, especially the recreational facilities on Langside near Ellice. We use the green space park and the water park there. We also reserve the gym at the rec center there and they will give us balls and things to play with.

We haven't been in the daycare's park (their private outdoor space) all summer. The vandalism is just too much. Every day it's a mess, so we just leave it.

We go to the (paddling) pool at John M. King (school) almost every day, and we spend time there on the field and in the shade of the trees. We sometimes do chalk drawings on the playground asphalt.

Usually we take the kids swimming at the YWCA pool all summer but we just had a 70% turn over so we stopped going swimming until we got to know the new kids.

The places we use in the warm weather would be: The Magnus Eliason Rec Center, with the green park, the water park and the gym, Furby Park, Oriels Park and Community Center, Home Street Park and we also walk more often to the swimming pool.

Most of the time in the summer we walk to places that are near enough. we usually take a few trips to the water slides at Vimy Ridge Park, and to the Dakota Water Play Park in St. Vital.

In Winter we use the daycare park a lot. The vandalism problem usually goes away in winter. We take the transit system to a lot of indoor places. We usually go to swimming at the down town YMCA, the museum of Man and Nature, the Children's Museum, the Forks, and Centenial Library, especially for their story time program."

Problems with the street area that she mentioned included the construction this summer along an adjacent section of Ellice Avenue, which left no sidewalk available to pedestrians. Snow clearing on the sidewalks in winter which she described as "pathetic". Snow banks at bus stops also created problems.

The bus stop across the street from the daycare was a particular problem spot. the daycare used that stop to wait at more than any other. Parents also used it a lot. There was no bench to sit on and no shade or winter shelter.

She explained that most excursions outside the daycare consisted of 14 - 16 kids with two adults. This would be two daycare groups. When the daycare park was used the groups would follow the same format.

Discussion with daycare worker about the current daycare outdoor area
September 12,1996, 1:30 pm
The woman who volenteered this information had worked at the daycare
for eleven years. These notes were made immediately following the conversation.

-The worker's first reaction was to describe the need for summer shade. She
had reccomended that plant some robusta poplar in one corner of the
outdoor space.

- She would like to have a garden for the children to plant but was concerned
that it would be vandalised by the nieghbourhood kids.

- She didn't mind the smaller children breaking in and playing on the swings
and structure. She was concerned by the bigger kids that get in later in the
day, because they might carry a knife or other waepon. She was also
concerned that the little kids that break in might get hurt going in or out of
the fence. She said that they had tried keeping the door open so that the
nieghbourhood could come and go but now they tried to lock it.

-The one thing she hated about the play area is that the whole ground suface
is sand and it gets into everything.

extended checklist for the analysis of corridors
adult concerns
safety

    - traffic

        -things that help to prevent pedestrian vehicle conflicts :

            moving along the street

                - attraction at building face

                - pavement pattern

                - pavement width

                - separation between pedestrian and car

                eg. parking lane, trees, bollards, planters, grass...

                - speed of traffic

                - traffic path (curves and jogs slow traffic speeds)

            crossing the street

                - marked crossings with lights at intersections

                - pedestrian crossings with lights at crucial points

                - clarity of direction around major crossings

- air pollution due to vehicle emissions

*sensitive uses, such as bus stops, playspaces, building entrances

and sitting areas, are key places to watch for the following:

        combinations of:

            close proxemity to the road

            large intersections with high emissions

            poor air circulation due to wind shadows or spacial enclosures

            required intervention; cutting down,filtering or seperation

- extreme cold and heat

build microclimates in sensitive areas, creating:

            - shade and breeze for summer

            - sun and wind protection in winter

            - materials such as wood and plastic, not exposed metal

            - cool grass for heat , warm asphalt for cold

            - colors which absorb heat in winter and reflect in summer

- "unwanted" people and vandalism

        - block easy hiding places eg. dark alleys between buildings

- increase visibility to passing traffic (pedestrian & vehicle)

- create clear ownership and use of private & semi private space

- use creative solutions to claiming and retaining space rather
than lock out or "vandal proof" materials

