AN ANALYTICAL STUDY OF THE RELATIONSHIP BETWEEN CHILDREN'S PLAY AND THEIR PLAY ENVIRONMENT IN TWO SUBURBAN NEIGHBOURHOODS

by

Anita I. Green

A thesis
presented to the University of Manitoba
in partial fulfillment of the
requirements for the degree of
Master
of
Landscape Architecture

Winnipeg, Manitoba, 1988

ISBN 0-315-47915-9

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ABSTRACT

What environmental characteristics contribute to a supportive play environment close to home based on children's opportunities for social interaction, exploration, environmental interest, privacy and symbolic ownership? Does the 'urban wild' provide opportunities for play not found in more traditional 'open space' and vice-versa? How can we design a supportive environment for children's play as part of the overall design for the neighbourhood green space by concentrating mainly on the physical and perceptual qualities of landscape elements? These questions formed the basis of a comparative study of two Winnipeg suburban neighbourhoods, which are similar except for two basic design factors—spatial accessibility and the types of physical landscape available. This study investigated the social and psychological importance of different types of open space for children's play (grades 4 and 5). The methodology used for this study was behavioral observation and structured interviews conducted in the local schools. The differences and similarities in the children's use of and attitudes towards their neighbourhood open spaces are compared. One of the findings was that exploration was the key activity that was supported by the vegetation structure of the informal open space—the bush. This area also supported more environmental interest (i.e. wildlife), private areas, and symbolic ownership than the wide open areas of grass found in the other neighbourhood. In conclusion, some design guidelines are made based on this study as well as previous studies and other related material.

DEDICATION

I would like to dedicate this thesis to my grandfather, Thomas James Green, who shared with me his love of design.

ACKNOWLEDGEMENTS

My sincere appreciation is extended to the Central Mortgage and Housing Corporation for their very generous financial support of this study.

Secondly, I would like to thank the principals at Crane School and Nordale School (Mrs. Tennyson and Mrs. Glade) for their co-operation without which this study could not have been conducted. Many thanks are also extended to the parents who granted permission for their child to participate, and a special thanks to the children who made such an important contribution.

I would like to gratefully acknowledge the members of my advisory committee—Professor C. H. Thomsen (chair), Mr. David Witty and Dr. S. Weidemann who provided comments and suggestions for the thesis. I would also like to acknowledge Dr. S. Weidemann's help in focusing the study and the development of the structured interview.

Much appreciation is also extended to the Department of Geology for providing a space to work in during the summer months.

Finally, I would like to thank both my parents and Lee, my husband, for their unfailing encouragement and support.

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INTRODUCTION

Roger Hart identified two basic factors which determine whether or not a child can find suitable places to play close to the home — spatial accessibility and the type of physical landscape available. Accessibility is generally not a problem in suburban areas, yet access to a diverse landscape can be. The elements of water, bare earth, trees, bushes, tall grass, variable topography, wildlife, and loose parts are particularly valued elements of play when available. Ironically, these same qualities are systematically removed from most suburban areas. More suburban development seems inevitable, but the setting need not be so sterile for children and adults.

Our environments have become overly simplified and as Amos Rapoport believes overdesigned. Both he and Geoffrey Hayward support the idea that freedom and choice for the user need to become critical design considerations. The design problem to be explored, therefore, is how can we design environmental 'frameworks' for play. According to a number of studies it is often the undesigned green spaces that provide free scope to chilren's play. The next step in the Canadian design of play environments should be to examine examples both here and in other countries to determine how to incorporate the ideals of the adventure playground into the total environment of residential neighbourhoods. A less expensive and maybe better alternative to adventure playgrounds is to leave or create 'wildlands' as commonland which would not become overly planned or manicured, and therefore enable children to make them into their own play settings. Could this 'natural framework' provide the open ended design or loose-fit necessary for children to be able to modify, make places for themselves and develop a sense of ownership as well as provide the serendipity necessary for play?

CHAPTER ONE

Literature Review

This chapter is divided into four sections. The first one is intended to establish the particular aspects inherit to play and its importance for child development. These basic principles of play are then used to investigate environments that could support and stimulate the numerous facets of play beyond mere gross-motor activities. The second section examines environmental complexity as one of the key issues for play environments from the contrary perspectives of adult and child. In this context, the role of 'informal' or 'natural' areas are discussed. The third section will explore some possible landscape examples with the potential to provide a framework for a children's play environment. Finally, the last section provides a summary of the material covered in this chapter.

1.1 The Nature of Play

> It is an invariable principle of all play ... whoever plays, plays freely. Whoever must play cannot play.[1]

To begin with the experiental distinction between play and organized sports should be made. The words 'play' and 'game' are not synonymous but refer to two different experiences and to different stages of a child's development. Play is an intrinsically motivated experience "characterized by freedom from all but personally imposed rules...and by the absense of any goals outside the activity itself." In contrast, games are usually an extrinsically motivated experience because they tend to be competitive in nature and are characterized "frequently by a goal or purpose outside the activity such as winning the game." The free behavior, characteristic of play, is exchanged for behavior that conforms to externally imposed rules. Another fundamental difference between play and games is that in play neither the

[1] James Carse, *Finite and Infinite Games : A Vision of Life as Play and Possibility*, (New York: Ballantine Books, 1986), p. 4.

ends nor the means are known ahead of time. The "antithesis of this process is competitive sport where all ends (the fact that one team will win) and all means are predetermined"[2] by the rules of the game.

Play and games, therefore, are not the same kind of experiences nor do they provide the same aspects of child development. Games are important for school age children as a process of socialization because learning and obeying the rules of the game take time and maturity. Games not organized by adults, however, allow more emphasis to be placed on learning socializing skills such as deciding which game to play, how and by what rules. As the child gets more mature the better he or she becomes at handling winning and losing. Play, on the other hand, is important in the child's development of oneself through the freedom to explore, act out life situations, and extend personal limitations. As Bruno Bettelheim states,

> Play is the most important activity of human beings. I believe one can be successful and serious, deep down serious, only in an activity that also to some degree has the satisfaction that a child derives from play.[3]

This satisfaction, which is inherent to the play experience for children or what some call the 'flow experience' for adults, is a positive state of mind in which the person is voluntarily involved in the activity because it does not produce anxiety, or the other extreme, boredom. Play, therefore, is the means of developing and maintaining throughout life the capacity to experience for its own sake.

Theorists, such as Piaget and Bettelheim, view play not as a passive occupation, but as body stimulation or what Bettelheim calls the "pleasure in functioning." The principles that form the core of this body stimulation model are:

- Play is an intrinsically motivated experience.
- Children and adults play for the physical or mental stimulation and satisfaction they receive from excerising their faculties.[4]
- Play involves self-devised challenges. The child seeks out new and more complicated tasks or experiences and choose from the different alternatives those they think they can handle.

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[2] Bruno Bettelheim, "The Importance of Play," *The Atlantic Monthly*, March 1987, p. 37

[3] Bruno Bettelheim, CBC, "Ideas," 29 December 1987, "Play," Lister Sinclair.

[4] Bettelheim, "Importance of Play"

- Exploration is stimulated by something that contains elements of uncertainty, novelty, complexity or dissonancy, but also an element of familiarity.[5]
- Sustaining interest seems to be a matter of having an appropriate level of mental and/or physical challenge. It is a function of having the right balance between one's opportunities and one's skills. Below this level boredom results and above this level anxiety is experienced.[6]
- Stimulation must rise, by increased complexity or by means of new play opportunities, in order to support growth of environmental competence. This term means "the knowledge, skill and confidence to use the environment to carry out one's own goals and to enrich one's experience."[7] The play experience, therefore, involves as much mental as physical stimulation. Providing opportunities for a well-rounded play experience are important for a child's social, mental, and physical development.

Parks have generally been designed with a limited view of play as merely gross motor activity or as the playing of games. Physical development is only one aspect of play. It is equally important to consider opportunities for a child's inner development. The numerous facets of play involve both the mind and the body in activities such as self-devised challenges, exploration, experimental interation with the environment, fantasy play, and moments of introspection. These activities basically fall into two general categories—movement(exploration) and rest(quiet play, reflection). Although play is an intrinsically motivated experience, the environment can either support or inhibit these experiences.

Rapoport makes the experiential distinction between 'liking' and 'interest.' Liking seems to be an inverted U-curve, where there is an optimum or a preference. Interest, however, seems to be a rising line reflecting time of exploration. Rapoport suggests that the behavioral difference between 'preference' and 'interest' would require two different types of spaces. The former would, therefore, need static

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[5] D. E. Berlyne, "Curosity and Exploration," *Science* **153** (1966) : 25–33.

[6] Mihaly Csikszentmihalyi, *Beyond Boredom and Anxiety*, (San Francisco : Jossey-Bass Inc., 1975), p. 49.

[7] Roger Hart, *Children's Experience of Place*, (New York : Irvington Publishers, Inc., 1979), p. 204.

spaces which would be influenced more by meaning, and the latter would need dynamic spaces. Therefore, "liking is more (although not exclusively), a matter of associational qualities than interest, which is more (although not exclusively) a matter of perceptual qualities."[8] Activities that involve movement need dynamic, complex spaces which must try to entice the viewer with an element of the unknown such as hidden views, narrow winding spaces, and acute transitions in space and/or sensory experiences such as light. Activities that involve rest and contemplation are usually static private spaces where children can talk to a friend or spend time by themselves.

Day dreaming, fantasizing, quiet interaction, and introspection, are all essential aspects of a child's inner development. Bettelheim argues that a lack of the opportunity for self initiated inner development is one of the main reasons why children seek " readily available stimuli"[9] such as television to fill their void. This type of stimuli in turn becomes an obstacle to any further inner development of the child. Children need the opportunity to make their own discoveries and seek out intrinsically rewarding action to develop their creative capacity. As Westland points out "normally we do not see their (children's) involvement beyond that of players of games or as users of facilities; in other words, as beneficiaries of opportunities others, primarily adults, have developed for them."[10] Westland fears that the most complex and potentially most devasting effect of modern affluent society is that of consumerism. Children grow up expecting to be entertained without having to play a role other than that of consumer or spectator.

1.2 A Conflict of Environmental Values

Societies and social groups that have removed themselves into a pleasure

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[8] Amos Rapoport,"Pedestrian Street Use : Culture and Perception," in *Public Streets for Public Use*, ed. Anne Vernez Moudon, (New York: Van Nostrand Reinhold Comp., 1987) 86.

[9] Bettelheim, "Importance of Play," p. 37.

[10] Cor Westland and Jane Knight, *Playing Living Learning : A Worldwide Perspective on Children's Opportunities to Play*, (State College, Pa. : Venture Publishing Inc., 1982), p. 15.

garden where all was designed for safety have achieved little else and have died in their smug little world.[11]

The suburban environment is all too often assumed by parents to be the ideal environment for children mainly because it is perceived to be safe and green. Sennett and others, however, question this idealized image of the suburban environment because they see it as embodying the 'purified thinking' of an urban monoculture. As Roger Hart points out,

> A most remarkable aspect of suburbs is that a central rationale for those persons moving to them since WWII has been that they offer an excellent environment for their children. This rationale has been based in popular adult images of nature and open space which are devoid of any careful reflection on children's activities and experiences. In fact, it seems to be based on a rather narrow visual aesthetics.[12]

Homogenous environments that are safe and green may appeal to parents who want to remove any element of uncertainty from the landscape. At the same time, however, this 'purified thinking' may also be depriving children access to landscapes diverse enough to support the total development of the child.

Although the integration of nature and city is a frequently cited goal of suburban developments, stemming from their Garden City roots, most suburbs merely "incorporate the trappings of nature."[13] Why do we think it necessary to separate town and country so completely? By perpetuating this belief that the city is an entity separate from nature and even antithetical to it, the suppression of natural diversity has dominated the way in which the city is perceived and continues to affect how it is built. Manicured lawns and specimen trees have replaced the original vegetation. For example, in 1918 there were fifty-eight-hundred acres of native vegetation on vacant lots within the city of Winnipeg, but even then it was being

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[11] Rene Dubos, *So Human an Animal*, (New York: Scribner, 1968)

[12] Hart, p. 349

[13] Anne Spirn, *The Granite Garden : Urban Nature and Human Design*, (New York: Basic Books, 1984) p. 34.

cleared at a rapid rate.[14] Of the original thirty-six streams and coulees within the city limits of Winnipeg only nine exist today and most of these have suffered alterations through culverting, loss of vegetation and re-alignments. [15] Designated play areas, such as neighbourhood parks, have also followed this trend towards natural simplification instead of compensating for the loss of natural diversity in the urban environment (Table 1). The creation of green spaces, as merely open spaces, results in park areas of little interest beyond their use as sports fields. The ability of a city to provide a diverse environment is becoming increasingly difficult within the present aesthetic framework. As Klaus Spitzer points out,

> at a time when the surroundings of cities are being destroyed by development ... when the last overgrown sites in our concrete cities are being built upon, and the rare ones which survive ... are administered as green spaces and thereby impoverished by decorative treatment, it must be accepted that the old rules of aesthetic design have become outdated.[16]

The application of a purified aesthetic and an engineering efficiency have reduced nature's rich diversity and its local accessibility to children in the urban environment.

It is important that children be reunited with the lost or disappearing landscape of diversity and spontaneity which is rapidly being planned, tided-up, designed and ordered. In contrast to most adults' desire for a 'controlled' environment, a child's environment must provide both security and serendipity to stimulate both predictable and unpredictable consequences. The spirit of play is often stifled because playfulness "consists of exploiting serendipity—the knack of stumbling upon interesting discoveries in a casual manner."[17] Most modern planning and landscap-

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[14] George Champion, "Winnipeg's Interest in Vacant Lot and Backyard Gardening," *Manitoba Horticulturalist*, (May, 1918), p. 37.

[15] Robert Graham, "The Surface Waters of Winnipeg Rivers, Streams, Ponds, and Wetlands 1874–1984 : The Cyclical History of Urban Land Drainage," Practicum, University of Manitoba, 1984.

[16] Klaus Spitzer, "The Abstraction of Nature," *Garten und Landschaft*, **89** (June, 1979) : 442.

[17] Martin Spray, "Landscapes of Serendip" *Town and Country Planning* (February, 1983) : 52–53.

Design	Pleasure Grounds 1850–1900	Reform Park 1900–1930
Concept	Place for recreation and psychic restoration Not so much passive as unstructured play Design Priority is artistry Use forms suggested by nature	Place for recreation and psychic restoration Organized play with programming of the local playgrounds Utility and athletics are design priorities Not so much a supplement to the pleasure ground as a substitute for the street More emphasis placed on playground aspect
Spatial quality	Spatial and environmental complexity Spatial sequences, vistas and illusions created Organic forms	Spatial simplification with the rise of the playground and decline of the park Formal (often symmetrical) layout
Ground surface	Modulated to reflect natural forms Depressions and raised areas Some flat recreational areas	Flat, to accommodate baseball diamonds, running tracks, etc.
Water	Artificial lakes, lagoons and ponds	Ponds often included in park area Swimming and wading pools in playground
Vegetation	Massed, to form and modulate open and closed spaces Native rather than exotic Specimen planting avoided	Trees and shrubs used to screen immediate environment of city Space no longer carefully modulated with vegetation Specimen planting

Design	Recreation 1930–1965	Open Space System 1965+
Concept	Place for leisure and entertainment Recreational facilities design priority Opinion that the ability to attract and hold people was in proportion to the number of attractions offered More equipment Standardization of all the old elements into a basic municipal package, which was used repeatedly	Place for unstructured play Recreational experience design priority Introduction of the adventure playground Municipal parks never really accepted the idea that children themselves should build play items Designers transformed children's homemade, free form equipment into new kinds of standardized, unmanipulatable items
Spatial quality	Simple and efficient	
Ground surface	Flat, hard surfaces (often asphalt)	Flat, but asphalt replaced by sand
Water	Swimming pools	Sprinklers, hoses
Vegetation	Relatively little vegetation, due to lack of funds for supervision and maintenance of planted areas. This was justified as resulting from a concern for safety	Vegetation usually minimal in adventure playgrounds, as they were often developed on demolition sites Urban parks continued to be stripped of vegetation for easier maintenance and police surveillance

Table 1: Changes in park ideals and their physical form.

ing reduce the chances of serendipity by making designs so obvious that they are unable to trigger the imagination or the potential for possible discovery.

One extremely important aspect of children's limited free range of movement is the different scale of experience compared to that of adults. To meet children's needs "environments with much 'finer grains' than the blanket-like suburbs"[18] are needed. Uniform surroundings reduce curiosity since they do not provide noticeable differences. When the outcome is highly predictable there is little uncertainity, and therefore, little potential for arousal. Appropriate design would incorporate what can be broadly described as appropriate levels of complexity. As Simon Nicholson notes,

> In any environment, both the degree of inventiveness and creativity and the possibility of discovery, are directly proportional to the number and kind of variables in it.[19]

When given the opportunity, children spend more time wandering around outdoors than most adults. Children's patterns of interaction are also more intimate, and intense. Children seem to find as much enjoyment in getting somewhere as they do in being somewhere, as Hart and Moore discovered in their studies. Most adults think of routes in purely functional terms, as a means of getting somewhere. One further distinction is that children's main mode of transportation is their feet and their bikes. Adults, particularly in the suburbs, rely largely on their cars. If we design supportive environments for children or adult pedestrians, we must design for the slow speeds at which they will be perceived. This means designs with an attention for small scale, intricacy, and complexity.

> Complexity is best expressed in terms of noticeable differences. What is important is the rate of information, or the number of noticeable differences per unit time. Thus speed plays an important role in perception of noticeable differences and hence of complexity. It can, therefore, be

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[18] Hart, p. 348.

[19] *What do Playgrounds Lack?* Simon Nicholson 1970, cited by Simon Nicholson in "How Not To Cheat Children : The Theory Of Loose Parts," *Landscape Architecture* **62** (October, 1971) : 30.

asserted that pedestrians and motorists differ greatly in the way they perceive urban environment.[20]

The environment must be structured to increase complexity, to increase dissimilarity of the components, and to manipulate the elements so that they cannot be categorized as just one unit and reacted to simply. Rapoport, as already mentioned, states that complexity which triggers interest is more a matter of perceptual qualities. Ulrich[21] found, when he investigated the visual properties that influence aesthetic preference and interest in the natural environment, that the ground surface texture was a critical component in perceived visual and spatial complexity. Scenes having scruffy irregular undergrowth or surface textures that disrupted the sense of continuous depth presented the observer with moderate to high levels of complexity and uncertainty. A woodland edge of varying degrees of visual penetration, however, also adds spatial character and visual excitment. Although the even ground surface of the park-like setting seemed to be the 'preferred' treatment by this study group (probably adults since it did not state otherwise), there is a need to broaden the design standards of tidiness and order to include the whole spectrum of opportunities offered by nature's rich structural diversity.

Opportunities for exploration in the urban environment are extremely limited by the lack of complexity. As Ruff points out, "most of the shadow and mystery that lend enchantment to children's play has been swept away."[22] Unfortunately, most suburban neighbourhoods are largely built around adult's values for tidiness and easy maintenance. As Clare Cooper states,

> If we continue to landscape space in the 'clipped lawn' aesthetic we will soon find children seeking hiding places under the backstairs, beneath the juniper bushes and behind the garbage shed.[23]

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[20] Rapoport, "Pedestrian Street Use" p. 86

[21] Roger Ulrich, "Aesthetic and Affective Response to Natural Environment" in *Behavior and the Natural Environment*, ed. Irwin Altman and Joachim Wohlwill (New York : Plenum Press, 1983)

[22] Alan Ruff, *Holland and the Ecological Landscapes : A Study of Recent Developments in the Approach to Urban Landscape*, (Cheshire : Deanwater Press Ltd., 1979), p. 34

[23] Clare Cooper, "Remembrance of Landscape Past", *Landscape*, **22** (1978) : 43.

At present, children must restort to finding ways of fitting into the adult world, which has generally neglected to recognize the special qualities necessary to support children's play within the neighbourhood environment. In the studies by Mary Berg and Elliot Medrich, Mark Francis, Roger Hart, and Robin Moore,[24] they found that although parks and school playground might have been designed for their use, children still seemed to seek out undeveloped or what many adults would consider 'degraded' green space. A study by Mark Francis[25] investigated the conceptual differences in preferred open space qualities of children and adults. What he discovered was that adults' use, and therefore, value of the landscape is much different than children's. Two lists of antonyms would basically describe the results (Table 2). The critical concerns of many parents were safety and perceived aesthetics of the landscape (Figure 1). In contrast, children desired challenging environments they could modify and claim as their own. As Cooper points out,

> It would be interesting to find out at what age we cease taking risks and directly experiencing the environment and start mapping out our actions to avoid conflict, uncertainity, and fear.[26]

For children, therefore, undesigned natural areas had more appeal to them than the manicured parks because they met certain needs that developed play spaces could not—natural diversity, manipulation, and symbolic ownership.

Opportunities for children to physically manipulate their environment are seldom found in more conventional park settings and tidy residental sectors. Adventure

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[24] Mary Berg and Elliott Medrich,"Children in Four Neighborhoods : The Physical Environment and Its Effect on Play and Play Patterns," *Environment and Behavior* **12** (September, 1980); Mark Francis, *Children in Village Homes : A Participatory Study of Child Ecology with Implications for Design of the Village Homes Playground* (Davis Cal. : University of California, 1981); Hart, *Children's Experience of Place*; Robin Moore, *Childhood Domain : Play and Place in Child Development* (Dover, New Hampshire : Croom Helm Press, 1986); Robin Moore, "Collaborating with Young People to Assess their Landscape Values," *Ekistics* **47** (March/April, 1980).

[25] Mark Francis, "Negotiating Between Children and Adult Design Values in Open Space Projects," *Childhood City,* **10** (1983)

[26] Cooper, "Remembrance of Landscape Past," p. 38.

Table 2: Some conceptual differences in preferred open space qualities*

CHILDREN	ADULTS
Challenging	Safe
Loose parts	Fixed parts
Water	No water
Fantasy	Real
Alternative equipment with some traditonal elements	Traditional
Change and discovery	Static and known
Look does not matter much	Neat looking important
Rough edges	Clean edges

* Source : Mark Francis, "Negotiating between children and adult design values in open space projects" *Childhood City*, Vol. 10 No. 4, 1983, p. 30 Table 4.