- have maps and signage that inform of ways out and where to get help

- easy access to public phones

- systems of quick response to vandalism and destruction so that the
effects do not last

- physical measures for safe play

- these are detailed in many play guidelines and mostly apply to
larger nodes rather that corridors.

access

- easy movement - eg. in doors, up stairs

wheeled vehicles such as strollers or wagons require:

- sloped curbs

- ramps as an option to stairs

- large entrances

- snow removal

large groups of small children require:

- edges to line up against

- sufficient path width to move in double file and pass others
even in winter months

- steps with smaller risers and lower handrails than adults

- places to rest along the way

- easy access to bathrooms

- inclusion in adult or school activities

- this overlaps with "understanding" and is detailed there
(see below)

comfort

- physical

- cold and wind, sun versus shade- these concerns are the same
as those detailed under safety (see above)

- rest places-

- social

- feeling welcome
- in physical space this is closely connected to the presence of physical comforts ie.problems unique to the children and their care givers, being understood and dealt with.
(This would include all the details above and below.)
- feeling safe from vandalism and feeling safe from violence
- although the perception of such is not the same as the actual, the suggestions in the safety section address both. (see above)

child's concerns

wayfinding and belonging - recognising a place and identifying with it
- knowing where a place is in relation to other places
- finding the way "home"
- feeling welcome in a place

things which aid wayfinding are :
- signage at the right hieght focused on pedestrian traffic, using pictures and symbols, not just words.
- landmarks - unusual, permanent, often large, elements in the landscape.
- unique combinations of unsusual elements
- places which attract intrest eg. fire hall or toy shop
- problems are caused by sameness, even more by sameness of landmark type elements.

things which aid belonging are:
- being allowed to see what is happening in a place
- finding things which are the right size, are interesting, or that show that children have been included in making the place.
- being allowed to explore and come to understand a place

understanding - finding things which help to build knowlwdge about the world

-the adult social world
- adjacencies to places where adults meet or talk

- the adult working world and it's systems
- visual access to the everyday working of the street

- visual access to the inside workings of restaurants,stores, hairdressers, and repair shops, whether throughwindows, open doors, or work done on the street.
- visusal access to emergency systems of ambulence, police and fire vehicles and their response to calls.

- the social world of older children
- visual and physical access to older children's play areas, - parks, community centers, school yards, etc.

- the school world of older children
- visual access to the goings and commings of the school children
- occaisional physical access to the inside of the school, eg. library, gym, special events...

- the physical world - nature
- access, through all senses to the natural world, in many forms, but in controlled portions; water, earth, rocks, sun, wind, plants, rain, and snow.
- visual access to places where creatures live without human care; beetles, worms, ants, birds etc.

- machine and structure
- visual accesss to machines and their working eg. street and cleaning construction, and car repair.
- visual access to construction of other types, eg. garages being built, houses re-stuccoed, or signs painted.

- the history or order that things happened
- elements that are older adjacent to elements that are newer
- preservation of important elements whether man made or natural within new frams works.
- re-use of older elements for new purposes
- use of local natural materials such as limestone with fossils which are reminders of local natural history
- picture story boards, and markings that tell of events or elements of the past.

delight (anything that gives great pleasure, but mostly myth and magic)
- sensory stimulation (any of the five senses)

touch- walls, smooth, bumpy or patterened to run fingers along.
 smell- flowers, baking, taste - berries,
 hearing -water moving, chimes, church bells, sirens
 sight - more of individual elements, events or people than the
  total visual impression
- suprise and uniqueness- contrast of scale
  - color, sparkle and light
- opportunity for testing or changing physical being
  - curbs or low walls to balence on
  - stairs to run up and down
  - ramps to run up or down (dizziness sensation)
  - poles to swing on or bollards to circle (dizziness sensation)
  - change of hieght - hills , walls, or posts to mount
- elements which change:
  - with seasons, such as plants,
  - with changes of light or wind, such as shadows or flags
  - periodically, being removed and replaced with something new,
   such as the display in a shop window.
- indications of other beings eg. fairies or other creatures eg. animals

(This check list was used in the analysis of street corridors, to see what was there and what was missing. It was also used in the design of spaces along the corridor.)

Bibliography

Appleyard, Donald, M.Sue Gerson and Mark Lintell.(1976). <u>Livable Urban Streets: managing auto traffic in neighbourhoods.</u> Washington, D.C: Dept. of Transportation.

Bentley, Alcock, Murrain, McGlynn, Smith (eds.).(1985). <u>Responsive Environments - a mannual for designers.</u> London: The Architectural Press.

Bjorklid, Pia. (1985). Children's outdoor environment from the perspectives of environmental and developmental psychology. In T. Garling and V. Valsiner (eds.) <u>Children within environments.</u> New York: Plenum: 91 - 106.

Bjorklid, Pia. (1982). <u>Children's Outdoor Environment.</u> Stockholm: Stockholm Institute of Education, Department of Educational Research.

Brink, Satya. (1985). <u>Play Safe-guidelines, recommendations for safe children's play spaces and equipment.</u> (ed.) Satya Brink. Canadian Institute of Child Health.

Bruner, Jerome. (1987). "the Transactional Self." in J. Bruner and H. Haste, eds. <u>Making Sense - the child's construction of the world.</u> New York: Methuen & Co. Ltd.

<u>Canadian National Child Care Study. Workplace Benefits and Flexibility: a perspective on parent's experiences.</u> (1993). Lero, Donna S., Alan R. Pence, Lois M. Brockman, Hillel Goelman, Margot Shields. Statistics Canada and Health and Welfare Canada: Ottawa. Cat. No. 89 - 530E.

<u>Canadian National Child Care Study. Where are the Children? An Overview of Child Care Arrangements in Canada.</u> (1993). Lero, Donna S., Alan R. Pence, Lois M. Brockman, Hillel Goelman, Margot Shields. Statistics Canada and Health and Welfare Canada: Ottawa. Cat. No. 89 - 527E.

<u>Canadian National Child Care Study. Manitoba Report.</u> (1992). Lero, Donna S., Alan R. Pence, Lois M. Brockman, Hillel Goelman, Margot Shields. Statistics Canada and Health and Welfare Canada: Ottawa.

<u>Canadian National Child Care Study. Introductory Report</u> (1992). Lero, Donna S., Alan R. Pence, Lois M. Brockman, Hillel Goelman, Margot Shields. Statistics Canada and Health and Welfare Canada: Ottawa.Cat. No. 89 - 526E.

Carson, Rachel. (1965). <u>The Sense of Wonder.</u> New York: Harper & Row, Publishers.

Chawla,Louise. (1991). Homes for Children in a Changing Society. In Ervin Zube
    and Gary Moore (eds.). <u>Advances in Environment, Behaviour and Design,</u>
    vol.3. New York: Plenum Press: 187-228.

Chilton, Tony.(1985). <u>Children's Play in Newcastle -Upon -Tyne</u>. Birmingham:the
    Association for Children's Play and Recreation Ltd. and the National Playing
    Fields Assoc.

Ching, Francis D. K. (1979). <u>Architecture: Form, Space & Order</u> . New York: Van
    Nostrand Reinhold Company.

Clover, (1990). <u>The Earlier the Better - a practical approach to the development and
    education of the under fives.</u> Ashford, Great Britain: Honeybear Productions.

Coffin, Gill.(1990)<u> Children's Outdoor Play in the Built Environment: a handbook
    for all who design, plan or manage residential neighbourhoods.</u> National
    Childrens Play and Rec Unit: London.

Cohen, Uriel, Tim McGinty, and Gary T. Moore. (1978). <u>Case studies of child play
    areas and child support facilities.</u> Milwaukee: Center for Architecture and
    Urban Planning Research, University of Wisconsin.