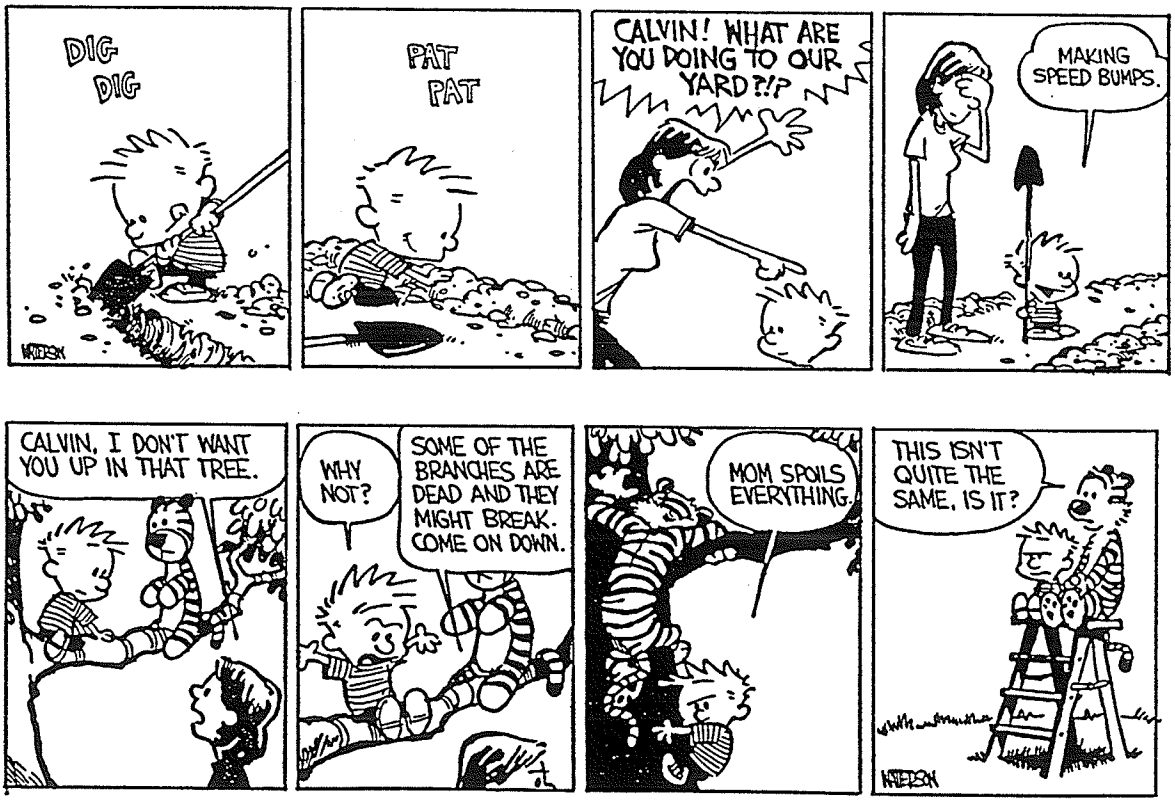

Figure 1: The cartoon 'Calvin and Hobbes' comically illustrates the contrary values and concerns of children and adults.

playgrounds have been promoted for years, by people such as Joe Benjamin, Lady Marjorie Allen, and Clare Cooper,[27] are an effective solution where children are encouraged to build their own play environment under adult supervision. Based on free manipulation of loose materials instead of exercise-oriented equipment, they appear to be a good solution from the perspective of child development. The concept, however, has two flaws. First of all these designated, fenced play areas, which are often not locally available, tend to segregate the child from his or her immediate neighbourhood environment. Secondly, in the United States and Canada, the concept generally has not been well received. The visual reality of an adventure playground seems to cause offense, and therefore, the concept confronts mental barriers in adults. By some adult values, it is untidy, noisy, and "most of all it is the antithesis to our well-manicured playgrounds."[28] The main problem is the contrast between the high and low value children place on adventure play and tidiness respectively, and the reversal of these values by adults.

As Robin Moore[29] found, based on his experience with the Environmental Yard, natural associations do not have the same problems with perceptual acceptance as adventure playgrounds do in North America. In Canada then, the undesigned, natural areas seem a more appropriate way to incorporate or accommodate children's necessity to physically manipulate their environment. For example, Mark Francis discovered the importance of several undesigned green spaces in his extensive study of the Village Homes community. This discovery led him to recommend revising the master plan to include and protect more natural, undesigned spaces for children. The incomplete state of the community's development was for the children

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[27] Joe Benjamin, *Grounds for Play,* (London : National Council for Social Service, Bedford Square Press, 1974); Lady Marjorie Allen, *Planning for Play,* (Cambridge Mass. : M.I.T. Press, 1968); Clare Cooper, "Adventure Playgrounds: Europe Leads U.S. in Reuniting its Children with 'The Lost Landscape of Spontaneity'" *Landscape Architecture,* **61**/1 (October, 1970) p. 18–24.

[28] Anne-Marie Pollowy, *The Urban Nest,* (Stroudburg Penn.: Dowden, Hutchingson, and Ross, Inc., 1977) p. 123.

[29] Robin Moore, "Children and the Urban Environment," Videocassette, (Winnipeg: University of Manitoba, 197?)

an ideal situation. Construction sites and the loose material around them provided the building material and the yet undeveloped land provided the marginal quality necessary for children to feel comfortable building hiding places and allowing other manipulative activity to happen. In this suburban community as in many others, opportunities for children to build and manipulate their environment is greatly reduced as these undesigned places are tided up or developed.

Many adults fail to appreciate undesigned natural areas' wealth of playing and learning opportunities. In her study, Marion Shoard[30] discovered that adults underestimate children's preference for natural areas as playgrounds. Adults are disposed to look upon space altered by people as being better than nature or as the only legitimate place for play.[31] Inconsistant with this attitude, however, is the finding by both Cooper and Anthony[32] in two different studies that most adults who speak of their happiest experiences will describe places with which they had a strong personal tie such as trees where they built forts, undergrowth where they created 'smugglers passages' or dumps where they could find scraps of wood and empty boxes. It is interesting to note that "rarely if ever will their treasured memories revolve around schoolyards or parks or other formal spaces provided for play."[33] It seems that by adulthood many have withdrawn from the landscape they experienced with such intensity as a child, and have forgotten or no longer see the relevance of the wilder areas for today's children.

Besides providing diversity and manipulative environments, undesigned areas offer privacy and symbolic ownership. 'Wild' natural areas are distinct from others in their informality, communicating through their unkept appearance a neutral ownership. They are urban spaces unclaimed by adults for any particular use. A manicured and well maintained landscape, however, seems to indicate adult own-

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[30] Marion Shoard, "Children in the Countryside," *The Planner*, **65**/3 (May, 1979) : 67–71.

[31] Peggy Miller, *Creative Outdoor Play Areas*, (New Jersey : Prentice-Hall Inc., 1972), p. 26.

[32] Cooper,"Remembrance of Landscape Past;" Kathryn Anthony "Moving Experience : Memories of Favorite Homes," *Environmental Design Research Association Annual Conference June 28 –July 2, 1984 Proceedings : The Challenge of Diversity* ed. Donna Diserk and David Campbell (E.D.R.A., 1984)

[33] Cooper, "Remembrance of Landscape Past," p. 18

ership or occupation to children.[34] For example, Cooper[35] found that in an urban setting formal green space, such as a housing development's courtyard, was not used by kids. Instead she discovered that two-thirds of all play activities occurred on paved areas such as streets, sidewalks and parking lots. The use of one area over another seemed to relate to the forbidden quality of the well maintained adult dominated courtyard and the unclaimed, free quality of paved areas. She suggests that these paved areas in an urban environment have the same relationship to their environmental context as 'wild' natural areas have for more rural environments. Both are free to be used since they are 'neutral' unclaimed territories of little value to adults. By using these unstructured areas the potential conflict between active users of a green space and those who see them as aesthetic spaces is avoided.

Adults often value the aesthetic and economic aspects of property. They tend to relate to the landscape in perceptual terms, often judging environmental quality in terms of its level of maintenance whereas children, as the prime users, relate to the environment more in associational terms. An example of this relationship is illustrated with the way in which children name elements within their landscape. Invariably the names are tied to that child's own use of and experience with the landscape. As Hart[36] found, place categories often carry the purpose or use of the place in their description such as 'climbing-trees' or 'elevator-trees.' These hyphenated functional place names have a different emphasis from the shorthand place-naming adults use.

When children invent their own place names it indicates the degree of proprietorship that can only happen when adults do not dominate the scene too heavily. In Berg and Medrich's study, 'found' play spaces were highly valued by the children in all four neighbourhoods. As Berg points out "this should not be surprising, for it reflects children's desire to have something that is their's at a time when virtually everything else is built for or 'belongs' to grown-ups."[37] Young people want per-

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[34] Hart; Moore, *Childhood Domain;* Moore, "Collaborating with Young People"

[35] Beate Jansson, *Children's Play and Nature in an Urban Environment,* Bern, Switz.: Peter Lang, 1984.

[36] Hart, p. 348

[37] Berg, p. 340

sonal control of a space to do as they like and not what other people have planned for them. They do not want to be hampered by verbal or visual prohibitions that say 'don't do this' and 'don't do that'. A feeling of perceived control and privacy within the exterior environment seems to be as important for children as it is for adults. Children need private places around the home, in the corner of parks, or on wastelands where they can escape to do what they please. Rappoport, as mentioned earlier with regard to 'preference', points out that symbolic ownership and meaning of the environment is largely influenced by associational qualities. This sense of symbolic ownership is increased with frequency of use, and the personalization of a space by taking possession, completing it, or changing it.[38] Children develop feelings of territoral possession as they explore, learn, and acquire competence in their use of the outdoors. For example, in Hart's study[39] children placed much more value on paths which they have found or made themselves, compared to the network of paths already given to them. It is also very important for children to make places for themselves. By modifying and making places for themselves, children feel comfortable in an environment because they have developed a sense of attachment to it. Children's fort or club building is one of the most obvious means they use to establish a sense of environmental control. This desired sense of ownership seems to imply that we should think more about how to create environments in which children can 'find' or 'create' their own settings for play. As Rapoport argues, "we tend to overdesign buildings and other environments, ... (and therefore), the question becomes how can one design 'frameworks' that make this (open ended design or loose-fit) possible."[40] In general, children of school-age groups seek different levels of independence, challenge, and peer group interaction. Bettelheim suggests that such opportunities would be supported by what he calls "spielraum"[41] meaning free scope, plenty of room. Hayward supports this view in his suggestion that "perhaps it is the freedom, openess and choice reguarding their play and play settings which

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[38] Amos Rapoport, *The Meaning of the Built Environment : A Nonverbal Communication Approach*, (Beverly Hills Cal.: Sage Publications Ltd., 1982), p. 21.

[39] Hart, p. 349

[40] Rapoport, *Meaning*, p. 22

[41] Bettelheim, "Importance of Play," p. 37.

are critical."[42] According to a number of studies, it is often the undesigned green spaces that provide this freedom to establish a real sense of childhood possession in a place temporarily abandoned by the adult world. Planners and designers should rethink their approach to children's play areas, as Ulrich Illing advises. He states,

> Instead of thinking up insurance clauses, drawing up standards and building ever more artifical and unalterable playgrounds, those adults responsible should turn their attention to seeing that sufficient space is retained to allow natural structures(trees) to develop at all, and that at least enough freedom remains for children to adapt the spaces themselves.[43]

Urich Illing strongly believes that only with a varied and natural framework the basic precondition for creative play is possible.

1.3 In Search of a Natural Framework for Play

> no adventure playgrounds, playstreets, weekend or holiday landscapes can provide the necessary sum of varied stimuli or the necessary challenge ... in the same way that a small piece of nature within a short distance of the front door can.[44]

This section will look at a few suburban examples of how natural environments were incorporated, their characteristic features, and how these features do or could support children finding or creating their own settings for play.

1.3.1. Victorian Parks

Even though these parks were not designed with children's play in mind and presently restrict play with their maintenance policy of don't touch, they demon-

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[42] Geoffrey Hayward, Marilyn Rothenberg, and Robert Beasley, "Children's Play and Urban Playground Environments : A Comparison of Traditional, Contemporary and Adventure Playground Types," *Environment and Behavior,* **6**/2 (June, 1974) : 165.

[43] Ulrich Illing, "Tree Houses—Dream Houses". *Garten und Landschaft* Vol.89 No.12 (Dec. 1979): 930–932.

[44] Hans-Georg Jaedicke, "The Elemental Importance of Landscape, Open Space and Natural Structures in Child Development", *Garten und Landschaft,* **89** (December, 1979) : 910.

strate how a richly-endowed parkscape can enormously extend and diversify children's play. During Moore's study of three neighbourhoods in England, visits to two Victorian parks with kids gave him insight into the play opportunities in these urban parks. Their intermingling and deliberate juxtapostion of natural and cultural forms convinced him of the value of diversity as a central theme (Figure 2).

Moore concluded that vegetation should be used more frequently in environments used by children. Thickly vegetated parks with hedges, thickets, trees, and shrubs provide special opportunities for hide and chase games and wildlife exploration. With the children, Moore discovered a variety of tunnel-like spaces which resulted from shrubs being planted in three staggered rows about five feet apart. This tunnel-like space was particularly liked because it allowed the kids to run along its length without being seen. These shrubs, with a lush canopy but a relatively open network of branches beneath, were also liked because they provided small intimate spaces for camps and hideouts.

Lakes, ponds, and ornamental pools provided contact with water in a variety of forms. Water was a big attraction for quiet play. The small lake and ponds were stocked with fish, yet even though the children rarely caught anything, they really liked to go fishing. As Moore later found out, its attraction was not so much the fishing but that it was a good pretext to get away from home and hang out in the park. A particularly liked spot was a small pond surrounded by stones, which was too small to interest the adults, so the kids would go there because it was quiet and they could catch tiddlers. A small stream flowing between the stones provided an excellent play resource for just mucking about and floating leaves. The ornamental pool was also liked because it provided an easily accessible and prominent place to play with water. It also contained goldfish.

The third feature, which was particular to these Victorian Parks, was what Moore called 'architectural follies'. A raised sitting platform with a balustrand around it was known as the 'castle' to the kids. It and a bird table became impromptu stages for fantasy play. These features as well as a clock tower and the ornamental pool provided a system of landmarks in contrast to the vegetation.

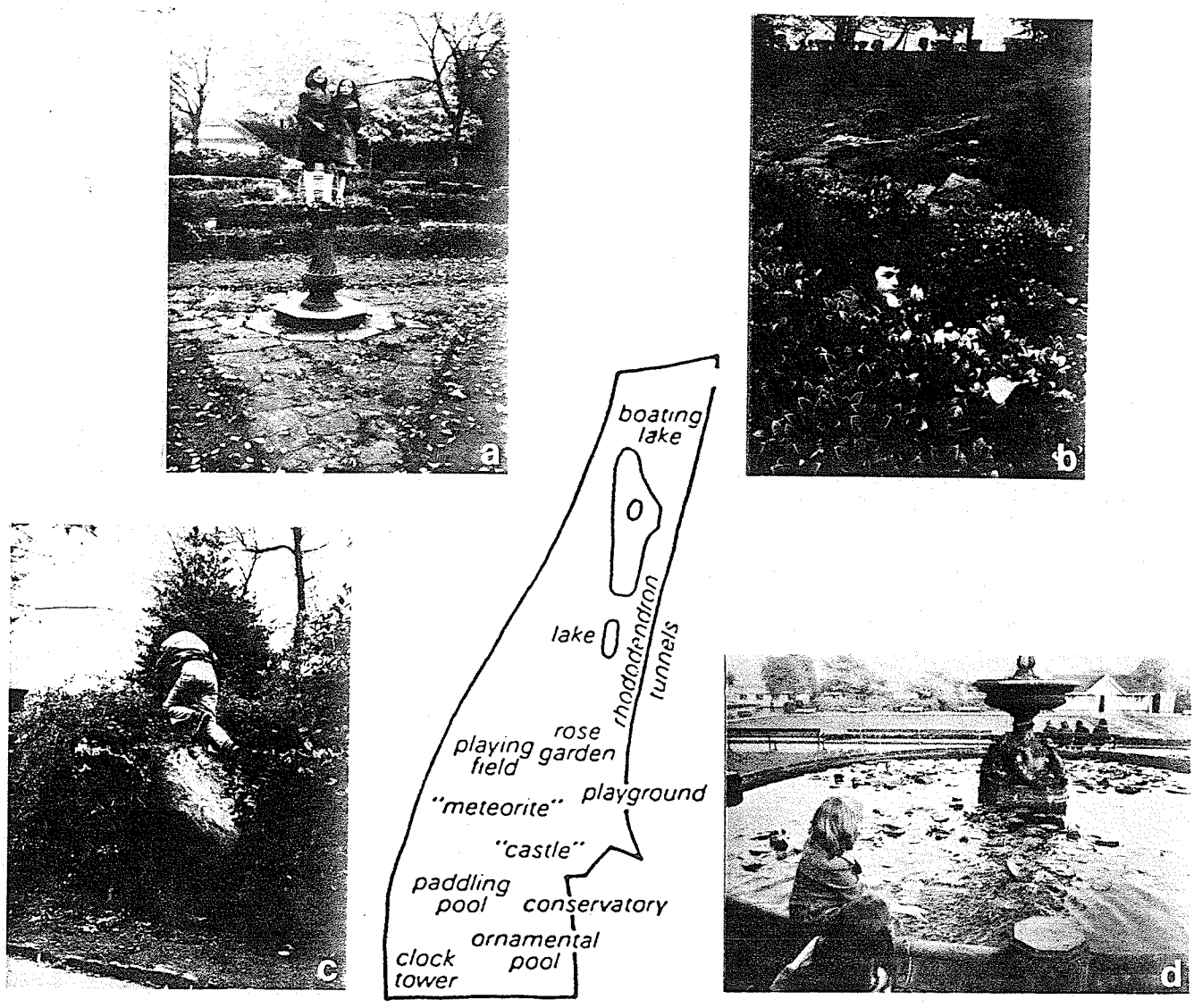

Figure 2: Tunstall Park, a Victorian park in Mill Hill, is a good example of the possible diversity when carefully contrived natural forms are justaposed with cultural forms. Areas of interest are: a) the bird table b) the rhododendron tunnels c) the 'meterite' d) the ornamental pool (Source: Robin Moore, Childhood Domain, 1986).

For Moore these parks and others presented what he saw as the essential ingredients for a play setting. They are as follows:

- easy access from the surrounding residential area
- a clear geographic identity for parents
- strong sense of enclosure through the use of sunken topography and/or vegetation
- varied, undulating topography with different slopes and changes in levels
- better than average microclimate
- diverse play opportunities such as play equipment, architectural follies, pool, pond, stream, sandy/earthy/muddy areas, hedges, bushes, long and short grass, vegetation structured to create small intimate spaces, and climable trees
- must remember that the scale of most children's needs is small.

These ingredients provide a framework for the provision of play space.

1.3.2. English Common

Surrounded by suburban housing the English urban commons discussed by Laurie[45] represents quiet green islands of country in towns. The provision for play is accomplished by providing unstructured diverse areas of vegetation types and spatial characters (Figure 3). The commons contained a sizeable woodland which provided dense masses of vegetation. These solids are balanced with voids of open glades of mown grassland, rough grass swards and open spaces with areas of scrub. The various types and sizes of openings provide numerous living rooms within the woodland landscape. The irregular fringe of the woodland edge contributes greatly to the diversity of spatial character and visual stimulus. The varying degree to which the eye can penetrate through the canopy or through the undergrowth adds considerable diversity, and therefore, visual excitment.

Moore, in his study refers to the use of some smaller mown grass areas which were reminiscent to him of traditional town greens with a visual character somewhere between park and rough landscape. These sheltered intimate spaces, which

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[45] Ian Laurie, "Urban Commons" in *Nature in Cities : The Natural Environment in the Design and Development of Urban Green Space*, ed. Ian Laurie (Chichester : John Wiley and Sons Ltd., 1979)

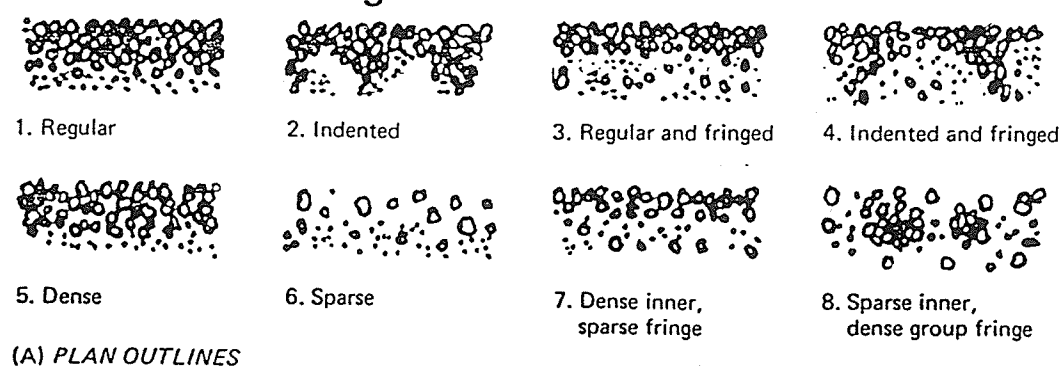

Figure 3: Drawings illustrating the potential diversity of the woodland edge and the woodland clearing as found in the English Common (Source: Ian Laurie, Urban Commons, 1979).

were larger than 'fronts', were well used compared to the large windy playing fields, which were only occasionally used for organized sports. The physical differentiation and the sense of enclosure provided by the vegetation made these spaces extremely popular with children. Children were particularly attracted to the unreclaimed edges of the greens. Moore states that "in these behavioral ecotones play flourished because of the high density of resources to be found."[46] The landscape quality of the 'common' or 'green' represents a type of vegetation structure that could be designed into urban green spaces.

1.3.3. Washington Environmental Yard, Berkeley, California

The challenge for Robin Moore was to create a "responsive, positive situation where kids interrelate creatively with each other and their surroundings where, because of the infinite possibilities, a universal, spontaneous, self-regulated and fluid order can evolve."[47] Through his work with the children and residents a one-and-a-half acre asphalt schoolyard was turned into a diverse and complex play enviroment. The yard contains three sub-yards—the asphalt ball play area; a playground with a large sand pit, modern swings, and a variety of climbing frames; and finally a natural resource area with an informal garden, ponds, streams, beaches, paths, bridges and approximately one-hundred-thirty-five species of trees and plants (Figure 4). All three zones are important for providing choice of play environments but also to balance the impact of the users on the natural environment. The natural resource area and Moore's findings on the children's views for this project are of particular interest here.

Moore found that most of the children's ideas expressed their need for small scale, personalized environments, each differentiated from the next in small esoteric ways. It meant that "there (was) a need to build this kind of identity into the environment so that every part is or (could) be differentiated from every other part."[48] Moore reiterates Nicholson's philosophy that the only way to provide for a high degree of individual expression and choice is to provide an environment that

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[46] Moore, *Meaning*, p. 146.

[47] Robin, Moore, "Anarchy Zone: Encounters in a Schoolyard," *Landscape Architecture*, **65** (October, 1974) : 365.

[48] Moore, "Anarchy Zone" p. 366.

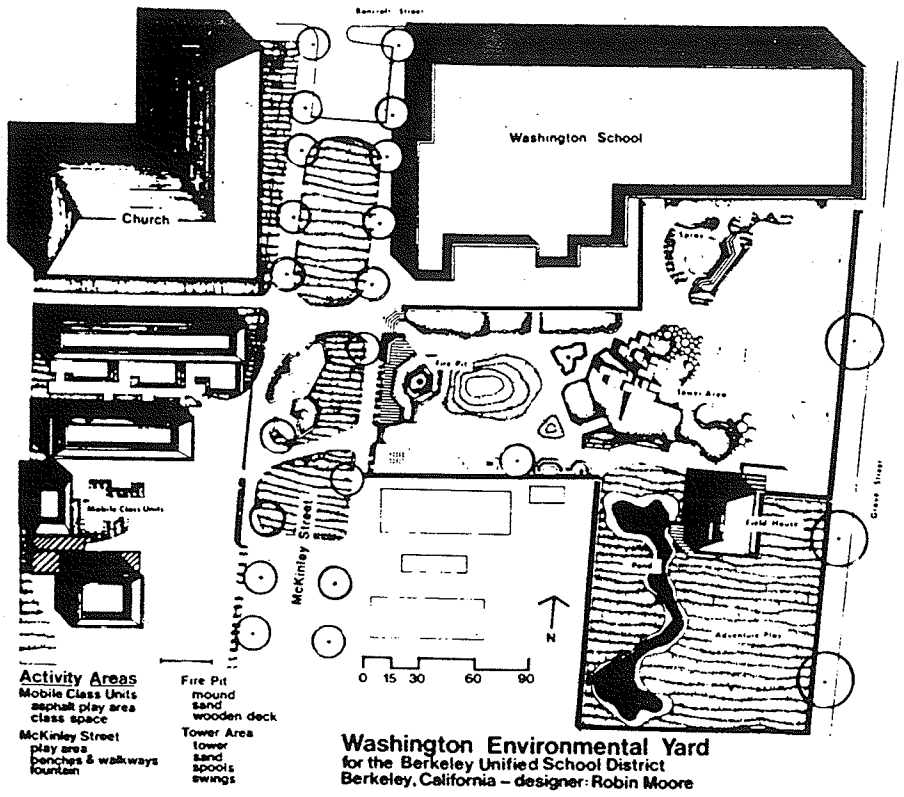

Figure 4: A plan of the Washington Environmental Yard illustrating the variety of settings found in the three basic zones of this exceptional school ground—an asphalt play area, a contemporary playground, and a natural resource area (Source: Randolph Hester, Planning Neighbourhood Space with People, 1984).

is ambiguous, open-ended, and changeable, so that the children can manipulate it physically and mentally to suit their own ends. Moore observed that manipulation can be on a small scale, with children playing with things such as sticks, stones, dead leaves, blades of grass, or larger scale with things such as scrap lumber. He sees the concept of change as closely intertwined with environmental diversity.

Play environments need to be far more complex and contain more possibilities, instead of so much vacant space for running around. Natural elements such as grass, flowers and particularly trees were frequently mentioned as desireable features. Plants that have a great capacity for regeneration are particularly good for play areas. Although water is a very sensuous and desired play material by children, it is the least provided play element by adults. The pond area provided a peaceful area for quiet play or just sitting and talking. By increasing the diver-

sity of the ecosystems through landscaping, children benefitted from the number of different organisms such as birds, beetles, bugs, butterflies, worms, fish, tadpoles, and many other forms of small scale 'wildlife'. The creation of indigenous planting and aquatic environments insures that habitats for such organisms are built into the urban environment. It is important that this small scale wildlife be recognized by adults as an important play and learning resource. The aim is not to create a highly protected 'nature reserve' but to allow children the opportunity to interact with their environment.

1.3.4. An Ecology Park in London

Dr. David Goode, the Greater London Council's senior ecologist, has been promoting the application of ecology to planning in cities. For him and others, there is a need for people to recognize nature in the city as more than just the horticultural landscape. His 'citywild' concept encourages the establishment of a diversified plant community instead of the manicured lawns and ornamental planting of the traditional Victorian Era park. It allows nature to flourish in the city where people will have the opportunity to have contact with it on a daily basis. This concept is designed to take advantage of low-density sprawl and attempts to build long-term ecological stability into the growing and existing urban development.

An ecology park located near King's Cross Station (Figure 5) is a good example of a citywild creation. A derelict, rubble-strewn yard was transformed into two acres of varied topography, which includes a pond with reed beds, and is fringed with willows. Mini-habitats such as a small woodland, rough grassland, a cut meadow, and piles of stones, support two-hundred-fifty species of plants, at least two-hundred insects, numerous birds, frogs, toads, hedgehogs, and other forms of small scale wildlife. Local kids and school groups are drawn to the pond and at the field station located on the site children are issued nets for mini-safaris. Their catches are thrown back. In contrast to the usual English park mentality wading in the pond, which helps control the lining plants, is not discouraged at all by the park's warden. This project faces the same challenge Moore faced —that of striking a balance between maintaining wildlife and its habitat, and public access to it. Unlike nature conservation in the past, the citywild concept tries to ensure pleasure for the user as well as provide the necessary habitat for the wildlife.

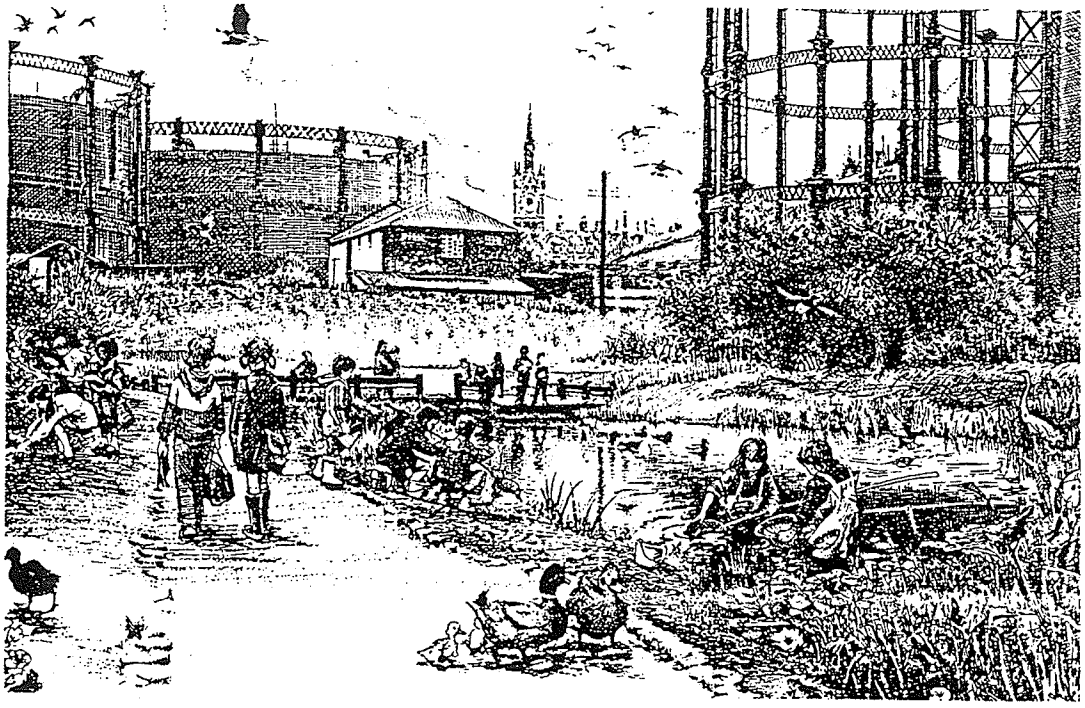

Figure 5: A drawing of the King's Cross Station ecological park (Source: Sandra Higgins, "Green Vision—David Goode", *The Architect's Journal* Vol. 5, 1986).

1.3.5 Designing for Wildlife and Children

It seems appropriate to begin this section with a quote from Clare Cooper-Marcus. She points out that "we know more about the ecology of many wild animals than we do about our own children."[49] Open spaces developed for wildlife would be beneficial for children in two ways. The environmental diversity and spatial qualities desireable by wildlife would also be desireable by children as play areas. Secondly, by attracting wildlife to an area the open space becomes even more interesting for children. Informal/formal open spaces should be designed and managed as diverse and resilient habitats for wildlife, which would in turn create a varied environment for children's play. These should be playing fields, mown grasslands, but also large areas of more naturally diverse free-growing swards, meadows and woodlands.

The composition and vegetative structure of the open space is important. A

[49] Clare Cooper-Marcus, "Remembrance of Landscapes Past", *Landscape* **22** (1978) p. 43.

mixture of plants attracts more wildlife than a pure stand with no understory. In a study by Nancy Tilghman,[50] she makes a few management recommendations which are equally applicable to play environments. For example, she states that "maintenance of natural vegetation in the shrub layer can provide an increased number of niches for an increase in the number of bird species".[51] Leedy *et al.*[52] Tilghman also recommended that woodlands have a variety of microhabits, such as small scattered openings. These would be appealing to children as well as wildlife. The shrub understory is needed to create the 'inner rooms' or small intimate spaces. Spatial and visual interest for paths and different kinds of open spaces are also dependent on the visual control that massed vegetation creates.

It is also important to have a vegetative edge that is sufficiently wide and of the proper quality. The edge, which is the zone where different cover types meet, is a very important habitat for wildlife. Woodland is more attractive to wildlife if it is a little ragged around the edges. To create a good border, native shrubs, forbs and saplings should be allowed to invade the adjacent open space for a short distance. Variation in the woodland edge would create the visual interest previously discussed with regard to the English Common.

If an area of informal land is not available, a linear configuration is still well suited to songbirds since it provides much edge. Small birds and small mammals, such as ground squirrels and rabbits, will live and raise their young on a few acres. Use of a good shelterbelt design will create wildlife cover and protection from the wind for a linear open space. The shelterbelt needs to be wide enough to develop a triangular profile with trees and tall shrubs towards the centre, and smaller shrubs, forage and grasses at the edges (Figure 6).

Another recommendation meant to increase wildlife was the inclusion of water and wetland areas in or near existing vegetation. Wetlands are attractive to upland wildlife as well as to waterfowl and marsh birds. If a small pond is not available one

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[50] Nancy Tilghman, "Characteristics of Urban Woodlands Affecting Breeding Bird Diversity and Abundance", *Landscape and Urban Planning* **14** (December, 1987) p. 481–495.

[51] Ibid p.493

[52] D.L. Leedy, R.M. Maestro and T.M. Franklin, "Planning for Wildlife in Cities and Suburbs", *Childhood City Quarterly* **9** (Summer, 1982) p. 13–15.

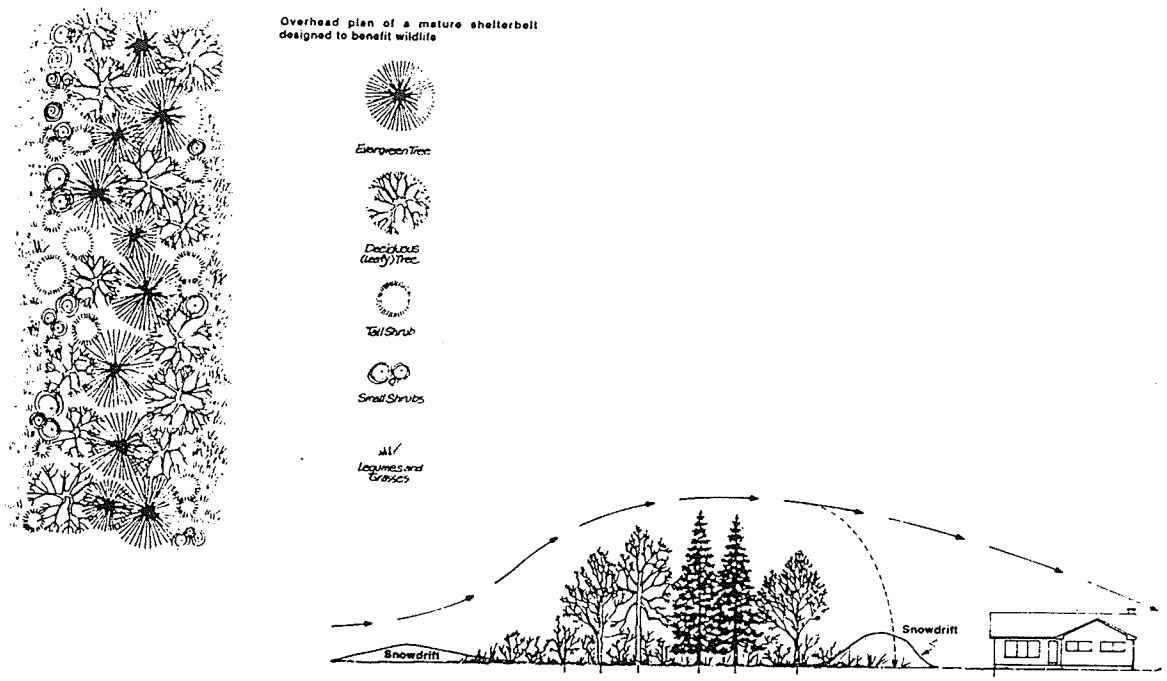

Figure 6: A plan and profile of a shelterbelt with a good vegetative edge for wildlife.

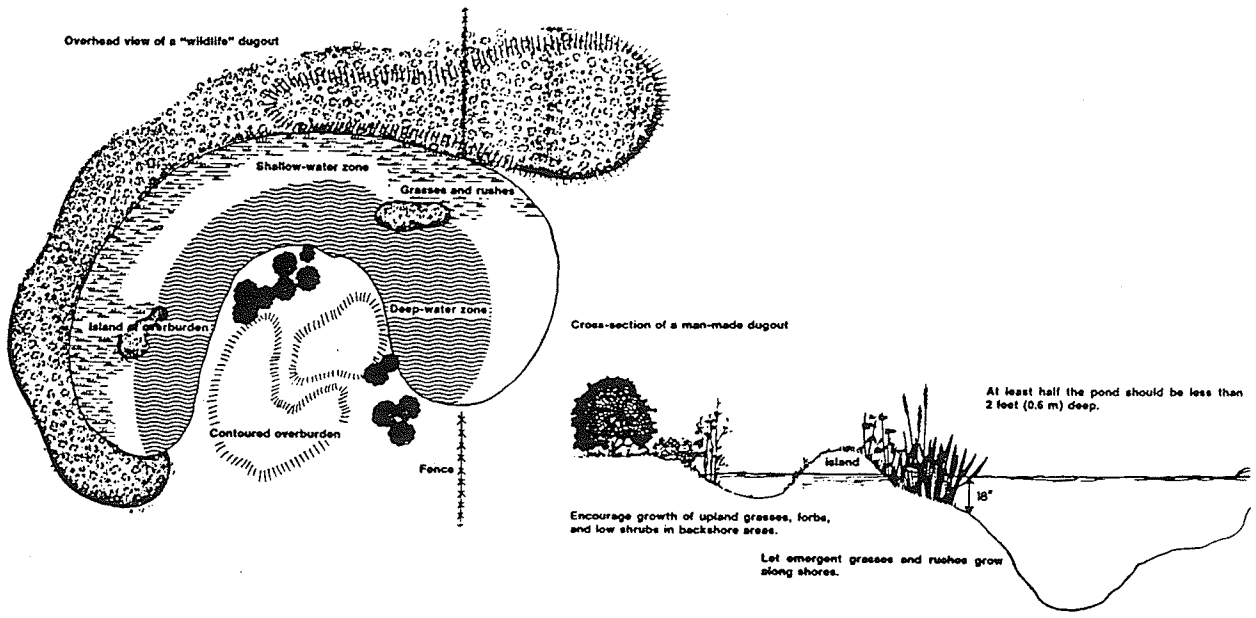

Figure 7: A plan and profile of a small pond with good habitat for wildlife (Sources: Poston and Schmidt, Wildlife Habitat: A Handbook for Canadian Prairies and Parklands, 1981).

could be created in a natural depression with a good catchment area where water collects after a spring thaw. Clay soil is particularly good for the retention of water at the surface. Ponds should be developed with irregular shorelines to create more edge habitat, and there should be at least one gently sloping shore which can be colonized by rushes, grasses and cattails. This type of vegetation attracts ducks, marsh birds, frogs and muskrats. Small islands could be created using excavated material (Figure 7). As was the case with the ecological park in Britain and Moore's Environmental Yard (Washington), children would greatly appreciate and enjoy the small scale wildlife that ponds support.

1.3.6. The Kennedylaan Project, Heerenveen, Holland, 1966

The designer, Louise le Roy, believes that if the whole city cannot be part of nature then at least the suburbs can. To illustrate his point he paraphrases the zoologist Denis Owen with the statement "the city centre can be to the suburbs, what the bare mountain top can be to the wooded foothills."[53] Louis le Roy feels that the wild garden is viewed by some as an anarchic force opposed to the idea of a well planned and organised city. The main distinction in his opinion is that he was aiming for environmental complexity instead of simplification.

Although le Roy planted over one thousand plant varieties in the Kennedylaan project in Heerenveen (Figure 8), with the intention of achieving a diverse plant community, maintenance and lack of ecologically sound planting resulted in some of the more robust species engulfing the weaker varieties. His approach of minimum design and leaving the majority of decisions to be made by people on the spot works well from the participation aspect, but falls short from the standpoint of achieving a diverse plant community.

Despite the project's short-comings, le Roy introduced into the suburban landscape a "quality rarely found in the conventional municipal park ... from the real aesthetic of nature."[54] The notion of freeing a landscape from the usual minimal and static approach is a positive direction, but to make it work there is a need for more ecological understanding and planning.

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[53] Sandra Higgins, "Green Vision: Louis le Roy," *The Architect's Journal* **5** (February, 1986) p. 38.

[54] Ibid, p. 39

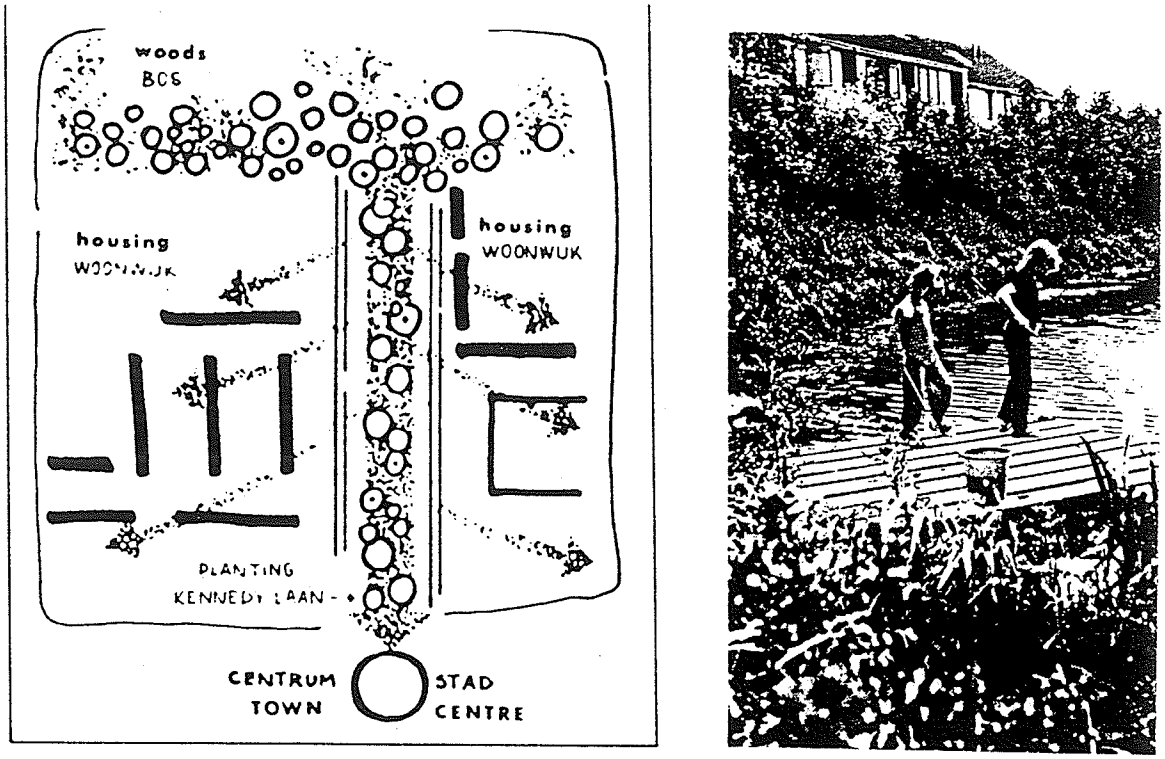

Figure 8: A conceptual plan and picture of the Kennedylaan project by le Roy (Source: (left) Allan Ruff, *Holland and the Ecological Landscape*, 1979. (right) Klaus Spitizer, "The Abstraction of Nature" *Garten und Landschaft* Vol. 6, 1980).

1.3.7. The Delft Experiment, Delft, Holland

The Amsterdam Bos or Forest Park introduced to the Dutch urban landscape, in 1927, an aesthetic based upon nature rather than art. It introduced entirely new values and an ecological approach to the urban landscape. A diverse and ecologically structured landscape as opposed to a visual amenity, created the base for a range of organized and informal activities similar in character to the English commons. Earlier parks, based on the garden concept, failed to meet the needs of people in the city, especially those of the child. Active pursuits were segregated or excluded from the 'garden' and set in a barren playground.

By following the Dutch progression of design ideas for the provision of play in three housing developments, much can be learned. Designers recognized the failure of metal and concrete in traditional playgrounds so they turned to wood, building climbing structures and play houses within extensive sand areas in the

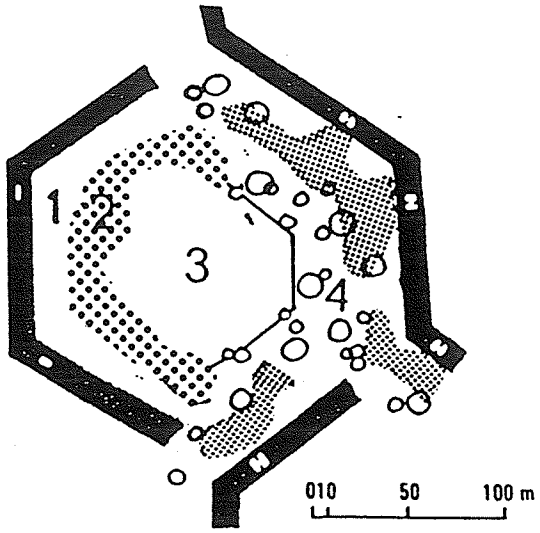

Figure 9: A diagram of one of the internal courtyard zoning at Bijlmermeer, Amsterdam (Source: Allan Ruff, *Holland and the Ecological Landscape*, 1979).