Cohen, Uriel, Tim McGinty, Ann Hill, Carol Lane and Gary T. Moore.(1979).
    <u>Recommendations for child play areas.</u> Milwaukee: Center for Architecture
    and Urban Planning Research, University of Wisconsin.

Cooper Markus, Clare. (1978). Remembrance of landscapes past. <u>Landscape.</u> vol. 22,
    no. 3, pp. 34-43.

Cooper Markus, Clare .(1974). Children's Play Behavior in a Low Rise, Inner City
    Housing Development. In D. Carson (ed.) <u>Man Environment Interactions.,
    part 3.</u> Stroudsburg, PA: Dowden Hutchinson & Ross, Inc.

Cooper Markus,Clare and Carolyn Francis (eds.). (1990).<u> People Places -Design
    Guidelines for Urban Open Space.</u> New York: Van Nostrand Reinhold Co.

<u>Creative Playground: information kit no.1.</u>(1980). Children's Environments
    Advisory Service. Ottawa: Canada Morgage and Housing Corporation.

Eckbo,Garrett. (1991). <u>Elements and Total Design Concept of Urban Equipment
    Design.</u>

Esbensen, Steen B. (1990). "Play Environments for Young Children". in Sue
    Worthham, Sue C. and Joe L. Frost (eds.). <u>Playgrounds for Young Children:</u>

National Survey and Perspectives. American Alliance for Health and Physical Education, Rec. and Dance.

Francis, Carolyn.(1990). " Daycare outdoor settings" .in Clare Cooper Markus and Carolyn Francis (eds). People Places -Design Guidelines for Urban Open Space. New York: Van Nostrand Reinhold Co.

Francis, Mark. (1983). "Negotiating Between Children and Adult Design Values in Open Space Projects."in Childhood City Quarterly. vol.10, no.4.

Freeman, Claire. (1995). "Planning and Play: Creating Greener Environments". in Children's Environment's Quarterly, vol.12, no.3, pp. 381 - 388.

Fein, Greta G. (1978) Child Development. Eaglewood Cliffs,NewJersey :Prentice Hall Inc.

From the Child's Point of View: an evaluation of outdoor spaces in Nelson Creek Housing Cooperative, research report. (July,1983). Canada Morgage and Housing Corporation.

Garling, Tommy, and Joan Valsiner (eds.).(1985). Children Within Environments - towards a psychology of accident prevention. New York: Plenum Press.

Garvey, Catherine.(1977). Play - the developing child. Cambridge, Mass.: Harvard University Press.

Ghel, Jan.(1987). Life Between Buildings: Using Public Space. Translated: Jo Koch. New York: Van Nostrand Reinhold Co.

Goelman, Hillel et al.(eds.) (1993) Canadian National Child Care Study - where are the children?an overview of child care arrangements in Canada. Ottawa: Statistics Canada.

A Guideline on Children's Play Spaces and Equipment. (1990). Toronto: Canadian Standards Association.

Hart, Roger. (May 1992).The Meaning of Children's Participation. EDev News: Education for Development Bulletin. UNICEF:1-6.

Hart, Roger. (1987). Children's participation in planning and design - theory, research and practise. In Carol S. and Thomas G. David (eds.). Spaces for children:The built environment and child development,. New York: Plenum:217-239.

Hart, Roger and Gary T. Moore.(1979). The Development of Spatial Cognition - A Review. Worcester Mass: Clark University, January.

Hart, Roger. (1979).Children's Experience of Place. New York: Irvington Publishers.

Hartle, Lynn and James E. Johnston, (1993), "Historical and Contemporary influences of Outdoor Play Environments" .in Craig H. Hart (ed.) .Children on Playgrounds - Research Perspectives and Applications. Albany: State University of New York Press.

Heidmets,   (1985). "Children Within Environments: Different Approaches and Their Relationship to Accident Prevention". in Garling, Tommy, and Joan Valsiner (eds.).(1985). Children Within Environments - towards a psychology of accident prevention.New York: Plenum Press.