Delft suburb of Voorhof. Although these structures were more exciting, they still remained inflexible and unsympathetic to manipulative play. The Voorhof play space took the conventional approach to the limits, with its emphasis still on play objects instead of play environments. The green space reflected the gardenesque tradition of exotic, specimen plantings. Not until a later stage did they realize the potential of using native trees and shrubs around the play space.

In the Amsterdam suburb of Bijlmermeer, the green space was developed by extending the natural planting used at the Bos right into the urban housing green space (Figure 9). The landscape ceased to become a decorative feature and became a functional, structural element in the external environment. Carved into the planted wooded areas were small, sheltered compartments. Planning involved careful climatological analysis as a pre-requisite for laying out areas so the residents were sheltered and felt psychologically secure in the green space. The approach to design and management was intended to encourage use of the green space. But in spite of the increased use of this concept over more traditional approaches, the

landscape still had social limitations inherent in its design. Although the planting had acquired great naturalness in its appearance, the design still relied on a strong edge. While this feature brought clarity to the design, it also influenced the behavior of the users. For example, children did not actively use the wooded areas. The clearly defined planting edge seemed to communicate to the users a 'keep out' or a 'don't touch' behavioral reaction. The formal edge became a psychological barrier for the children inhibiting their free use of the planted areas. In less defined natural areas no such barrier exists. In order to encourage free movement and use of the entire area, the abrupt vegetative change was replaced with the irregular, transitional quality found in a natural woodland edge.

As Rapoport points out, designers tend to react to environments in perceptual terms, whereas the user reacts to the environment in associational terms. He states that "when people enter a setting, that setting provides cues that they understand, that they know what the context and situation are, and hence what the appropriate rules, and behavior are."[55] This implies that settings communicate appropriate behavior. Environmental cues provide information that guides behavior by letting people know through association which kind of domain or setting they are in. Rapoport states that "the critical point is that the effects are social but the cues on the basis of which the social situations are judged are environmental."[56]

It was not until Buitenhof, a suburb in Delft, that all the social cues were relaxed and the 'untidy' nature was extended around and into the inner courts of the high density housing development to provide a natural play environment. An ideal study situation was created by having the landscape of two identical adjacent housing developments created with two different approaches (Figure 10). The Handellaan's landscape was developed using a conventional approach while the Hadynlaan development used untamed nature. A large park for organized games close by was important to prevent undue stress on the new landscape.

The Institute of Preventive Medicine at the University of Leiden drew a number of important conclusions in their study of the two projects based on the observation of the children. The main discovery was that at Hadynlaan children of all ages

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[55] Rapoport, *Meaning*, p 85

[56] Rapoport, *Meaning*, p. 56.

played over the entire area, whereas in the conventional landscape, play was confined to official play areas and unofficial play areas such as paved areas. These results also seem to indicate that by creating an ecotone instead of a defined edge, as in the Bijlmermeer project, the whole area became a play environment. It also more sucessfully integrated the environment of home and school into the landscape. For the children, the landscape served as part workshop for building dens or digging, recreation ground, garden, retreat and provided a challenging environment.

Two main lessons can be learned from the use of a natural play environment in this final project. First is that users, even children, are influenced by environmental cues that are communicated through association and imply an acceptable behavior. It seems possible that the same untamed free quality children liked about marginal land in studies by Moore and others can be successfully designed and integrated into a housing development without losing its appeal to children. Second, that the traditional approach to landscaping new developments should definitely be re-examined in relation to this alternative approach. There is an urgent need of usuable green space for inhabitants with young children in new housing developments. Usually park space is undertaken when building is finished. The bulldozers level the terrain and soil heaps created from building excavation, destroy the native vegetation which would grow faster since it already had a start, and then sod and sparsely plant the now homogenized landscape. In contrast, the varied topography and vegetation of Hadynlaan provided an extremely diverse play environment. On this site the ground was not levelled with bulldozers and the varied topography was actually accentuated with the excavation of hollows and the creation of mounds. The hollows provided favourite places for den building, a discovery that was also made by Moore. The mounds were used primarily for such locomotor activities such as cycling. Low-lying areas subject to flooding were retained to create small, shallow ponds of water. These different topographical features and micro ecotones gave the subsequent dense vegetation added variation.

An environment rich in choice and with free scope for children to create their own play settings needs to be built into the landscape and not removed if successful play environments are to exist. The Delft project created what Jaedicke called the 'children's woods', a small complex natural environment centrally situated within

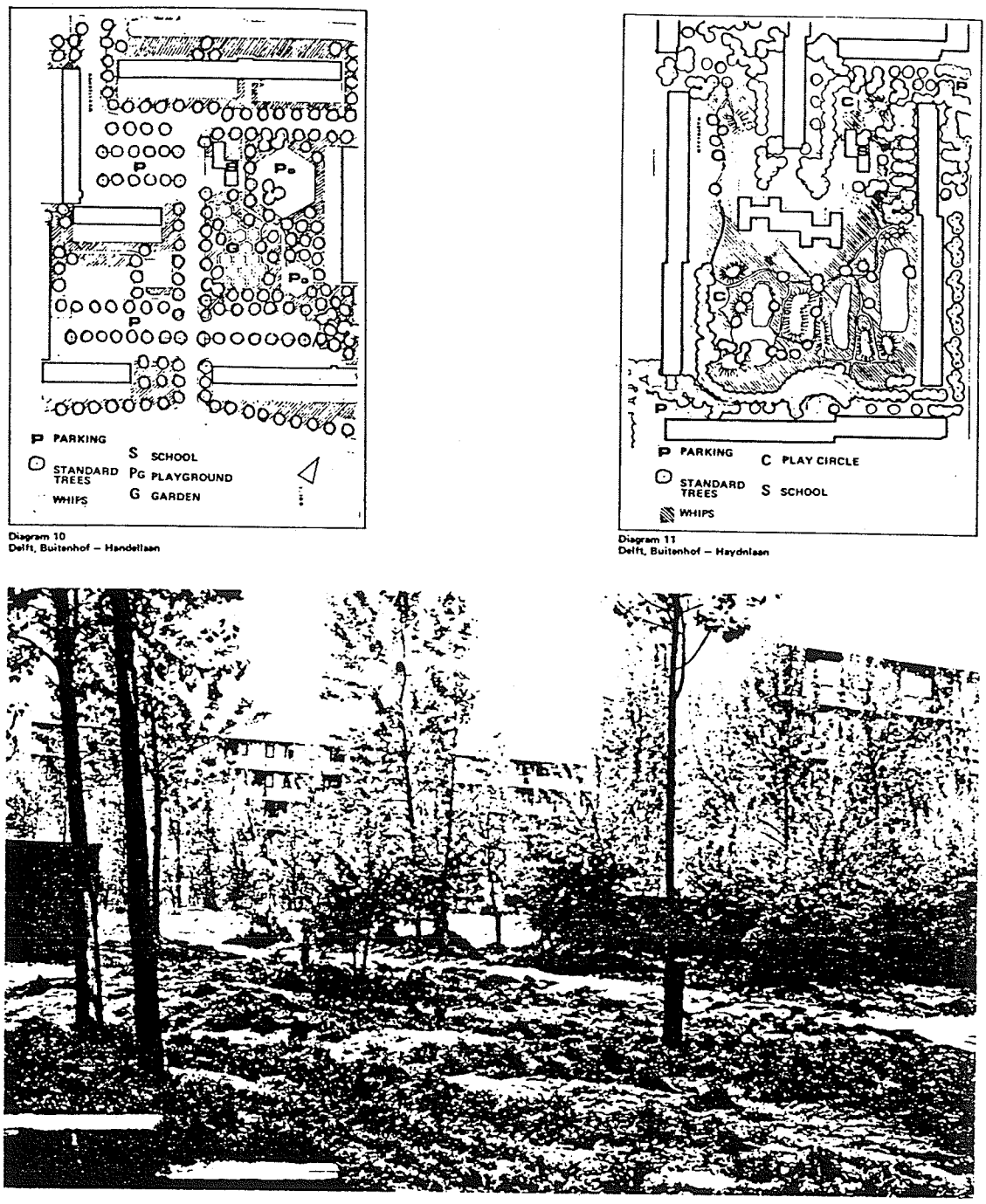

Figure 10: A plan of Handellaan on the left contrasted with a plan of Haydiaan on the right. Below is a picture of Haydniann's central courtyard (Source: (top) Allan Ruff, *Holland and the Ecological Landscape*, 1979. (bottom) Bos and Mol, "The Dutch Example: Native Planting in Holland" in *Nature in Cities* ed. Ian Laurie, 1979).

a traffic free part of a residential area.

1.4 Summary of Literature Review

Play is an important activity for a child's inner development. Since it is an intrinsically motivated experience, play can really only occur when all external demands and goals are suspended so that self-motivated activities can occur. Although play is an intrinsically motivated experience, the environment can either support or inhibit it. For activities that involve movement, dynamic, complex spaces are required to stimulate and sustain interest. For quiet activities, static, private places are desired.

Neighbourhoods, are often not developed with the environmental complexity necessary to support the various aspects of play. Instead of complexity, the result seems to be environmental simplification through the elimination of natural features and its diversity.

Children's intensive use of their immediate environment, in contrast to adult's often superficial use of it, results in very different environmental values. Children want places that challenge them, places to explore, and places they can modify and call their own. Adults, however, are primarily concerned with safety and aesthetics. Children seem to seek out areas which they feel free to use. The use of one area over another seems related to a child's sense of ownership. Real or symbolic ownership has been identified as an influential element in children's play space perference. The freedom to use a space, to claim and change it are as important to children as they are to adults. Adventure playgrounds officially provide this type of space, but without adults support they have never been widely promoted. Therefore, the disappearing, undesigned areas within neighbourhoods have provided children with a place they feel free to use. Here they find the diversity and freedom to establish a real sense of possession, and can 'find' or 'create' their own play setting. The design problem really becomes a matter of how do we design 'frameworks' for play environments?

In all the 'frameworks' examined, environmental diversity and complexity seem to be the two essential ingredients. Vegetation diversity, from smooth to rough, topographical variation, and water were the essential elements used to develop rich play environments. Spatial diversity was important, particularly the inclusion of

intimate, enclosed spaces for children to use. The degree of edge definition of a woodland was discovered to be an important environmental cue for either supporting or inhibiting children's use of the entire area. The gradation found in a natural edge ecotone did not inhibit children's use of the entire area, but also provided a rich play environment, which is consequentially also desired by wildlife. Diverse vegetation and ecotones also benefit the children by providing habitats for small scale wildlife, which is an important play and learning resource for children. Water, which need only be available on a small scale, was a sought resource by children especially if it contained tadpoles or frogs.

The emphasis on a natural play environment should not be interpreted as a replacement for playgrounds, but should stress the fact that play is more than physical exercise. For children, traditional playgrounds are significant because they provide identifiable places for them. These places, however, should be located within or have easy access to a rich environment so that the numerous aspects of play can be met.

CHAPTER TWO

The Intent of the Study

Chapter two will outline the general issues developed from the literature discussed in the previous chapter. This chapter will also outline the study's objectives which will attempt to confirm and further examine supportive characteristics of play environments mentioned in the illustrated examples of the previous chapter.

2.1 General Issues

With regard to residential planning and design, there are basically two factors which determine whether or not a child can find suitable places to play close to the home—spatial accessibility and the types of physical landscapes available.[1] Accessibility, in this study, will focus primarily upon the type of residential environment (housing layout and landscape design). Most suburban housing schemes are attractive to parents and enable children to have a relatively large range primarily because they are perceived to be safe by adults. Limited traffic, low density housing, good visual access, and the socio-economically homogeneous quality of the residents all help alleviate parent's fears.[2] Accessiblity, therefore, is generally not a problem in suburban areas, although, access to a diverse landscape can be.

Landscapes that children value most are often ones that have been forgotten by planners, designers and other adults. This is because they contain qualities that are missing in most suburban neighbourhoods—diversity, manipulability, and a sense of possession. Doug Leeies[3] found that the lack of diverse experiences in the local environment is a major negative factor influencing a child's development. He found that the existing outdoor play facilities (fixed structures) presented no challenge

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[1] Roger Hart, "Wildlands for Children: Consideration of the Value of Natural Environments in Landscape Planning," in "Urban Wildlands" ed. Roger Hart, *Childhood City Quarterly*, 9 (Summer, 1982) p. 1–28

[2] Ibid, p.4

[3] Doug Leeies, "The Child's Landscape in a Canadian Suburban Environment," Practicum, University of Manitoba, 1981

to the study group. Their time was spent not in parks, but in streets, backlanes, on riverbanks, and in woodlots. Without the riverbank area, the potential for manipulation of the children's environment was minimal. As many studies have discovered, children place greater value on places they find and create for themselves than on places provided for them. Playgrounds are fine as meeting places and for some gross motor activities but they do not provide the supportive environment necessary for the other aspects of child development previously discussed in Chapter One. The elements of water, dirt, trees, bushes, tall grass, variable topography, wildlife, 'loose parts' or 'found' objects are particularly valued in untamed areas. Ironically, these same qualities are systematically removed from most suburban areas. Suburban children in particular seem "deprived not only of the holistic view of life/work/community, but are also shielded from both true nature and the guts of the city."[4]

Children are frequently socially alienated because their play and learning opportunities are often separated from the daily life of the community. As Colin Ward states, "the failure of an urban environment can be measured in direct proportion to the number of playgrounds."[5] He questions the segregation of children by laying out play areas instead of taking the more holistic approach of considering all of the immediate surroundings as potential play environments. Children use the total landscape accessible to them and so it is necessary to consider their needs in the design of the entire landscape of residential areas. To do this, however, a much finer level of complexity needs to be incorporated.

More suburbia seems inevitable, but the setting need not be so sterile for children. The next step in the Canadian design of play environments should be to examine examples both here and in other countries to determine how to incorporate the ideals of the adventure playground into the total environment of the housing development. A less expensive and maybe better alternative to adventure playgrounds is to leave 'wildlands' as commonland which would not become overly planned or manicured, and therefore enable children to make them into their own play settings. The potential of the 'urban wild', as another dimension of the ex-

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[4] Clare Cooper, "Remembrance of Landscape Past," *Landscape*, **22** (1978)

[5] Colin Ward, *The Child in the City*, London: The Architectural Press Ltd., 1978

isting fabric of recreation and learning through play, is yet to be realized and fully developed. Although 'urban wilds' are appreciated by decision makers in some European cities, in Canada we appear to place little value on natural areas as play environments. The benefits of experimental play and discovery are generally recognized and many now believe that young people's development potential can be severely limited by inadequate play experiences. The concept of the 'urban wild' is one dimension of a general concern for the creation of stimulating and diversified environments.

2.2 Study's Objective

This study is meant to be an extension of two Winnipeg studies[6] which investigated children's play needs, desires and how well the neighbourhood landscape meets those requirements. The intent of this study is to investigate the social and psychological importance of different types of open spaces for children's play (grades 4 and 5). To better understand the different uses, and attitudes toward a traditional and a more alternative form of open space, two similar yet contrasting suburban neighbourhoods were investigated to identify important environmental and perceptual characteristics and to determine their supportive or inhibiting effects on play. They differ in the two basic design factors mentioned earlier — spatial accessibility and the types of physical landscape available. Comparisons will be made where possible.

In dealing with the question of children's use of these neighbourhood green spaces, several specific questions will be addressed:

- How and by what means is play supported in these residential environments?
- How does the physical and perceptual relationship between the green space and the housing layout support or inhibit play for school age children?
- What environmental characteristics contribute to a supportive play environment close to home based on children's opportunities for social interaction, exploration, environmental interest, privacy and symbolic ownership?

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[6] Leeies, 1981; Charles Thomsen, Alexandra Borowiecka, *Winter and Play: Design guidelines for winter play environments on the Canadian Prairie,* Ottawa: Canadian Mortgage and Housing Corporation, 1980

- Does the 'urban wild' provide opportunities for play not found in more traditional 'open space' and vice-versa?
- How can we design a supportive environment for children's play as part of the overall design for the neighbourhood green space by concentrating mainly on the physical and perceptual qualities of landscape elements or what Rapoport refers to as the 'semifixed' elements.

CHAPTER THREE

The Study

In this chapter, the method of accomplishing the study's objectives is discussed in detail. The reasoning behind site and study selection, the environmental and perceptual focus of the variables, the methodology are outlined. In addition, this section gives specific information about the study sites.

3.1 Selection of Study Sites

Two residential neighbourhoods in the city of Winnipeg were selected because of their similarities and differences (Fig. 9). Both housing developments are mature suburban areas, with a similar housing type, density, and proximity of schools and play grounds.

Both housing layouts are arranged in bays. The difference is that Norwood West is based on the Radburn Plan with car access entirely by backlanes and only pedestrian access to the house front. Crescent Park, on the other hand, has car access almost entirely via a front street with only one instance of a backlane.

Both residential areas have locally available areas of green space at the community and residential level. A difference between the sites is the relationship of the open space to the residential area. In the Norwood development (aerial photo), the majority of the open space is a linear strip encompassing one side of the development adjacent to the river. Small strips of open space, flanked on each side by house fronts, interconnect the school ground with the riverfront. Fort Garry East development (aerial photo), lacks this structured interconnection; the open space being more or less the leftover land behind the houses. People have made their own paths to connect the space with the surrounding development.

The major difference between the two neighbourhoods is the vegetation structure in the open spaces (Fig. 10). Norwood Flats consists of large open areas of mowed grass with specimen trees and shrubs. Fort Garry East has a very different vegetation structure with open spaces carved into dense bush consisting of tree, shrub, and herbacious layers.

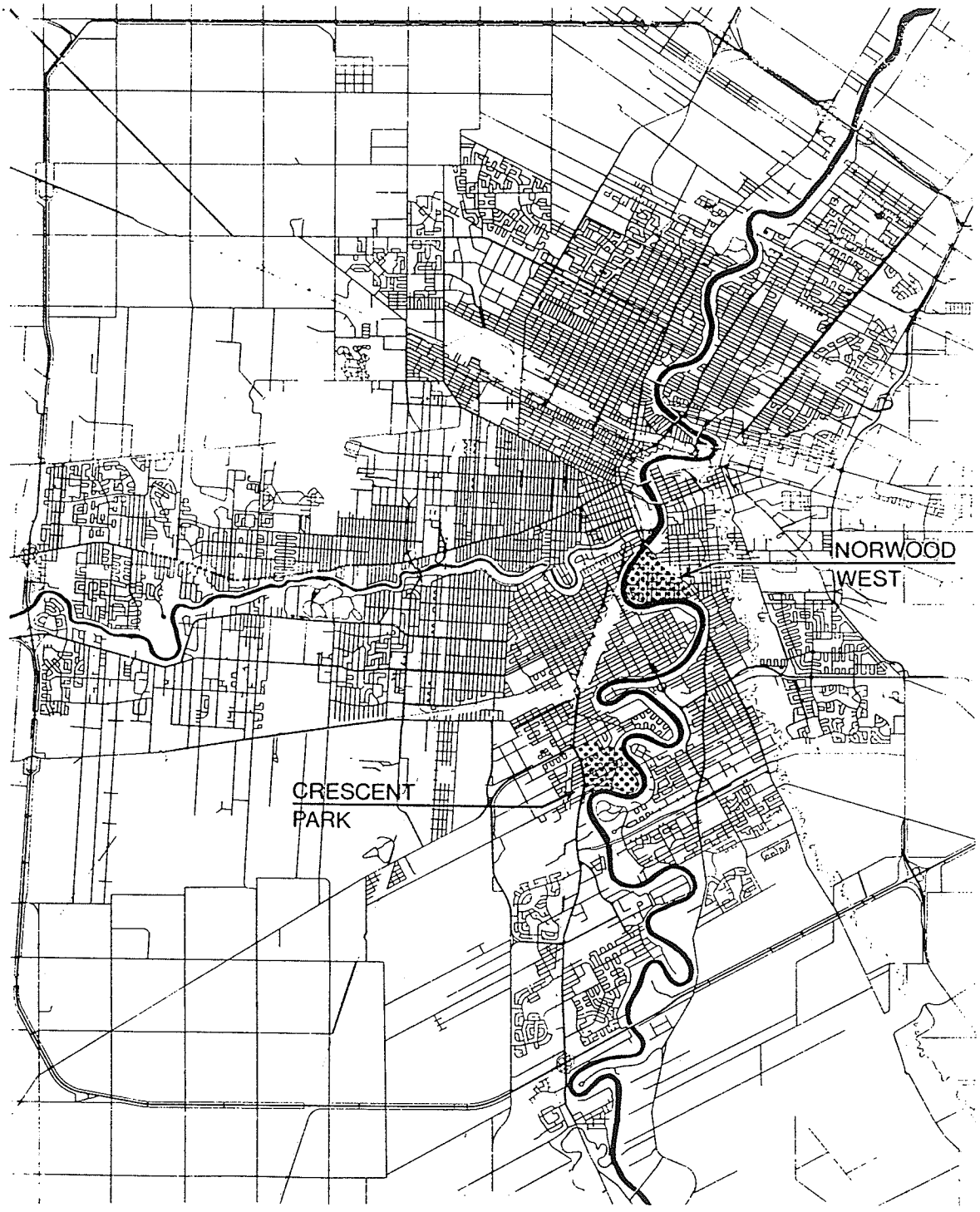

Figure 11: This map of the City of Winnipeg shows the locations of the two residential neighbourhoods investigated in this study.

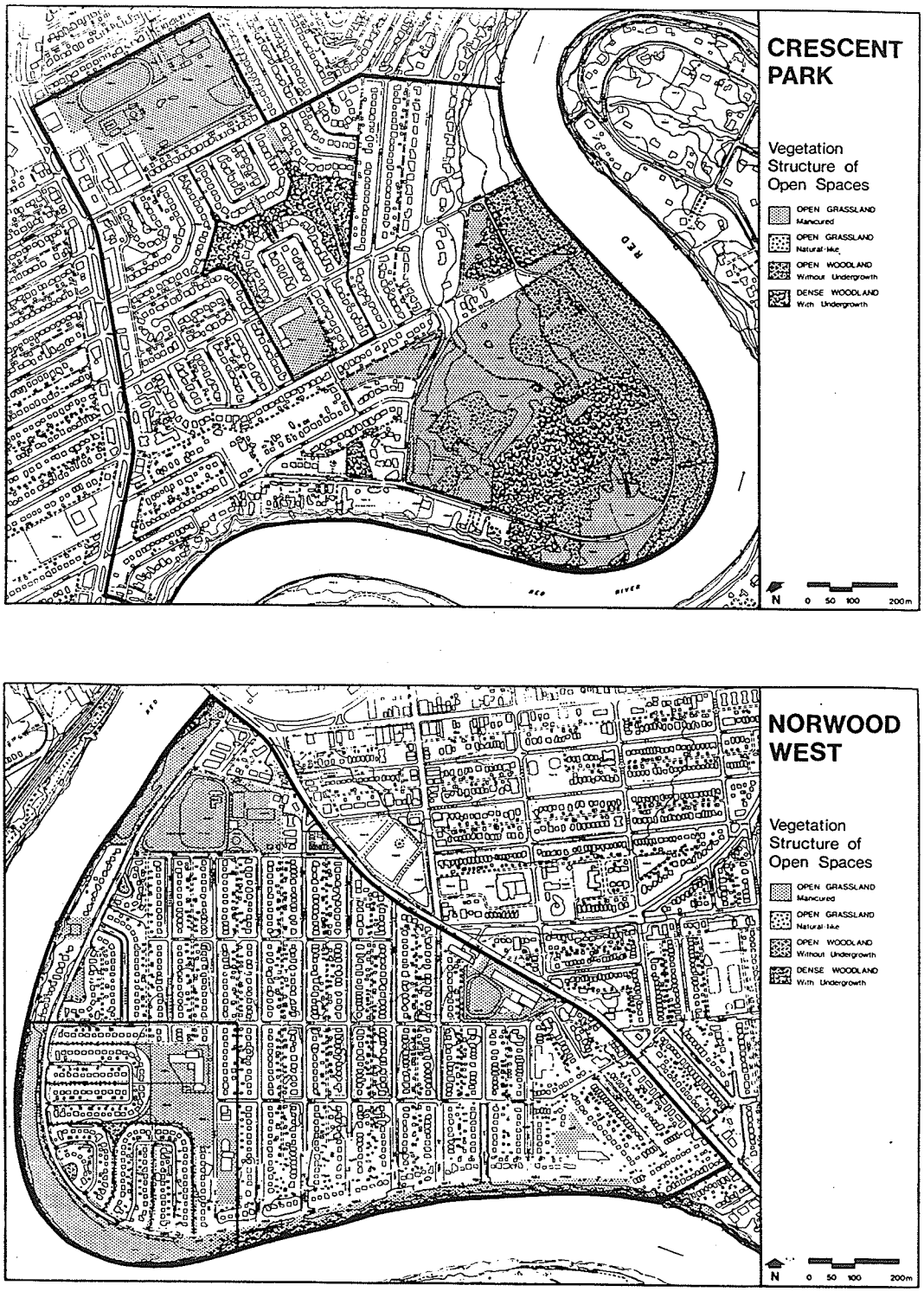

Figure 12: Maps showing the vegetation structure of the open spaces in Norwood West and Crescent Park.

The two sites, therefore, provide an opportunity for a comparitive investigation of the supportive or inhibiting nature of each housing layout with regards to children's play, the relationship of green space to housing, and the two different vegetation structures.

3.2 Selection of Study Groups

Children in grades four and five (approximately nine to eleven years old) are of particular interest because they are old enough to decide where they want to spend their time outdoors, and are generally given some freedom to explore. It is assumed they are still young enough to be staying for the majority of their time within the neighbourhood. This age group also represents the "apex" of childhood's intense relationship with the physical world "when children have the greatest chance to strike out, alone or with peers, to explore an ever-expanding repertoire of reachable places, in search of new experiences and adventures."[1] After this period interest is focused away from the environment and more towards social matters and recreational acquisitions.[2]

The local schools adjacent to the study sites were used to make contact with children in this age group. The study was discussed with the principals and permission was granted for the study to proceed if the parents gave their written consent. Letters (see Appendix A) explaining the study and requesting parents cooperation were sent home using the children as the messengers. Only children given permission to participate in the study, and who also lived within the predetermined neighbourhood boundary were interviewed.

3.3 Variables

It is culture that primarily structures behavior with its unwritten rules for appropriate behavior and acceptable settings for such activities. Cultural knowledge helps explain the use or nonuse of urban spaces. Physical environments support or inhibit behavior, but they do not determine it. As Rapoport states, "the relation of people and environments is the result of complex interactions among cultural,

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[1] Moore, *Childhood Domain*, p. 11

[2] Payne, p. 397

environmental, and perceptual variables."[3] Within a particular cultural context, certain physical and perceptual characteristics are needed to provide the environmental qualities perceived as desireable by children for play.

This study investigates the relationship between children's play and the environmental characteristics which support children's sense of territorial domain, privacy, and interest. The variable 'play' is defined as being the activity of testing, exploring, and interacting with other people. The variable 'environmental characteristics' is defined as the shape, size, perceptual quality and spatial definition of identified play spaces. The variable 'territorial domain' is defined not as true ownership, but as having a personal attachment or feeling you have the right to adjust the environment to your own needs. Closely related to territorality is the variable 'privacy.' This is defined as the control of unwanted interaction providing freedom of action and the potential to resist the control of others. The amount of visual separateness or perceived distance from other people necessary for children to achieve a sense of privacy is of particular interest. The variable 'interest' is defined as environmental complexity, or diversity of elements or experiences, and their ability to hold a child's attention.

3.4 Methods

3.4.1. Behavioral Observation

Observation provides a method for assessing children's needs and the play environment by analysizing the existing situation. Observation mapping was used to record the various kinds of activities, the gender and the approximate age of the people doing these activities, and the actual setting in which they occur. By looking at who does what with whom and in what relationship to the physical setting, the types of environments children use for particular play activities can be better understood. By generating composite maps from the observational information, areas of intense use can also be identified.

3.4.2. Structured Interviews

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[3] Amos Rapoport, "Pedestrian Street Use: Culture and Perception," in *Public Streets for Public Use*, ed. Anne Vernez Moudon, (New York: Van Nostrand Reinhold Comp., 1987) p. 81

The structured interviews were conducted in a spare classroom at Crane School in Crescent Park, and in a spare office at Nordale School in Norwood West. At the start of the personal interviews the children were reassured that there were no right or wrong answers, but that the researcher was interested in learning from them. They were asked if they would mind the conversation being tape recorded and no one objected. Notes were taken down during the interview. The method combined a focused interview with the recording of place information on an aerial photograph of the neighbourhood, and a more detailed aerial photograph of the study sites, so that more specific information could be obtained. The identified areas were further explored through focused questions in an attempt to discover the particular characteristics of the areas, what attracts the children to these areas, their feelings about them, the relationship of play in these areas to other people, and why they consider certain places their domain. The structured interview was comprised of both closed and open-ended questions (see Appendix A).

3.5 Study Sites

3.5.1. Crescent Park: Land Use

The boundaries of Crescent Park are Dowker Ave. on the north, the Red River on the east and south, and Pembina Hwy. on the west (Figure 13). Crescent Park was primarily developed (81 percent) in the period between 1946 and 1960. The majority (86.8 percent) of the housing is single family detached. A large portion of the land use is open space, making up 41% (148.8 acres) of the total neighbourhood (362.9 acres). Open spaces include formal/informal parks, community facilities, golf courses and schools. Crescent Park and the golf course make up most of the green space. Low density housing only occupies 51% of the total area (Figure 14).

3.5.2. Crescent Park: Population Characteristics

The population of Crescent Park has been declining for the past fifteen years. Most of this loss is in the fourteen and under age group. Crescent Park is characteristic of an area predominately comprised of mature families. It contains fewer children and more people over forty-five than the city average. Almost 50 percent have been living in their homes for more than ten years, and the local school's and enrolment in the local school has been declining. the neighbourhood.

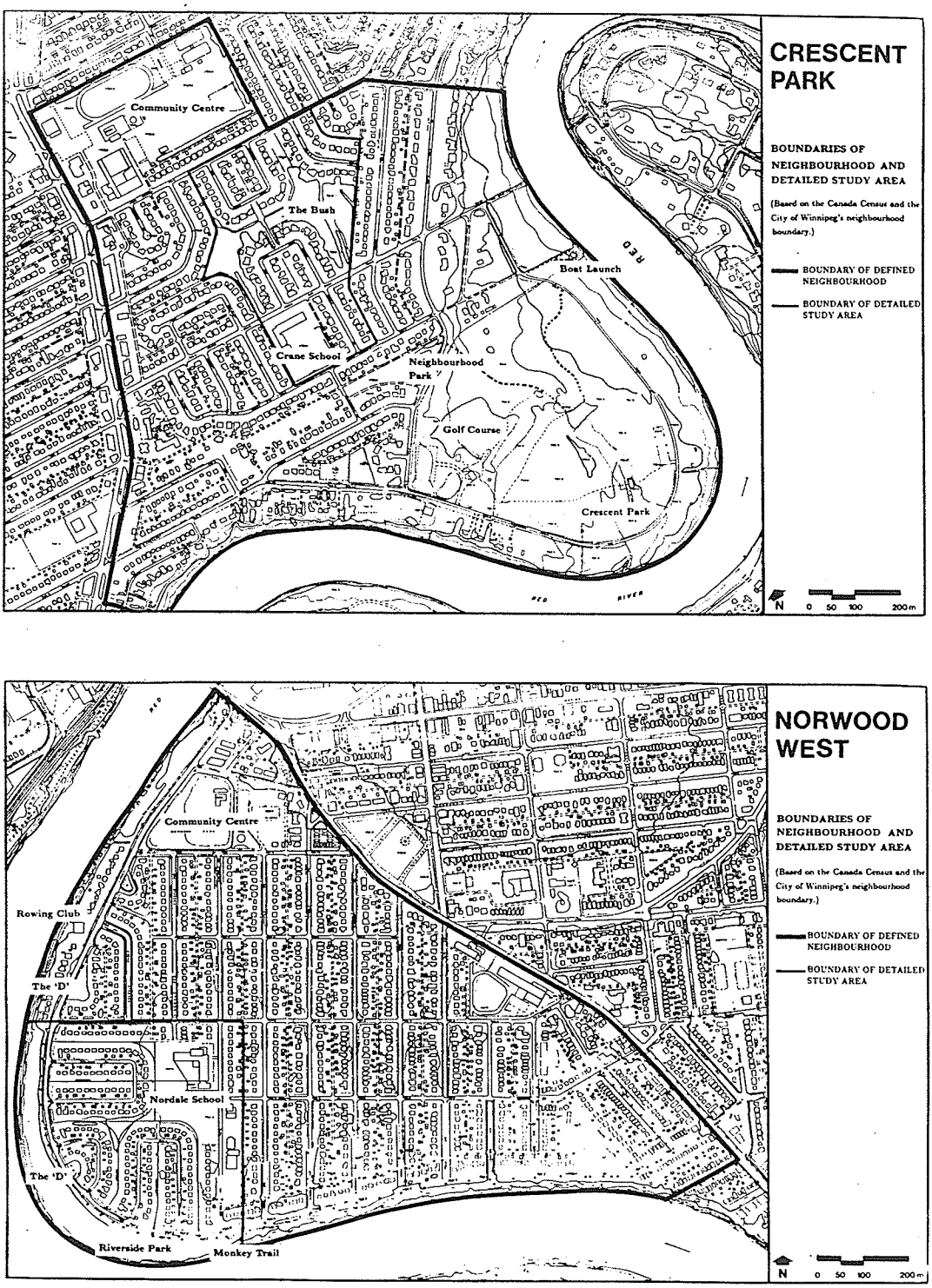


Figure 13: Maps showing the boundaries of neighbourhood and detailed study area. Major places of interest are also identified.

Figure 14: Aerial photograph of the neighbourhood of Norwood West.

Figure 15: Aerial photogragh of the detailed study area in Norwood West.

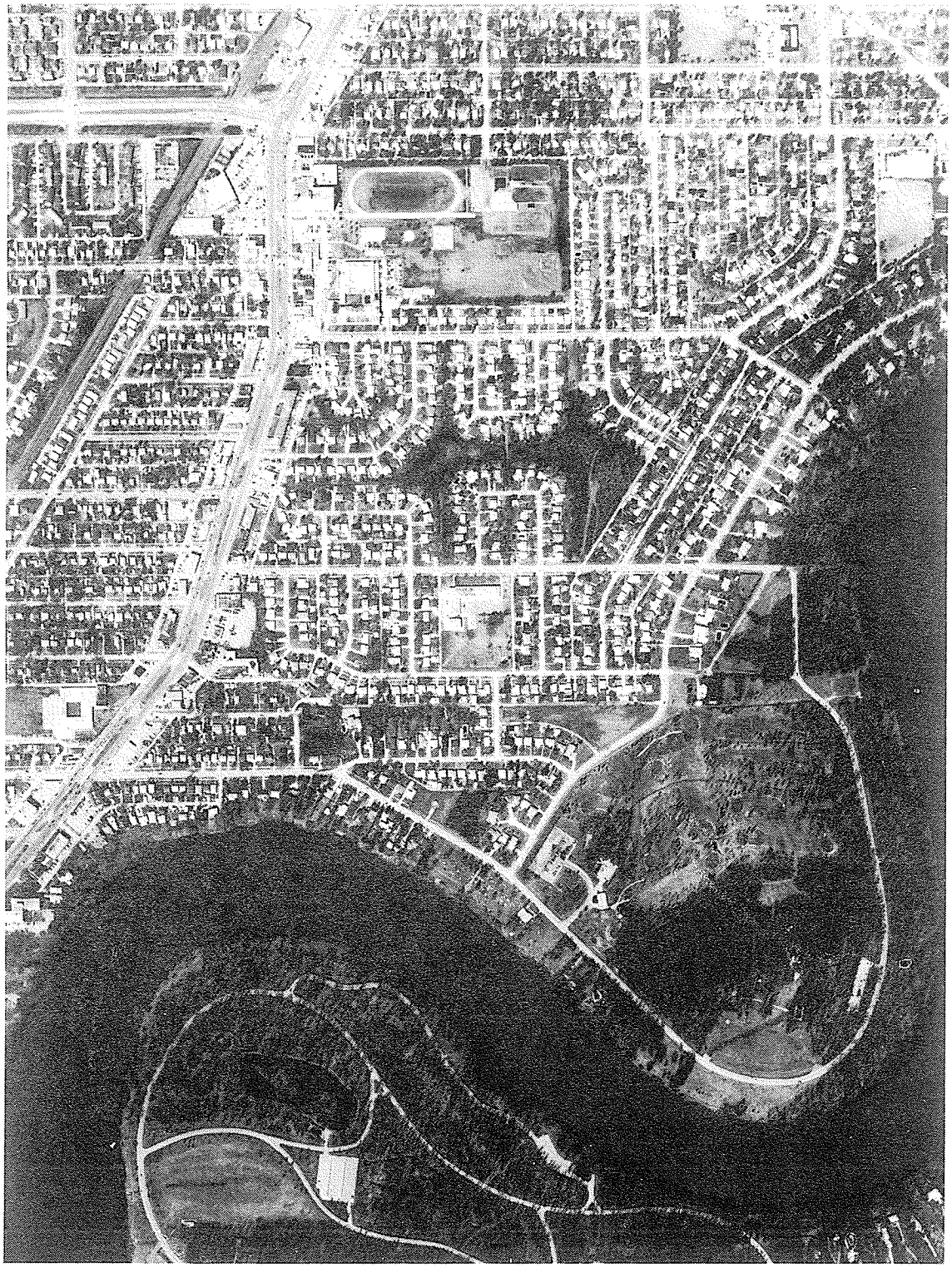


Figure 16: Aerial photograph of the neighbourhood of Crescent Park.

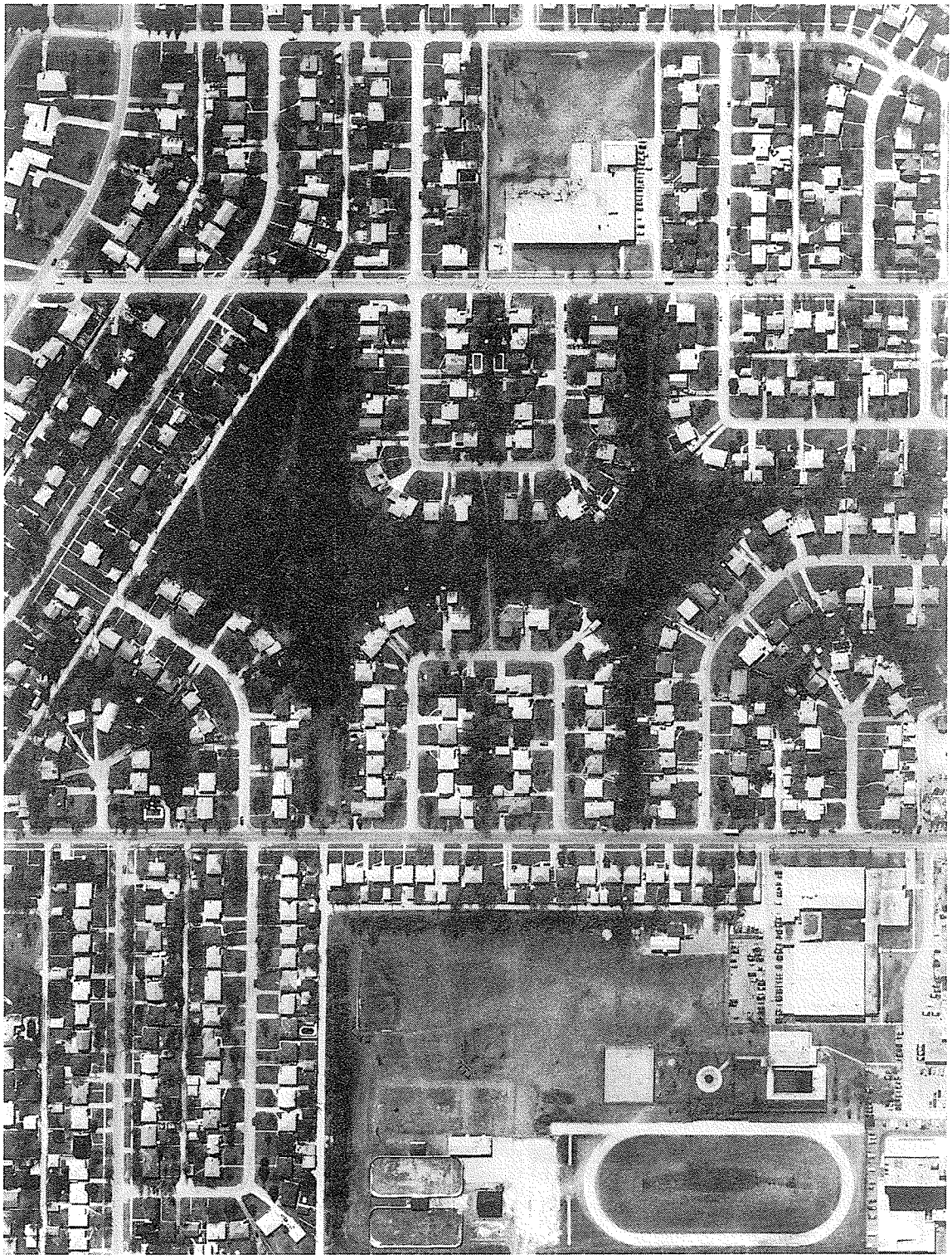
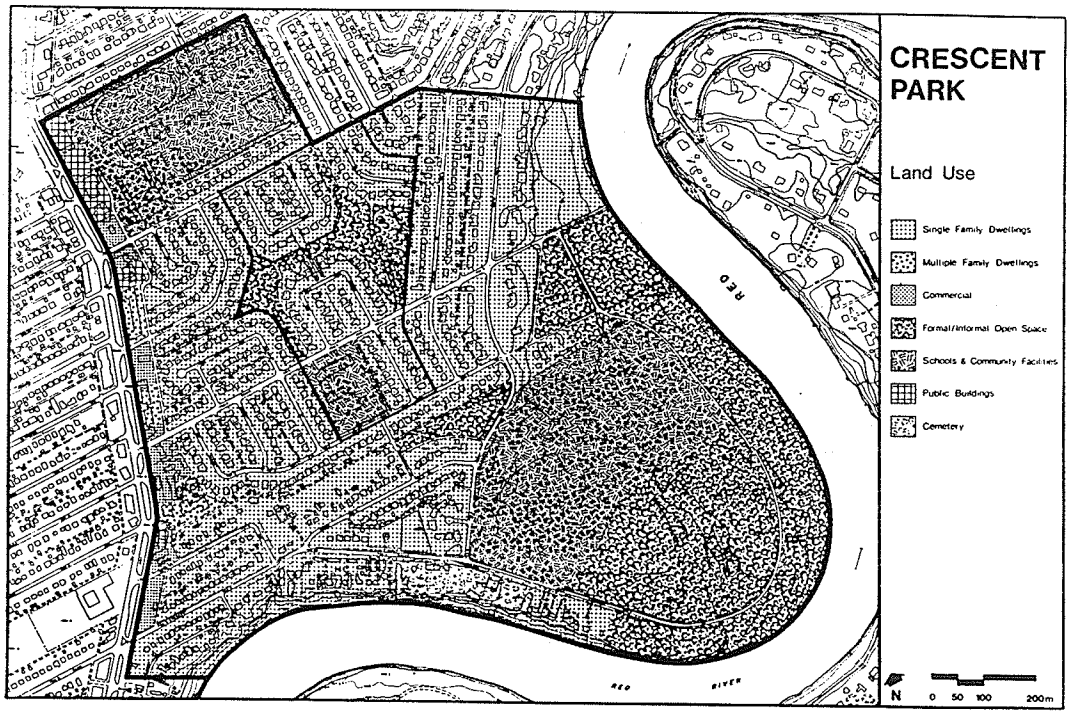


Figure 17: Aerial photograph of the detailed study area in Crescent Park.