Jambor, Tom. (1990). "Promoting Perceptual-Motor Development in Young Children's Play". in Worthham, Sue C. and Joe L. Frost (eds.). Playgrounds for Young Children: National Survey and Perspectives. Reston,VA: American Alliance for Health and Physical Education, Recreation and Dance.

Jansson, Beate.(1984) Children's Play and Nature in an Urban Environment. Master's Thesis, University of Calgary.

Jaspert, Julie, Sue Cavanagh and Jane Debono.(1988) Thinking of Small Children-access provision and play. We Welcome Small Children Campaign, Women's Design Service:London.

Johnson, James E., James F. Christie, Thomas D. Yawkey. (1987). Play and Early Childhood Development. Glenview, Illinois: Scott Foreman & Co.

Kritchevsky, Sybil, and Elizabeth Prescott, with Lee Walling. (1969). Planning environments for young children: Physical space. Washington, D.C.: National Association for the Education of Young Children.

Kallos, Victor. (1979). Brooklands School Yard: a Place to Play. Masters Thesis, Department of Landscape Architecture, University of Manitoba.

Lasting Differences: The High/Scope Preschool Curriculum Comparison Study Through Age 23. (1990). Yipsilante, MI.: High/Scope Press.

Lawton and Hooper, (1978), "Piagetian Theory and Early Childhood Education," in Alternatives to Piaget - critical essays on the theory. eds. Siegel and Brainerd, New York, N.Y.: Academic Press.

Lennard , Henry L. and Suzanne H. Crowhurst Lennard. (1992). "Children in Public Places: Some Lessons from European Cities" in Children's Environments Quarterly. 9 (2): 37 - 47.

London: Croom Helm, .

Moore, Robin, Susan M. Goltsman, Daniel S. Iacofano (eds.).(1987) Play for All
Guidelines: planning, design and management of outdoor play settings for
all children. MIG Communications.(new 1993 edition.)

Nicholson, S. (1971)How not to cheat children: The theory of loose parts. Landscape
Architecture. 62(1): 30-34.

Olds, A. R. (1987). Designing settings for infants and toddlers. in Carol Weinstein
and Thomas G. David (eds.). Spaces for Children, the built environment and
child development. New York : Plenum Press.

Olwig, Keneth R.(1990). "Designs Upon Children's Special Places?. Children's
Environments Quarterly,7(4):47-53.

Plain, Ferguson. (1993). Amikoonse ,Little Beaver. Winnipeg, Canada: Pemmican
Publications Inc.

Play Spaces for Preschoolers, advisory document. (1980) Children's Environments
Advisory Service. Canada Morgage and Housing Corporation.

Prescott, Elizabeth. (1987). "Environment as Organizer in Child-care Settings".in
Carol Weinstein and Thomas G. David (eds.). Spaces for Children, the built
environment and child development. New York : Plenum Press.

Prescott, Elizabeth, Elizabeth Jones, with Sybil Kritchevsky . (1972). Daycare as a
Child Rearing Environment. Washington,D.C.: National Association for the
Education of Young Children.

Rapoport, Amos. (1992). Cultural Events Lectures at the University of Manitoba.
(video recording). U. of M. Media Productions. Tapes 1 - 7.

Readdick, Christine A. and Sally Hansen-Gandy, (1994), "Daycare Children's
Establishment of Territory to Experience Privacy." in Children's
Environments Quarterly, Dec. 94, vol.11,no.4. pp.265 - 271.

Relph, Edward.(1987). The Modern Urban Landscape. Croom Helm Ltd.: Australia.

Rivkin, Mary S..(1990). "Outdoor Play, what happens here?" in Worthham, Sue C.
and Joe L. Frost (eds.) . Playgrounds for Young Children: National Survey
and Perspectives. Reston,VA: American Alliance for Health and Physical
Education, Recreation and Dance.

Ryan, Debra E. (1990). Public Art Children and Play Grounds: Design of an

Earthwork for the Hidden Valley Elementary School Playground. Children's Environments Quarterly. 7(3): 23-31.

A Safer Winnipeg For Women and Children. (1991). Social Planning Council of Winnipeg , November.