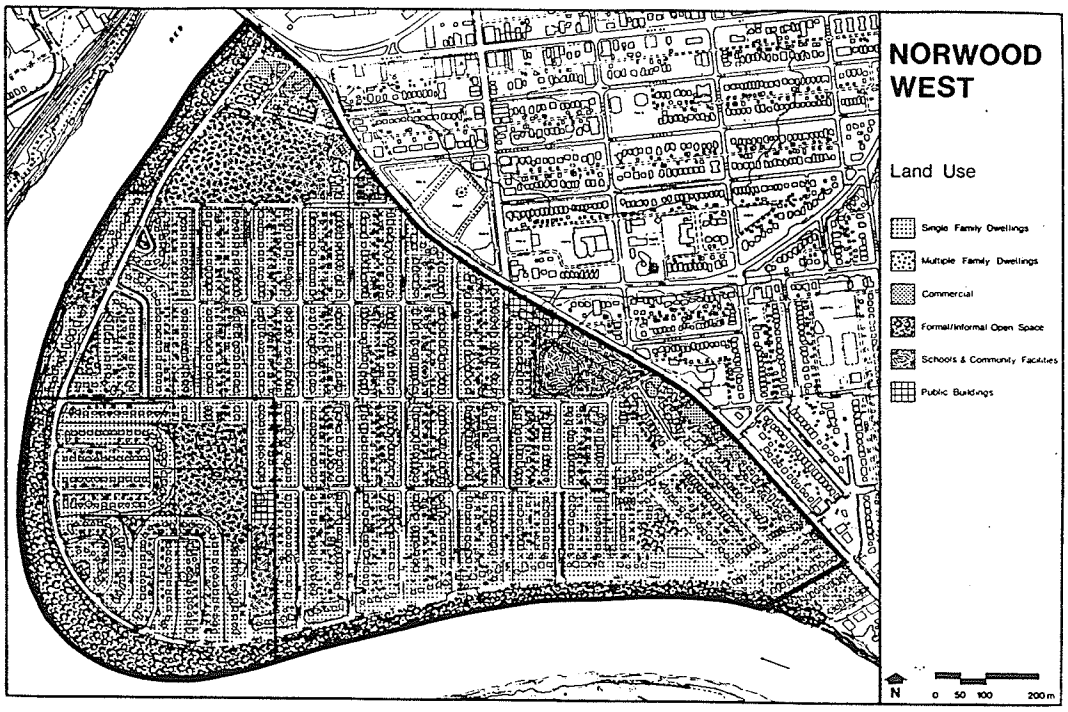


Figure 18: Maps showing the land use patterns in Norwood West and Crescent Park.

3.5.3. Norwood West: Land Use

The boundaries of Norwood West are the Red River on the south and west, and St. Mary's Road on the north and east (Figure 13). Norwood West was developed gradually from about 1900 to 1950 with over a third of the development occurring in the period 1946 to 1950. The majority (75.1 percent) of the housing is single family detached. The St. Mary's Road frontage is primarly a mixture of commerical, multiple family and educational and public buildings. The majority of the land use is low density housing occupying 74.1% of the total 323.68 acres. Open space, which includes formal/informal parks, community facilities and schools makes up 21.7% or 65 acres of the total neighbourhood area (Figure 18). Therefore, 20 percent or 65 acres of the total 323.68 acres is A significant portion of the park and recreation area is a passive linear riverbank park. At the north end there is the Norwood Community Club which contains a wading and swimming pool, and offers a full range of indoor and outdoor activities. The school playground also has some equipment.

3.5.4. Norwood West: Population Characteristics

Population Characteristics : Norwood West is also a predominately mature family neighbourhood like Crescent Park, but is a slightly older age group. The characteristics describe in relation to Crescent Park, therefore, also apply to Norwood West.

3.6 Study Groups

3.6.1. Crescent Park

Out of the total of 22 permission forms sent home with children in grades four and five, there were 12, or 54 percent, returned. Only 10 of the 12 could be interviewed for this study. The study group, therefore, was comprised of 60 percent females and 40 percent males with an age distribution of 37.5 percent nine year olds, 25 percent ten year olds and 37.5 percent eleven year olds (Figure 13).

3.6.2. Norwood West

Out of the total of 38 permission forms sent home with children in grades four and five, there were 13, or 34 percent, returned. Only 8 of the 13 could be interviewed for this study. The study group, therefore, was comprised of 50 percent

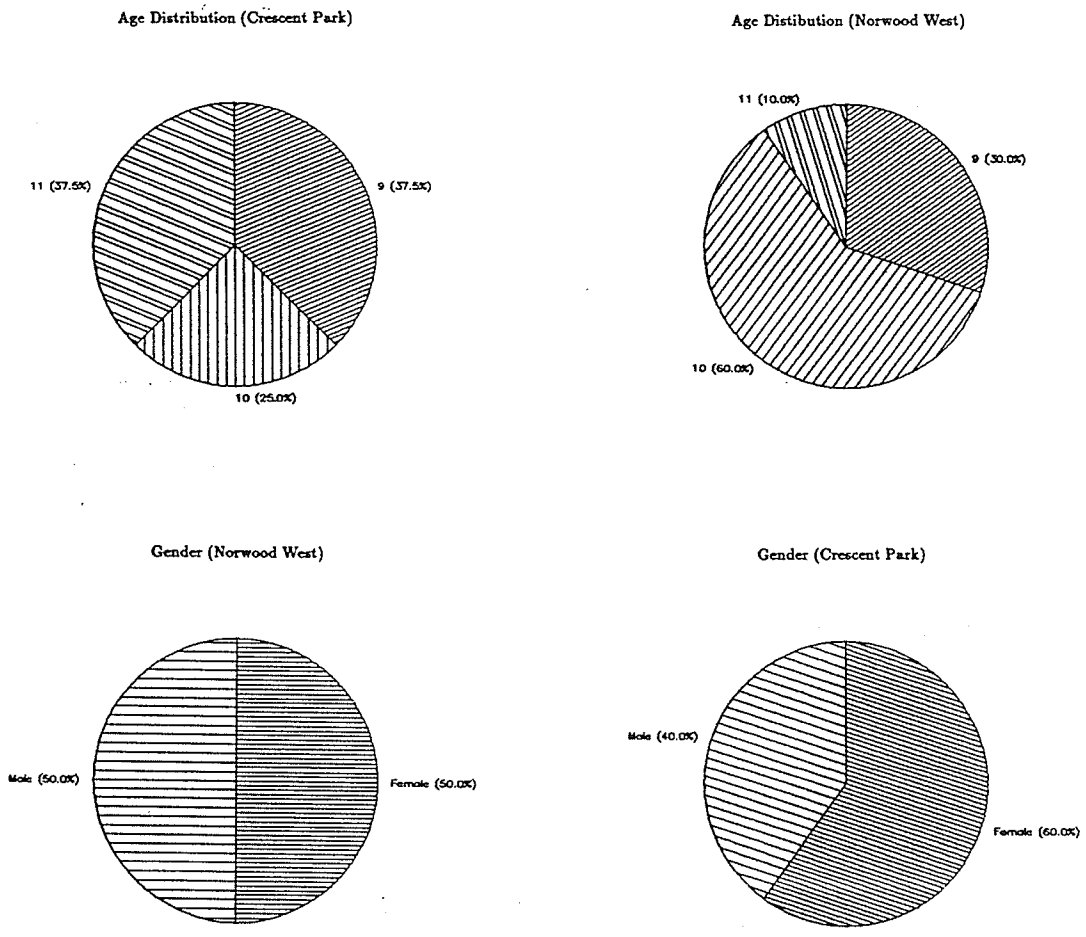


Figure 19: Graphs showing the gender and age distribution within the two study groups.

females and 50 percent males with an age distribution of 30 percent nine year old, 60 percent ten years old, and 10 percent eleven years old (Figure 13).

3.7 Limitations of the Study

3.7.1. Study Group

Because the study focused on a particular age group in study areas which had a high proportion of mature families, and because of the relatively poor return of the permission forms, the study group was very small in size.

3.7.2. Methods

Only two methods were used to obtain information—observation and structured interviews using aerial photographs. The more methods used in conjunction with each other clarifies and extends the researcher's understanding. For example, the structured interview relies upon the child's verbal facility and communication skill's to clearly convey his/her answers or ideas for the open-ended questions. Drawings would have provided another means of trying to obtain similar information. Moore[4] noted in his study that drawings contained a larger variety and greater number of elements, and provided more substantial insights into the physical attributes of place than did the interviews. The interviews were essential, however, for investigating the 'hidden dimensions' of places. Moore also found that the field trips conducted by the children were an essential means of understanding the environmental details identified in children's drawings of their favourite places. In this study, the methods used did not ellicit very specific information about particular elements in the landscape but instead identified more general characteristics of play in the study areas. For more information and some suggestions on study methods see Appendix B.

3.7.3. Study Sites

The two different vegetation types and structures made it difficult to obtain comparitive site observations. Visual penetration in an area with trees and undergrowth is much more restricted than it is in large open areas of grass. For example, not until the fall when all the leaves had fallen did I discover a substantial fort in the area. How much was missed in site observations in the Crescent Park area is not known.

[4] Moore, *Childhood Domain*, p. 271

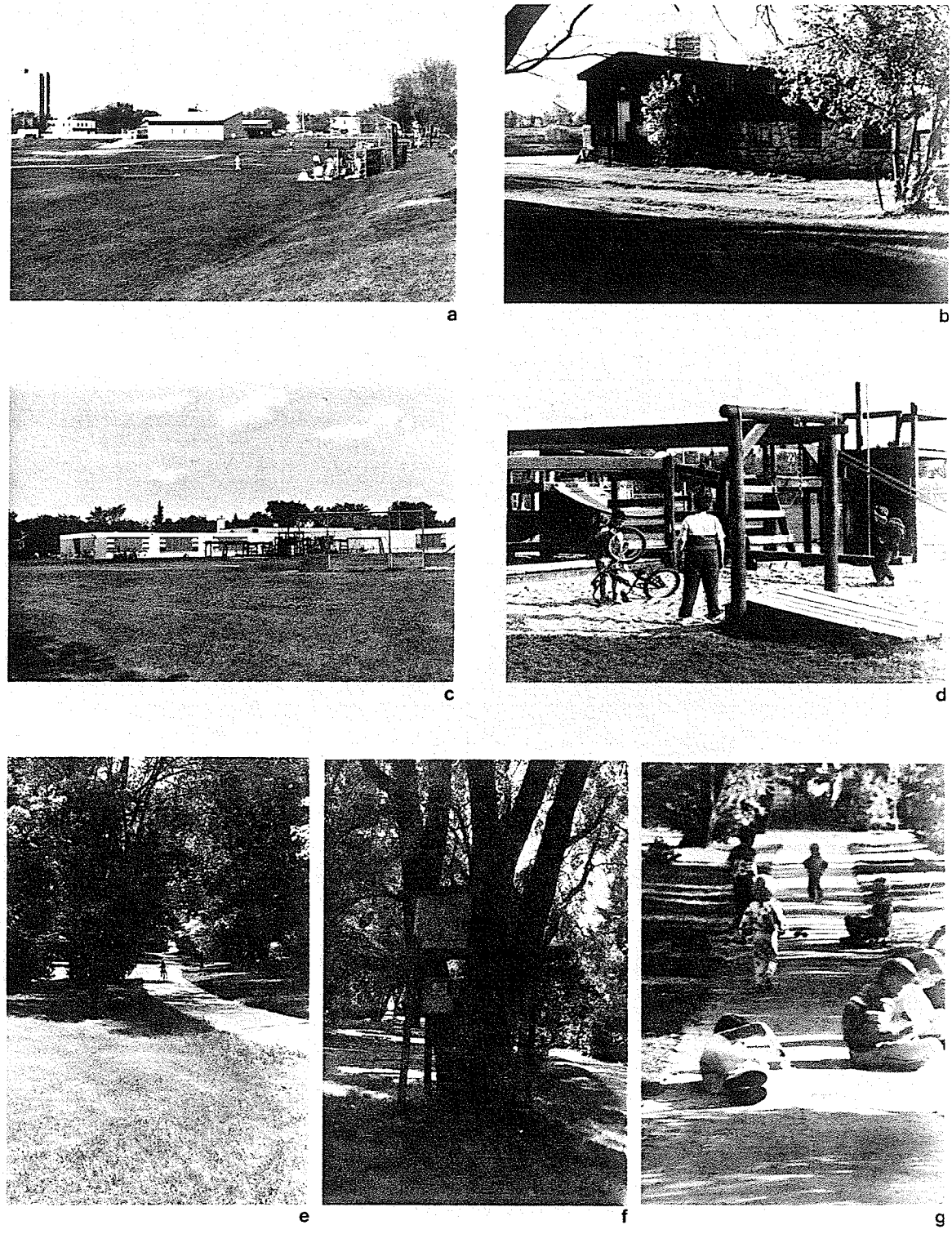


Figure 20: Pictures of open spaces in the Norwood West neighbourhood: a) Community Centre b) Rowing Club c) Nordale School d) Play Structure e), f) and g) Open space between housing fronts.

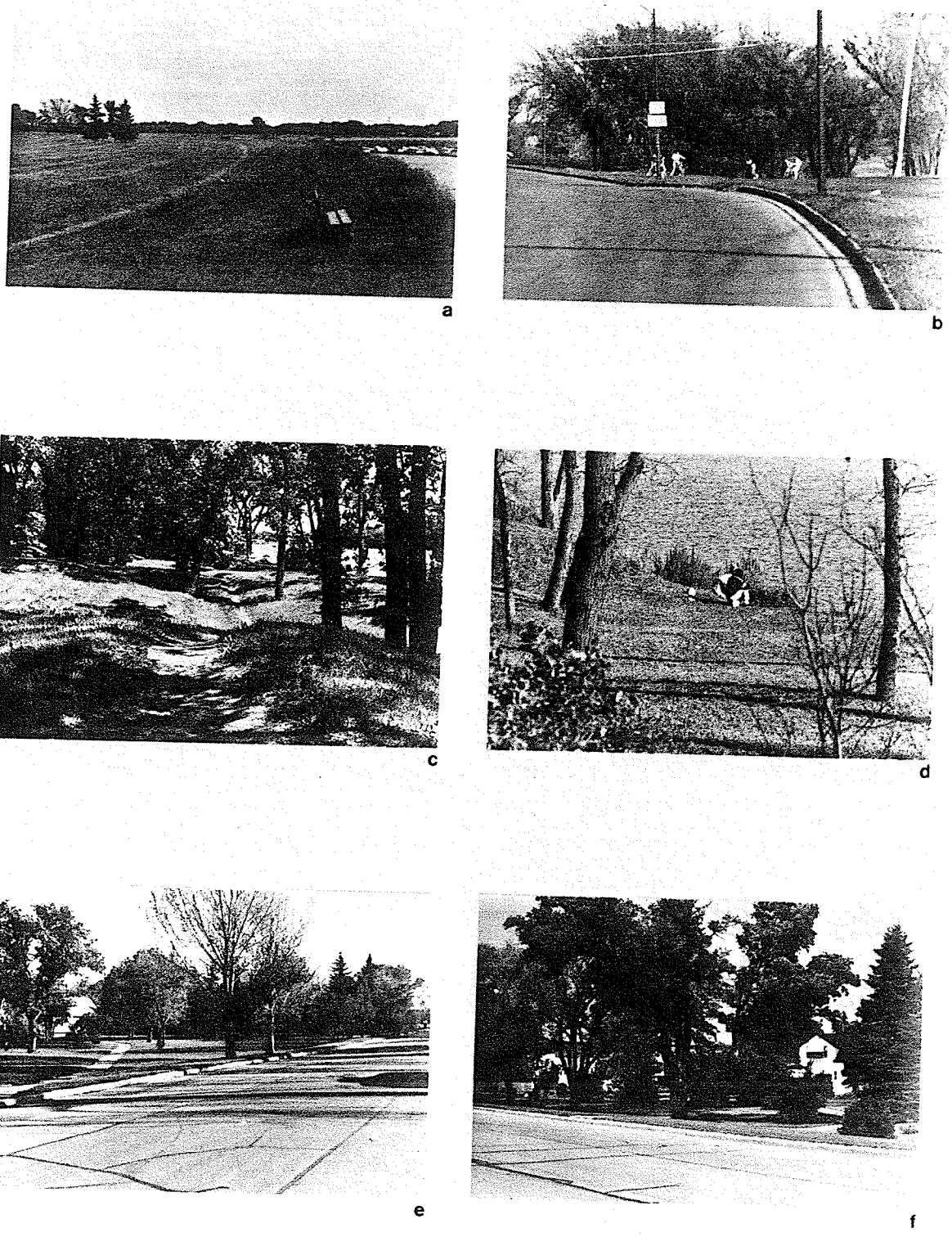


Figure 21: Pictures of open spaces in the Norwood West neighbourhood: a) The riverside park b) Start of the 'Monkey Trail' c) 'Monkey Trail' d) River's edge beside 'Monkey Trail' e) Large 'D' open space f) Small 'D' open space.

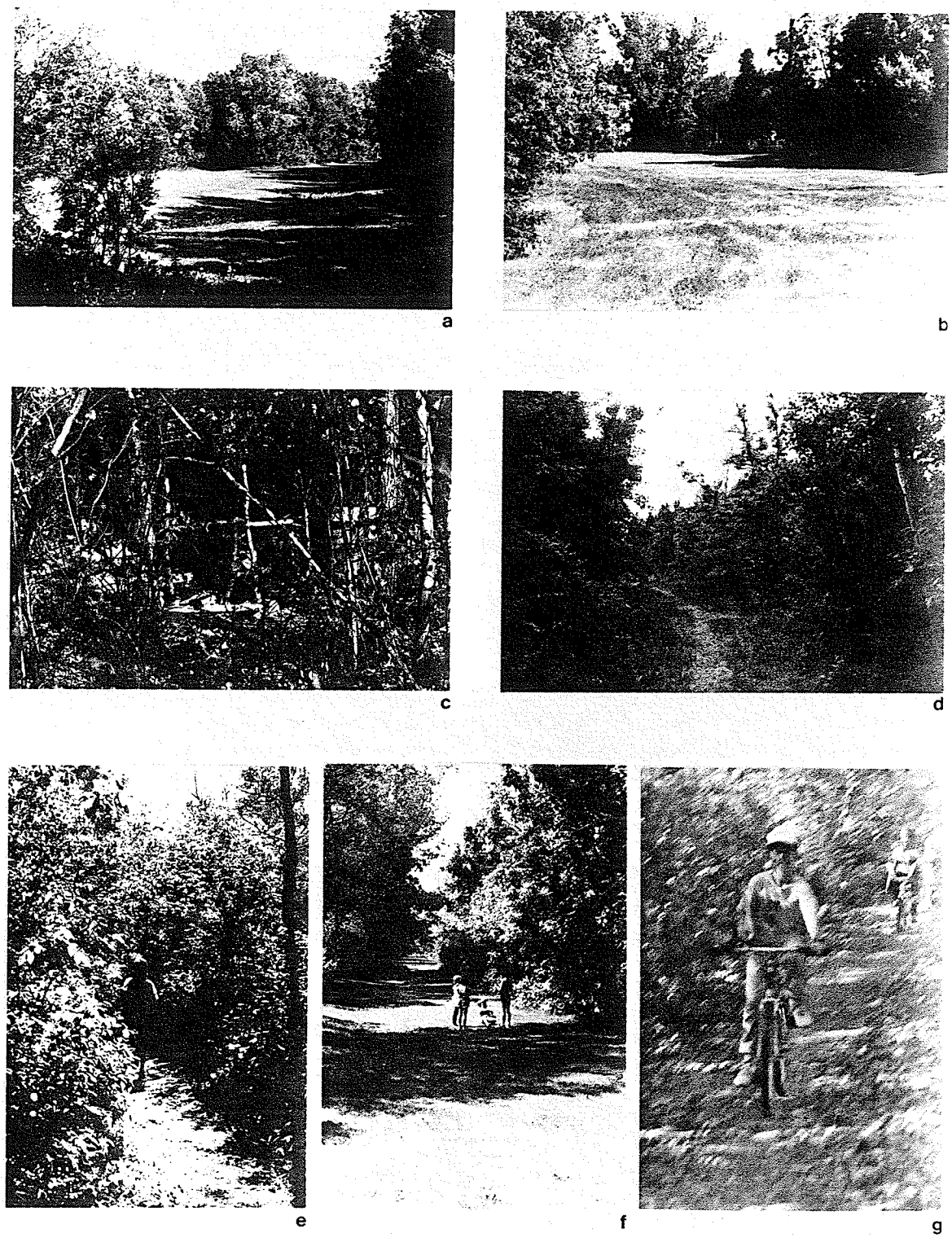


Figure 22: Pictures of open spaces in the Crescent Park neighbourhood: a) Open space in the 'Bush' b) Small open space between house backs, located between the 'Bush' and Dowker Street c) Fort in the 'Bush' d), e) Paths through the 'Bush' f) Small open space behind house backs located between the 'Bush' and Crane Street g) Path through bush.

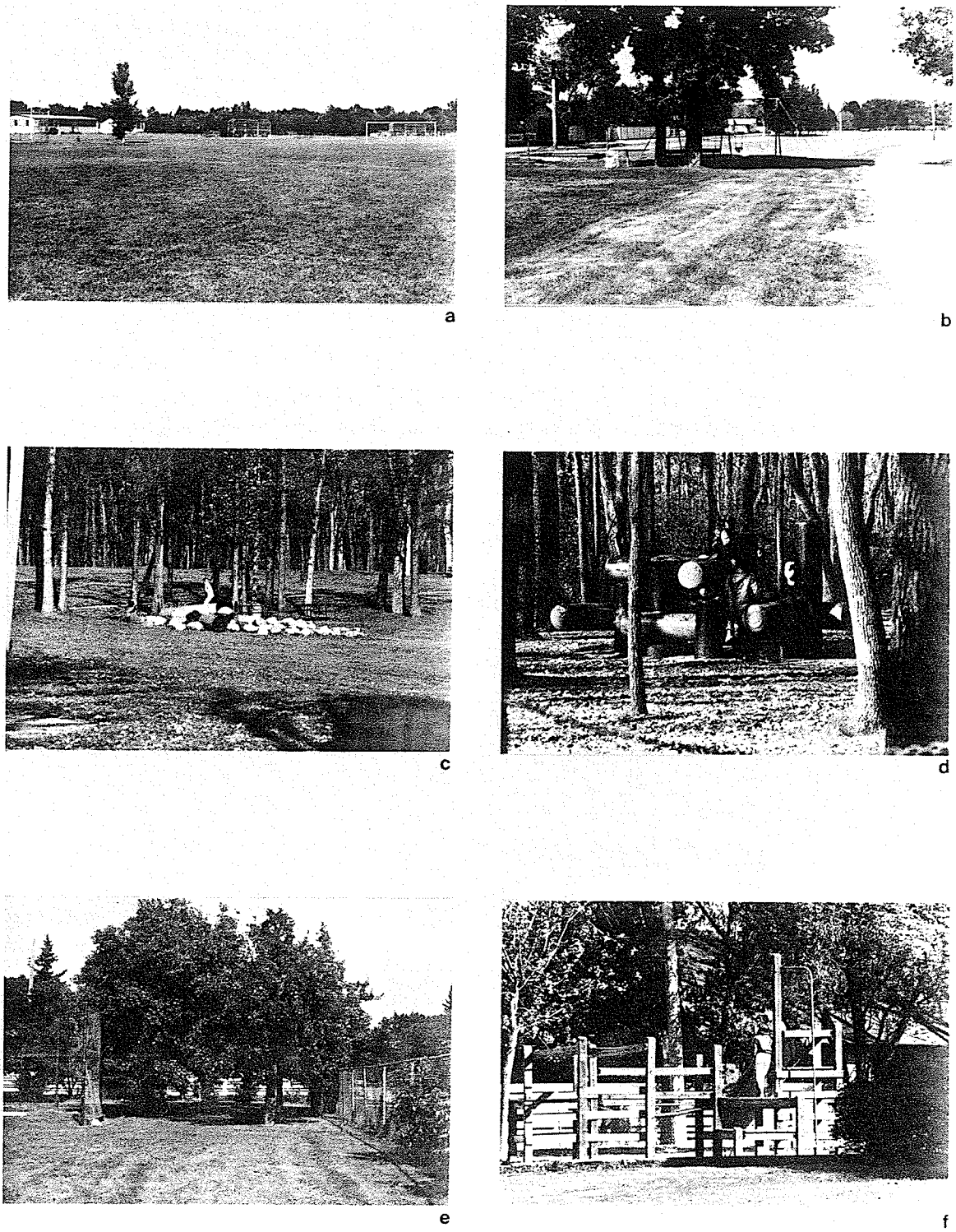


Figure 23: Pictures of open spaces in the Crescent Park neighbourhood: a) Community Centre b) Neighbourhood park c) Play feature in Crescent Park d) Play structure in Crescent Park e) Treed area in the corner of Crane School grounds f) Play structure on Crane School grounds.

CHAPTER FOUR

Findings and Discussion[1]

Chapter four examines the information found using the two methods, which were discussed in the previous chapter—structured interviews and site observations. This chapter is divided into six sections. The first two sections discuss the general use of open spaces in the neighbourhood and detailed study areas respectively. The next three sections focus on the study's particular interest in the characteristics that support the qualities of environmental and social interest, privacy, and symbolic ownership. The final section discusses the recommendations made by the children as to how their neighbourhood could be improved for their use.

4.1 General Use of Open Spaces in the Neighbourhood

Both study groups were asked how well they knew the open spaces in order to determine how familiar they were with the area to be discussed. Both study groups felt they knew the open spaces well, with only one person from the Crescent Park group answering 'not very well'. The Crescent Park group were more confident, with the majority of them answering 'very well' compared to the majority of the Norwood West group answering 'fairly well'.

To try to establish how accommodating the open spaces were for a variety of users and activities, the children were asked to identify open spaces for large (more than five people) and small (less than five people) groups. Neither study group had trouble identifying places for large groups to use in the available open space. In the Norwood West area the places mentioned were the Community Centre, the School grounds, and riverside park (see Figure 13). In the Crescent Park area, the places identified were Crescent Park, the golf course, a neighbourhood park, and the bush (see Figure 13). It is interesting to note that this group did not mention the Community Centre. This may have been an oversight or it may mean that the children in this study group spend more of their time outside around the Crescent Park area. Also of interest is the inclusion of the bush, an informal (low

[1] Results from the interviews not illustrated in this chapter can be found in Appendix C.

maintenance level) open space, in the areas identified by the Crescent Park group, whereas all of the spaces identified in Norwood West are formal (high maintenance level) or recreational park areas.

In the open spaces for large groups, the activities identified by both groups include kite flying, playing games and organized sports (Figure 24). In the Norwood West area, however, sports seem to be the dominate activity identified. If the Crescent Park group had included the Community Centre in their area this discrepency would not be so likely. Activities identified by the Crescent Park group and not by the Norwood West group were picnics and use of the play structure. As site observations show (Figure 27), these activities also occur, respectively, in the Riverside park and school grounds in the Norwood West area, but were not mentioned.

Another slight difference between the two sites in use of the open space areas is that the Norwood West group said that the areas were used by large groups more than they were by small groups. The Crescent Park group, however, responded that the open spaces were used almost equally by both large and small groups. This difference between the sites (Figure 25) could be related to the activities identified. In the Norwood West area, the study group identified sports as the major activity, whereas in the Crescent Park area, sports were not as important.

Another approach was taken to try to better understand the use of there open spaces. This time, particular types of open space were identified by me, and the children were asked to say how much they used these areas. Initially, they were asked to assess the level of use of large open areas of grass. According to the study groups this was much greater in the Norwood West area (Figure 26a). This is probably just a matter of avalilablity and accessiblity. The majority of the open space in Norwood West are open grassland whereas it is not the predominate vegetation structure in the Crescent Park area (Figure 12). The use of streets and backlanes were also reported as higher in the Norwood West area (Figure 26b). It is interesting to recall the similarities and differences in the two street layouts. Both areas have little traffic since the streets are laid out in bays. The difference in their character may influence the difference in their use. In Norwood West the backlanes, since they are the only roads adjacent to the dwelling, have a dual quality particular to Radburn-

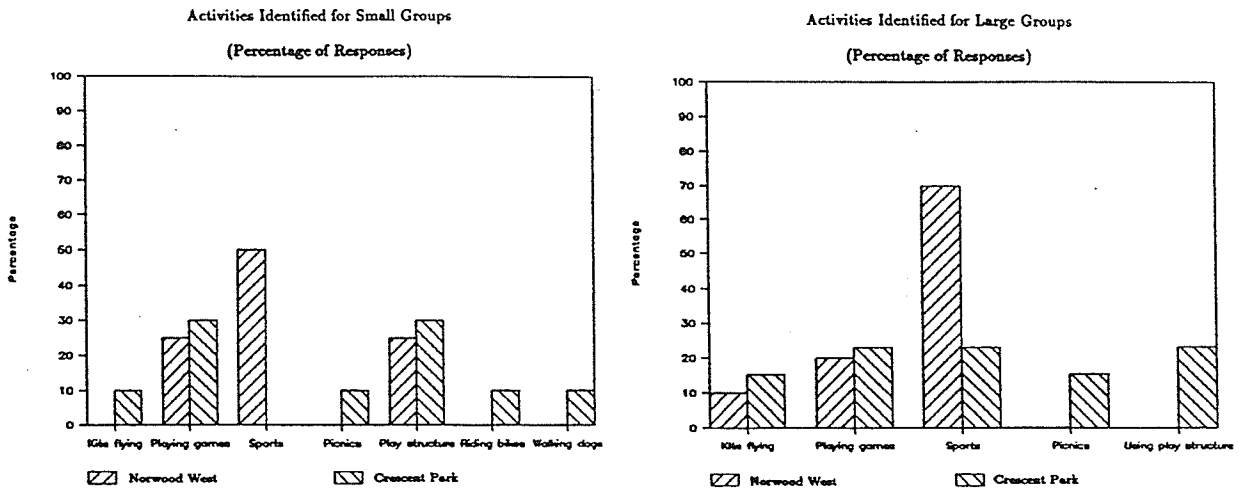


Figure 24: These two graphs show that sports is the major activity identified by the Norwood West group, whereas in the Crescent park area sports were not as important.

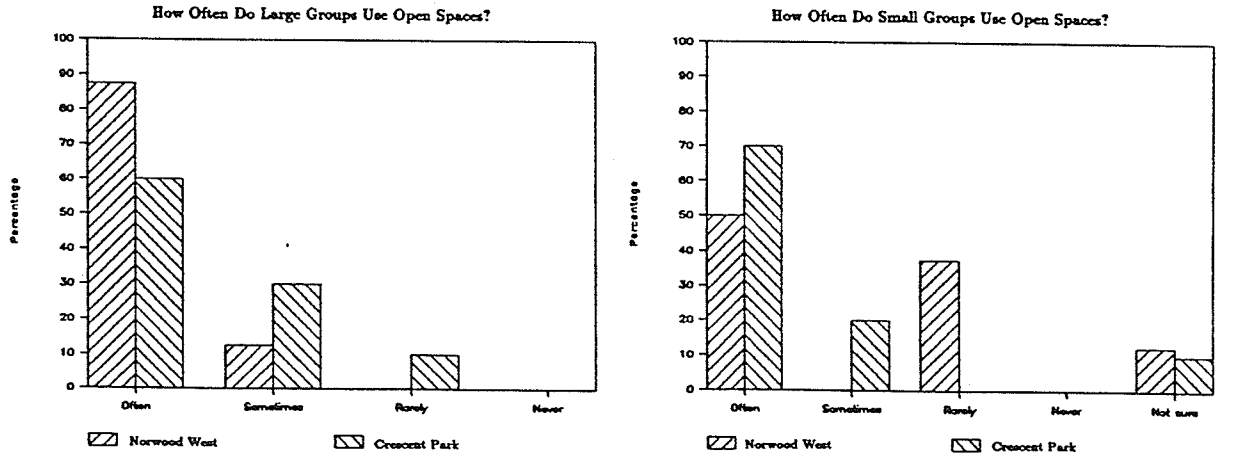


Figure 25: These two graphs illustrate the perception of whether the open spaces in each area are used by large or small groups of people.

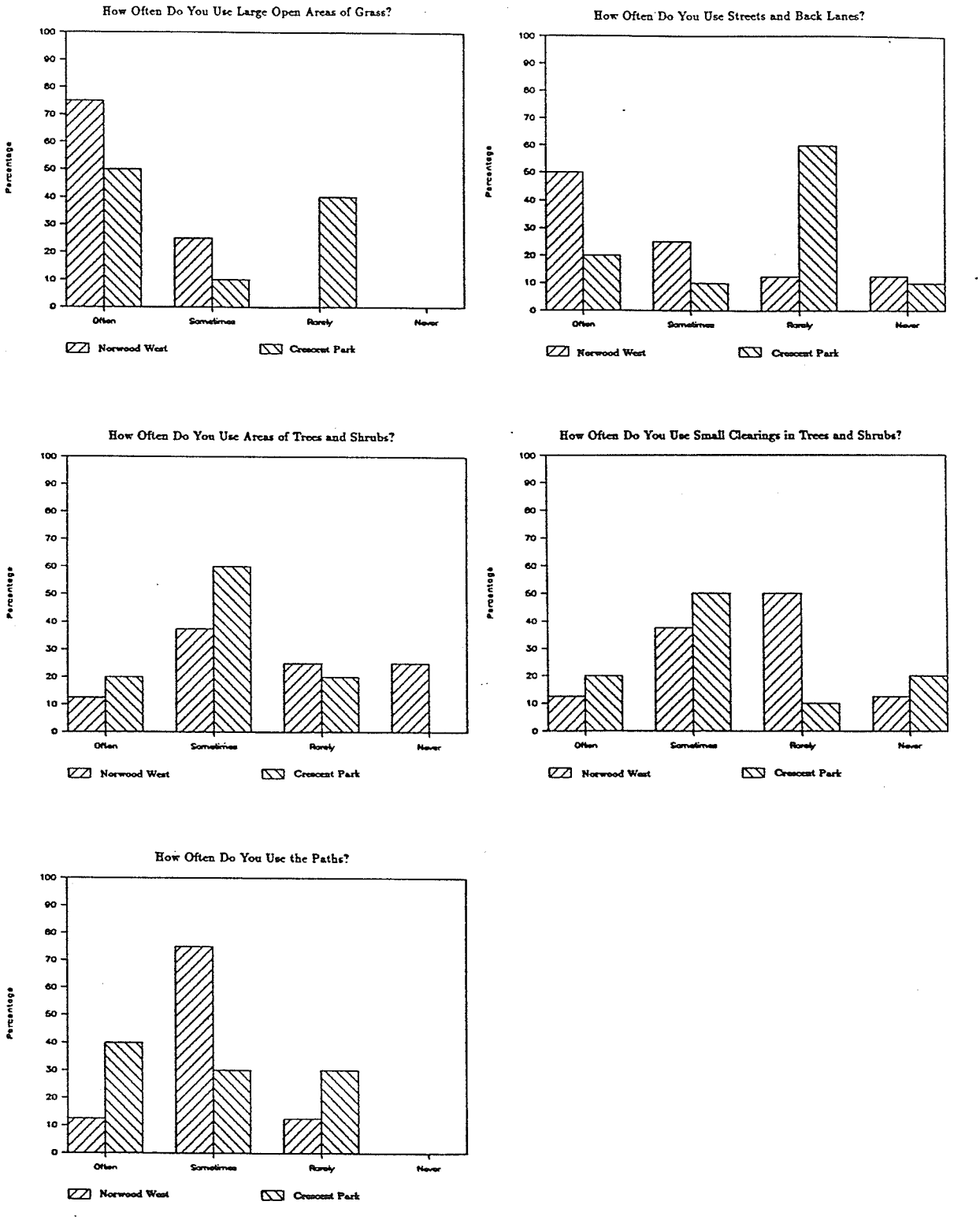


Figure 26: These graphs illustrate the similarities and differences between use of the open spaces in each neighbourhood.

like layouts, where the backlane is also used as the front street. This 'street' has a intimate quality and personal diversity not found in the typical suburban street layout. Another type of open space addressed were areas of trees and shrubs (Figure 26c). The use of such areas was higher in the Crescent Park area. This difference is again probably a matter of availability and accessibility. In the Crescent Park area trees and shrubs are a prevalent aspect of its open space, whereas in the Norwood West area, trees and shrubs are found almost entirely along the river's edge, which is out of bounds for some children.[1] When the study groups were asked how often they used small clearings in trees and shrubs, the Crescent Park group again responded more favourably than the Norwood West study group (Figure 26d). Paths seemed to be almost equally used in both sites, although the degree of use differed (Figure 26e). The majority of the Norwood West group responded that they used the paths sometimes, whereas the Crescent Park group's response was almost evenly divided between often, sometimes, and rarely. This seems to indicate a more casual use in Norwood West. This also happens in Crescent Park, but is often combined with a more purposeful use.

To try to find out if linear routes were more important than open spaces, the study groups were asked how often they walked or rode their bikes around the neighbourhood. Riding around on bikes seemed a popular activity in both sites. To try to find out the purpose of this activity, they were asked if they 'cruised around' looking for something to do, or someone with whom to do things. By the number of 'not sure' responses from the Norwood West group it looks as though they did not really understand what was meant by the question. When asked if it is hard to find things to do close to home the majority in both groups responded 'no', with the Norwood group responding slightly more this way. It is interesting that both groups would give similar responses considering how different the sites are in character.

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[1] One child was asked in the interview why he did not use the monkey trail since it seemed a popular spot from what I could see? His reply was "I don't have people to play with there because they are all boring or they aren't allowed to go down there."

4.1.1. Summary

- Availability and accessibility of particular vegetative types seemed to influence how the open space was used in two ways.
  - i) The predominance of one particular vegetative type seemed reflected in the predominance of one activity. In Norwood West, with its large areas of grass, sports and large groups domintated the reported use of the open space.
  - ii) The use of tree and shrub areas seemed dependent on their accessibility and availability within the neighbourhood. Use of these tree and shrub areas is noticeably higher in Crescent Park.
- Although the diversity of the experiences may be limited by the environmental framework, it did not appear to hamper finding things to do according to the study groups.

4.1.2. Design Implications

- Tree and shrub areas need to be available and easily accessible if they are to be used by elementary school children.
- The provision of a diversified environment is likely to vary activities and play experiences as well.

4.2 General Use of Open Space in the Detailed Study Area

To better understand how and by whom each of the areas are used, the study's approach was two fold. One method used was the structured interview, and the other was site observations (before and after the structured interviews). The findings from the site observations will be discussed first (Figure 27, and 28).

Table 3 shows that the most frequently seen activity in both sites was bicycling. In Norwood West, the Monkey Trail was a popular place to ride bikes. The river bank's flood plain provided a varied topography of mounds and hollows. The vegetation creates an obstacle course as the trail wins through it. In Crescent Park, the bush was a popular place to ride bikes. This area did not have the varied topography, but the dense understory created excitement with its spatial uncertainty. Use of the play structure was the next most frequently seen activity in the Norwood West area, but in the Crescent Park area it ranked fourth. The little observed use

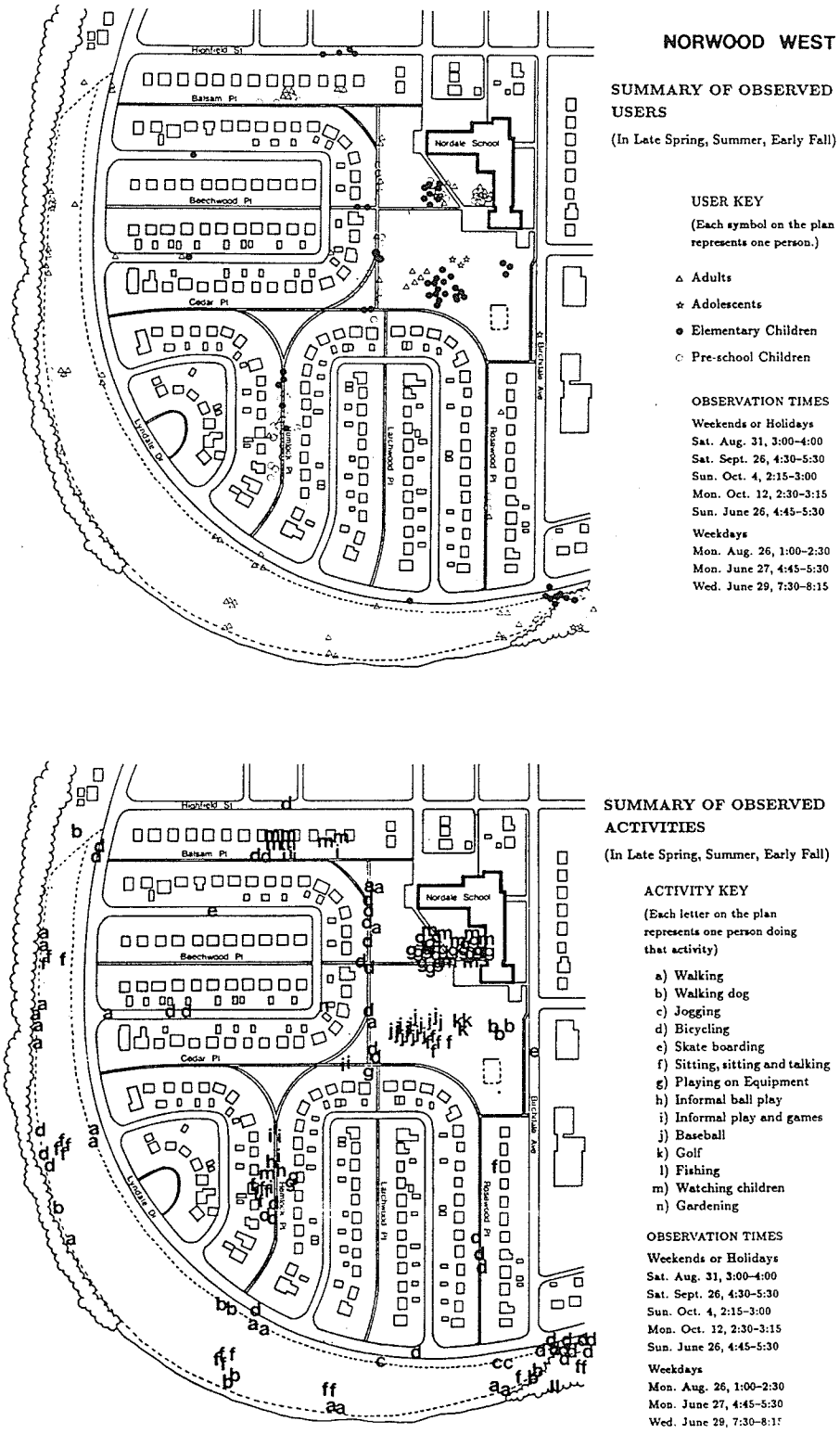
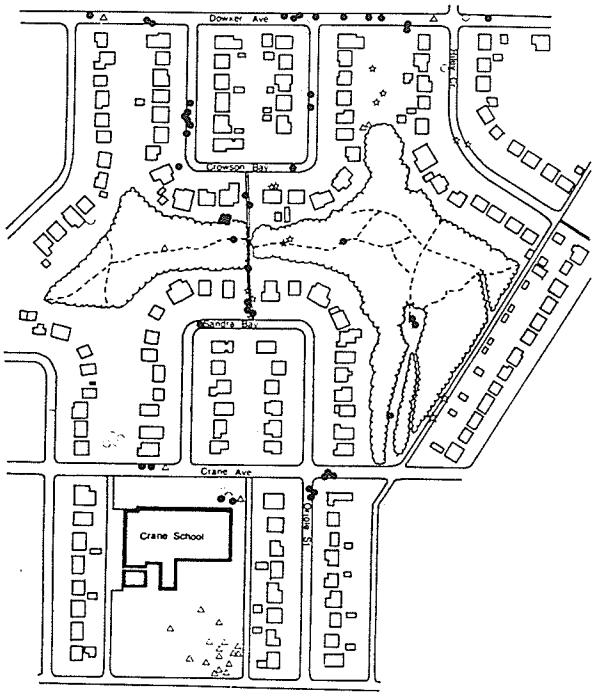


Figure 27: Maps of the frequency of observed activities and users in the detailed study area of Norwood West.



CRESCENT PARK

SUMMARY OF OBSERVED USERS

(In Late Spring, Summer, Early Fall)

USER KEY

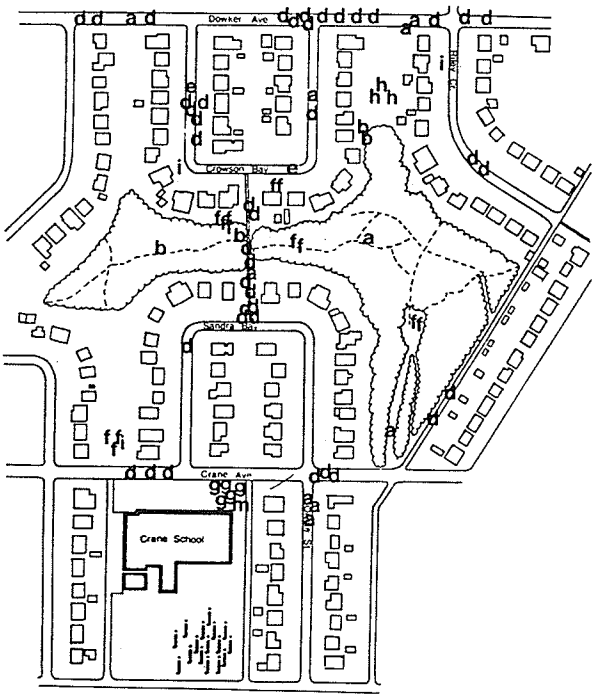
(Each symbol on the plan represents one person.)