Schulz, Charles M. (1963). Good Grief, Charlie Brown. New York, N.Y.: Fawcett World Library.

Sebba, Rachel. (1991). "The Landscapes of Childhood, the Reflection of Childhood's Environment in Adult Memories and in Children's Attitudes". Environment & Behaviour. 23(4):395 - 422.

Senda, Mitsuru. (1992) Design of Children's Play Environments. New York: McGraw-Hill, Inc.

Silverstein, Shel. (1981). A Light in the Attic. Toronto: Fitzhenry & Whiteside Ltd.

Simmons, Deborah A. (1994). "Urban Children's Preferences for Nature: Lessons for Environmental Education". in Children's Environments Quarterly, vol. 11, no.3, pp.194 - 203.

Smith, Fiona. (1995). "Children's Voices and the Construction of Children's Spaces: The Example of Playcare Centers in the United Kingdom". in Children's Environments Quarterly, vol. 12, no.3, pp.389 - 396.

Spencer, Christopher and Mark Blades. (1985) "Children at Risk - are underestimating their general environmental competence whilst overestimating their performance?" in Garling, Tommy, and Joan Valsiner (eds.). Children Within Environments - towards a psychology of accident prevention.New York: Plenum Press.

Statistics Canada.(1992). A portrait of Families in Canada. Cat.No. 89-5923 E.

Statistics Canada. (1992). Lone Parent Families in Canada. Cat. No. 89-522 E.

Susa, Anthony M. and James O. Benedict. (1994). "The Effects of Playground Design on Pretend Play and Divergent Thinking". in Environment and Behavior, July, vol.26, no.4.

Talbot, James and Joe L. Frost. (1989). "Magical Playscapes". in Childhood Education, the Association of Childhood Education International: Wheaton,MD. 66, pp. 11 - 19.

Thompson, Donna and Louis Bowers. (1989). Where our children play, community park and playground equipment. Reston,VA: American Alliance for Health

Physical Education, Recreation and Dance.

Thomsen, Charles H. and Alexandra Borowiecka. (1980). Prairie Winter Play Patterns - (b) Winter and Play. Research Project #10. Canada Morgage and Housing Corporation. Canada.

Trancik, Anika M. and Gary W. Evans. (1995). "Spaces Fit for Children: Competency in the Design of Daycare Center Environments". in Children's Environment's Quarterly, vol. 12, no.3.pp. 311 - 319.

Vernez Moudon, Anne (ed.).(1987).Public Streets For Public Use. NY:Van Nostrand Reinhold Co.

Vygotsky, L.S. (1978) Mind in Society, the development of higher psychological processes. (eds.) Michael Cole, Vera John-Stiener, Sylvia Scribner, Ellen Souberman. Cambridge: MA: Harvard University Press.

Weinstein, Carol S. and Patricia Pinciotti. (1988). "Changing a Schoolyard, Intentions, Design Decisions, and Behavioral Outcomes". Environment and Behaviour. 20(3): 345 - 371.

Whiston Spirn, Anne. (1987). "Better Air Quality at Street Level: strategies for urban design". in Vernez Moudon, Anne (ed.)(1987).Public Streets For Public Use.NY:Van Nostrand Reinhold Co.,1987.

Wortham, Marshal R.(1990). "Advances in Playground Equipment for Young Children". in Worthham, Sue C. and Joe L. Frost (eds.). Playgrounds for Young Children: National Survey and Perspectives. Reston,VA: American Alliance for Health and Physical Education, Recreation and Dance.

Worthham, Sue C. and Joe L. Frost (eds.)(1990). Playgrounds for Young Children: National Survey and Perspectives. American Alliance for Health and Physical Education, Rec. and Dance.

Yawkey, Thomas D. (1990). "The Role of Adults in Children's Play".in Worthham, Sue C. and Joe L. Frost (eds.). Playgrounds for Young Children: National Survey and Perspectives. Reston,VA: American Alliance for Health and Physical Education, Recreation and Dance.