- △ Adults
- ☆ Adolescents
- ● Elementary Children
- ○ Pre-school Children

OBSERVATION TIMES

Weekends or Holidays
Sat. Sept. 26, 3:00–4:00
Mon. Oct. 12, 1:45–2:00
Sun. June 26, 3:45–4:30
Sat. July 2, 3:00–3:45

Weekdays
Tues. Aug. 27, 3:30–4:30
Fri. Aug. 30, 3:15–4:15
Thurs. June 2, 4:00–4:45
Thurs. June 2, 7:00–7:45



SUMMARY OF OBSERVED ACTIVITIES

(In Late Spring, Summer, Early Fall)

ACTIVITY KEY

(Each letter on the plan represents one person doing that activity)

a) Walking
b) Walking dog
c) Jogging
d) Bicycling
e) Skate boarding
f) Sitting, sitting and talking
g) Playing on Equipment
h) Informal ball play
i) Informal play and games
j) Baseball
k) Golf
l) Fishing
m) Watching children
n) Gardening

OBSERVATION TIMES

Weekends or Holidays
Sat. Sept. 26, 3:00–4:00
Mon. Oct. 12, 1:45–2:00
Sun. June 26, 3:45–4:30
Sat. July 2, 3:00–3:45

Weekdays
Tues. Aug. 27, 3:30–4:30
Fri. Aug. 30, 3:15–4:15
Thurs. June 2, 4:00–4:45
Thurs. June 2, 7:00–7:45

Figure 28: Maps of the frequency of observed activities and users in the detailed study area of Crescent Park.

Table 3: Frequency of Observed Activities

ACTIVITY	NUMBER OF TIMES OBSERVED			
	Norwood		Crescent	
	No.	%	No.	%
Walking	20	12.0	10	10.3
Walking dog	11	6.6	4	4.1
Jogging	3	0.2	0	0.0
Bicycling	37	22.3	40	41.2
Skate boarding	2	0.1	2	2.0
Sitting, Sitting and talking	22	13.6	13	13.4
Playing on equipment	25	15.0	5	5.0
Informal ball play	2	0.1	3	3.0
Informal play and games	9	0.5	3	3.0
Baseball	22	13.3	16	16.4
Golf	3	0.2	0	0.0
Fishing	2	0.1	0	0.0
Watching children	7	4.2	1	1.0
Gardening	1	0.1	0	0.0
	166	100.0	97	100.0

of the play structure in the Crescent Park neighbourhood may be because children prefer to use the play structures in Crescent Park itself. This is a possible suggestion based on the number who identified the play area in Crescent Park as an area of interest. The next most frequently observed activity for both sites was baseball. The number of people involved in a baseball game distorts the actual frequency of the activity. In both Norwood West and Crescent Park, only one baseball game was observed. The next most frequently observed activities on both sites were sitting, or sitting and talking, walking, and walking with a dog. Observation of informal play, games and ball play were relatively low in both sites. It is interesting to note that despite the different character of the two sites the activities and their relative frequency are very similar. As mentioned earlier, the difficulty of making observations in the detailed study area of Crescent Park (because of the density of the vegetation) may have hidden some activities from view.

As well as observed activities, the approximate age of the user was recorded (Figure 27, and 28). The users were grouped into four basic categories—adults, adolescents, elementary school children, and pre-school children.

In the Norwood West site, particular areas are preferred by the different user groups. Most of the adults or adults with pre-school children use the riverside park or school grounds. Adolescents were infrequently seen in this area (except for two seen fishing on the river bank, three seen practising golf in the school ground, and one observed skateboarding on the street). The elementary school children were seen mainly at the play structure, in the school grounds, on the streets and paths, and around the monkey trail. Pre-schoolers were seen on the paths in front of the houses (often with an adult watching), and on the play equipment in the school grounds, or in the Riverside Park accompanied by an adult.

Compared to the Norwood West area, the zoning of user preference in the Crescent Park area is not as distinct. Adults were not seen as often as in Norwood West. The ones observed were seen riding bikes on the streets, walking dogs, or playing baseball on school grounds. With Crescent Park so close to this area, probably quite a few adults go there instead, judging by its popularity. As in Norwood West, very few adolescents were seen. A few were observed riding bikes, sitting and talking, and throwing a ball around. The elementary school children seem to be scattered around the detailed study area although most were seen on the paths and streets. Only two were observed using the play structure, and only four were seen using the bush. Pre-schoolers were observed on the play structure accompanied by an adult, or around the front or back of the houses in grassy open areas.

The structured interview helped develop a better understanding of the children's use and feelings for the detailed study area's open space. To find out how much the study groups use the open space they were asked how often they had used or passed through it in the past week. For both areas, the open spaces were used by the majority of the study group, but not intensely by many. Only one child from Crescent Park had used it more than ten times and three in the same study group had not used it at all. Most of the responses fell into the categories of three or less or three to ten times. The majority of time spent per visit in both areas was between five and thirty minutes. The Crescent Park group tended to spend slightly longer per visit. Crescent Park had more visits in the fifteen to thirty minute range, whereas Norwood West had more visits in the five to fifteen minute

range. The amount of time spent in the area indicates that the space is used by some for more than just passing through.

To understand how the study groups use the open space in each area they were first asked if the area was a place to explore (Figure 29a). The strong "yes" from the Crescent Park group and the strong "no" from the Norwood West group indicate a major use discrepancy. As one child from Norwood West responded "there is nothing to explore." Open grass areas with a few ornamental plantings are too revealing to generate any sense of exploration. In contrast, a child from Crescent Park said that part of the fun of playing in the bush area is that "you can't see where you are going." The spatial uncertainty, because of the vegetation structure, seems to add a lot to creating a place to explore. The next question asked was if the area was 'a sort of private place to talk' (Figure 29b). More from the Crescent Park than from the Norwood West group thought of it as a sort of private place. Almost everyone in both groups used the area as a place to pass through, most often when going to or coming from school (Figure 29c). The difference in the groups responses to whether or not the place held any importance for them (Figure 29d) is more pronounced when viewed with the children's additional comments (Appendix A). For this question more than half in the Crescent Park group felt it was important to them whereas more than half in the Norwood West group felt it was not important to them. The Crescent Park group were not indifferent to the bush area, with one child expressing his dislike, and five others expressing their strong attachment to the area (See Appendix A). This sense of attachment shown by the majority of children in the Crescent Park group was not present, or at least not expressed, in the Norwood West group.

When asked about particular aspects of the open space some differences and similarities are noted. The Norwood West group responded that they enjoyed using paved paths better than trodden paths (Figure 30a). The majority of the Crescent Park group, on the other hand, enjoyed and use the trodden paths slightly more than the paved paths (Figure 30b). Within the bush, there is an extensive network of paths which show considerable use. Grass areas in the detailed study areas were identified by the study groups as being slightly more used and enjoyed by the Norwood West group (Figure 30c). The tree and shrub areas are rarely used in this

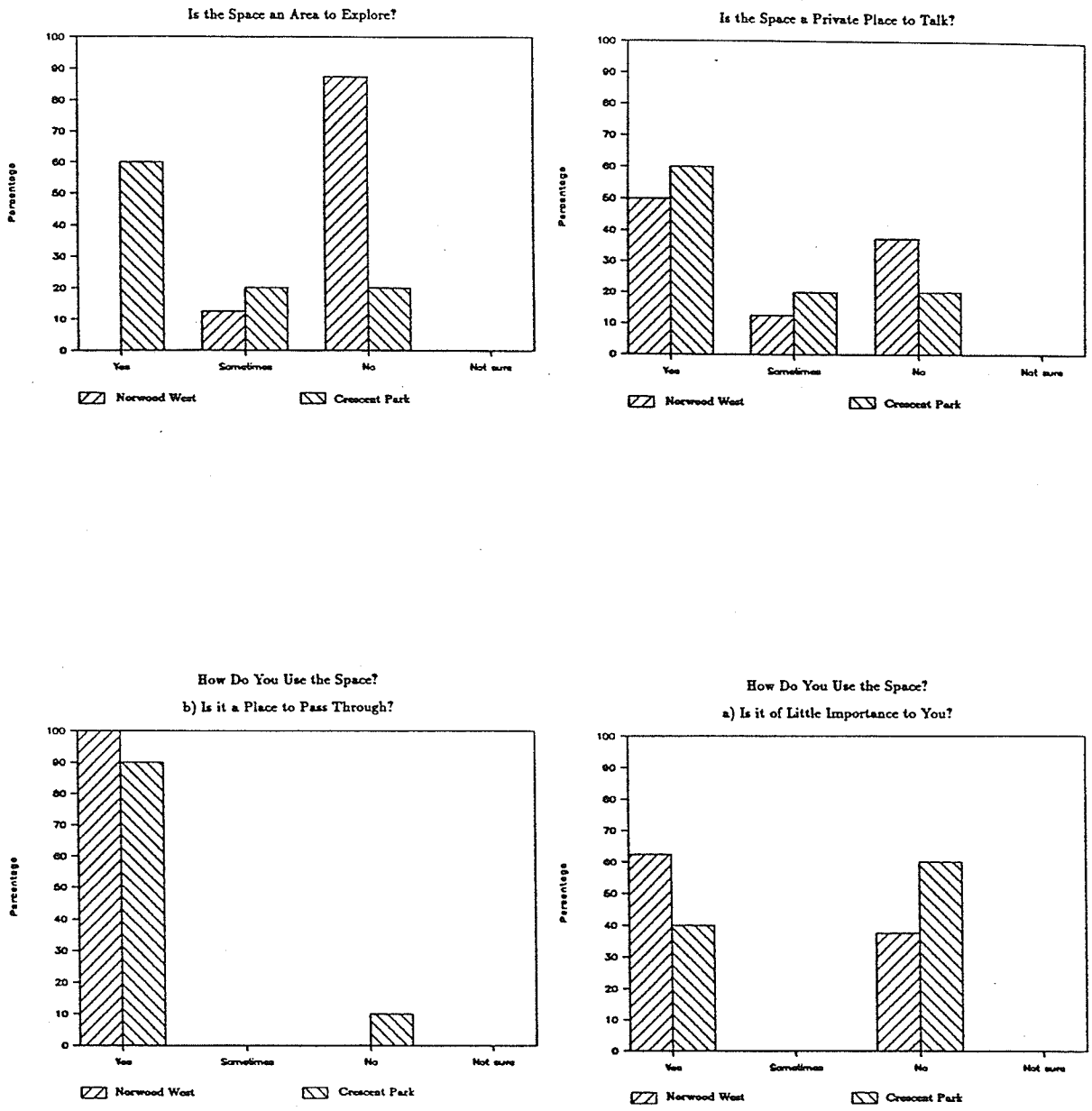


Figure 29: These graphs illustrate the similarities and differences in the responses from the two study groups concerning their use of the open space in the detailed study areas.

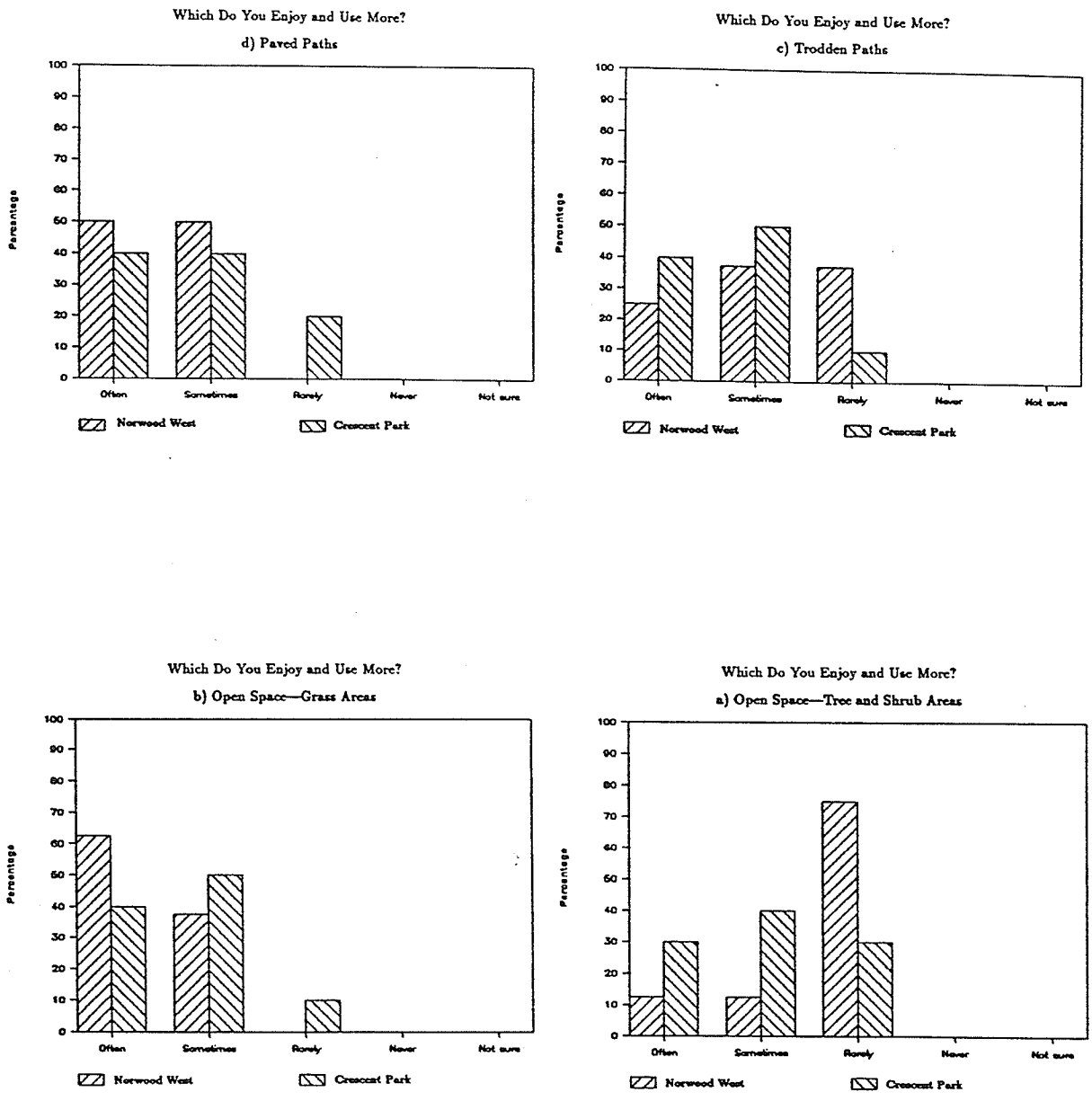


Figure 30: These graphs illustrate the similarities and differences in responses from the two study groups concerning particular aspects of the open space in the detailed study areas.

study area, probably because of their location near the river. More in the Crescent Park study group responded that they used tree and shrub areas (Figure 30d). The response, however, is varied, with a little under a third saying that they use the areas often, with the same number saying rarely, and a little over a third responding sometimes.

4.2.1. Summary

- Bike riding was the most popular observed activity in both areas. Areas of particular interest to the elementary school children were the trails over more rugged terrain or through areas with an understory.
- Elementary school children appeared to use, in both study sites, streets and paths, and school grounds (particularly the equipment). In Norwood West there was a higher use of backyards, and in Crescent Park there was a higher use of informal open space.
- Although the environmental framework did not influence whether the children could finds things to do (as stated in the previous section), it did seem to influence how these children used and their feelings about the area.
  i) Exploration is the key activity that seems supported by the vegetation structure in the informal open space of the bush, but seems inhibited by the wide open areas of grass in Norwood West.
  ii) The sense of personal attachment seems stronger towards the informal open space of the bush, than the formal open space found else where. Those children who had direct or easy access to natural areas, were the ones who had the strongest personal attachment to those areas.
- Again availability and accessibility of tree and shrub areas within these particular neighbourhoods seemed to influence the child's use and enjoyment of them.

4.2.2. Design Implications

- Residential areas need to accommodate the popular activity of bike riding on dirt as well as paved surfaces. Varied topography and vegetation (as found on the flood plain) create an interesting area for bike riding. Informal open spaces with troddened paths through an understory also provide interesting trails.

- To provide children with areas to explore, diverse vegetation and spatial structures are needed.
- The provision of informal open space close to the home is one means of giving children a place where they can develop a sense of personal attachment.

4.3 Places of Social or Physical Interest

4.3.1. Hangouts

'Hanging out' as an activity was much more popular with the Crescent Park study group than it was with the Norwood West group. The Crescent Park group responded that they often or sometimes use hangout areas, whereas fewer responded often or sometimes in the Norwood West group (Figure 31a). A similar pattern is seen in the responses to whether there were places to hang around and watch what was happening. In the Crescent Park group, everyone could identify a personal hangout whereas only sixty-two percent could identify such a place in the Norwood West group. The Crescent Park children are slightly older. This may be the reason why these social areas are of more interest to them. For the Norwood West group sports are identified as the subject of interest (Figure 31b), which explains the appeal of the school and community facilities. Watching sports and games is also of interest to the Crescent Park group, but not to the same extent. Watching boats, police cars, people, or just sitting and talking are all activities of interest.

The type of areas identified as hangouts were quite different in the two areas (Figure 32). The only hangout areas identified in the Norwood West area were the Community Centre and to a lesser extent the school. The majority of the 'hangouts' identified by the Crescent park group, however, were formal open spaces such as the Community and Neighbourhood parks. The school and the community centre were identified as only minor hangout areas.

The 'hangouts' identified in the two neighbourhoods had two common features. Areas of social interest usually focus on people involved in some particular activity which may be sports/games, walking, boating, or driving. These activities are often viewed from some man-made structure such as play equipment, park furniture, or dock. In the Crescent Park Neighbourhood, the most popular area of social interest was the playground at the Community Centre. Therefore, the preferred 'hangout' seems to be around play equip[ment or structures within a park environment or its

Table 4: Personal neighbourhood "hangouts" identified in interviews*

†AREA OF INTEREST	NUMBER OF CHILDREN			
	Norwood		Crescent	
	No.	%	No.	%
SCHOOLS/COMMUNITY FACILITIES‡				
School Grounds	2		2	
Community Centre	3		1	
	5	62.5	3	30.0
FORMAL/INFORMAL OPEN SPACES				
Community Park	0		5	
Neighbourhood Park	0		1	
	0	0.0	6	60.0
COMMERCIAL AREAS				
Convenience Store			1	
	0	0.0	1	10.0
NONE	3	37.5	0	0.0
	8	100.0	10	100.0

* In response to the question "Are there places where you and your friends stand around and just watch what is happening? Where would you hang around in this area?" Asked while looking at an aerial photo of the whole neighbourhood.

† Area categories are based on place types used by Robin Moore in *Childhood Domain*, 1986, Table 3 p. 277, Table 5 p. 279.

‡ Community facilities are defined as places designed primarily for sports or recreational activities.

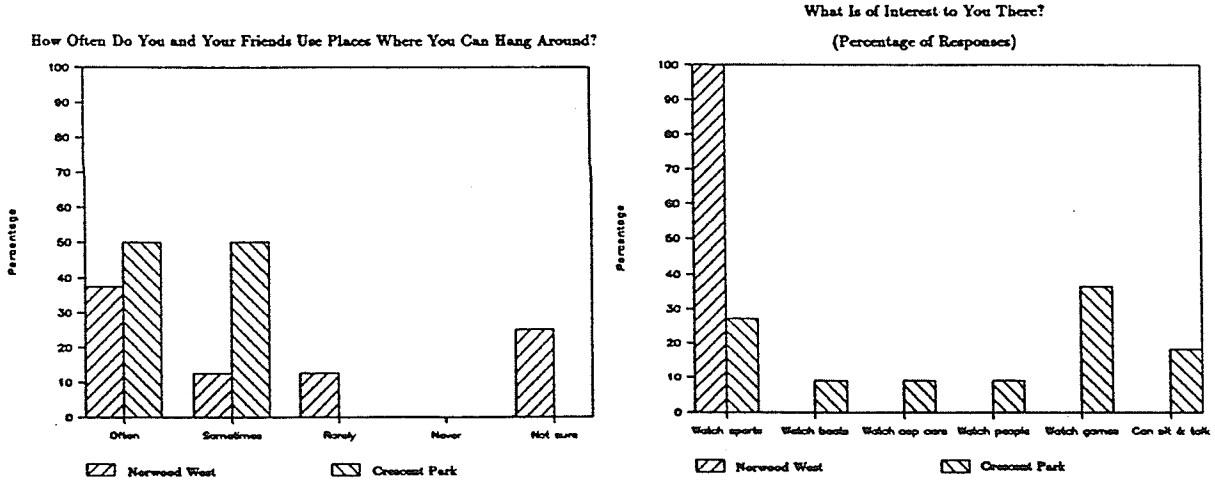
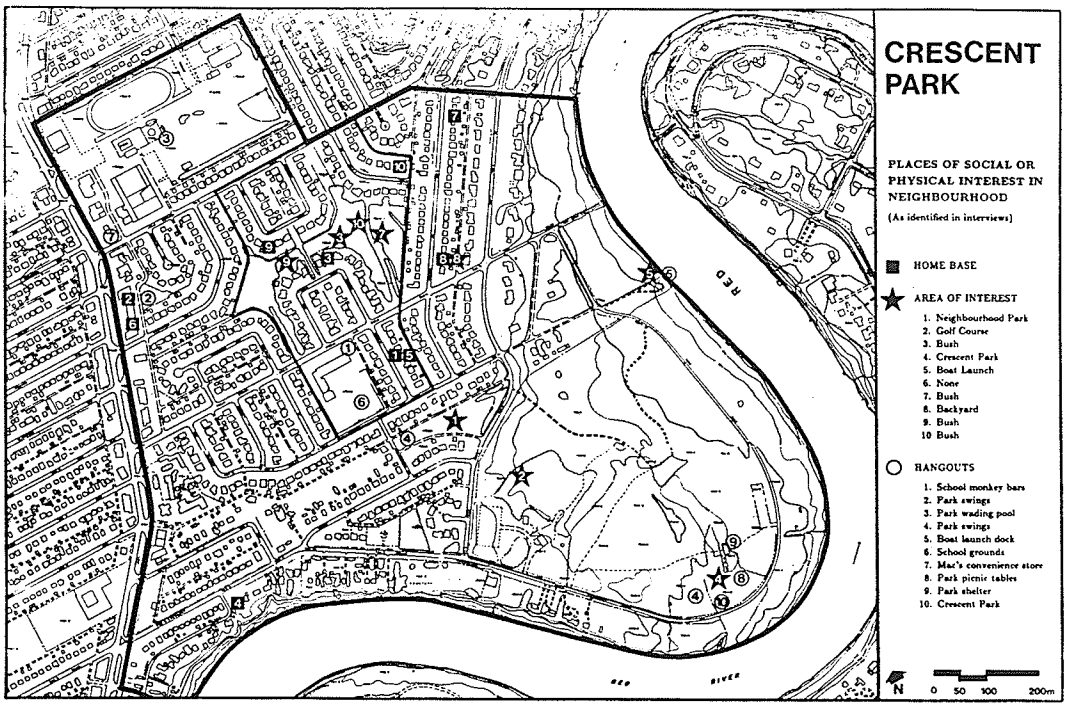


Figure 31: These graphs show first the difference between the two study groups in how popular 'hanging out' is as an activity. Secondly, the difference in the subject of interest for the two study groups.



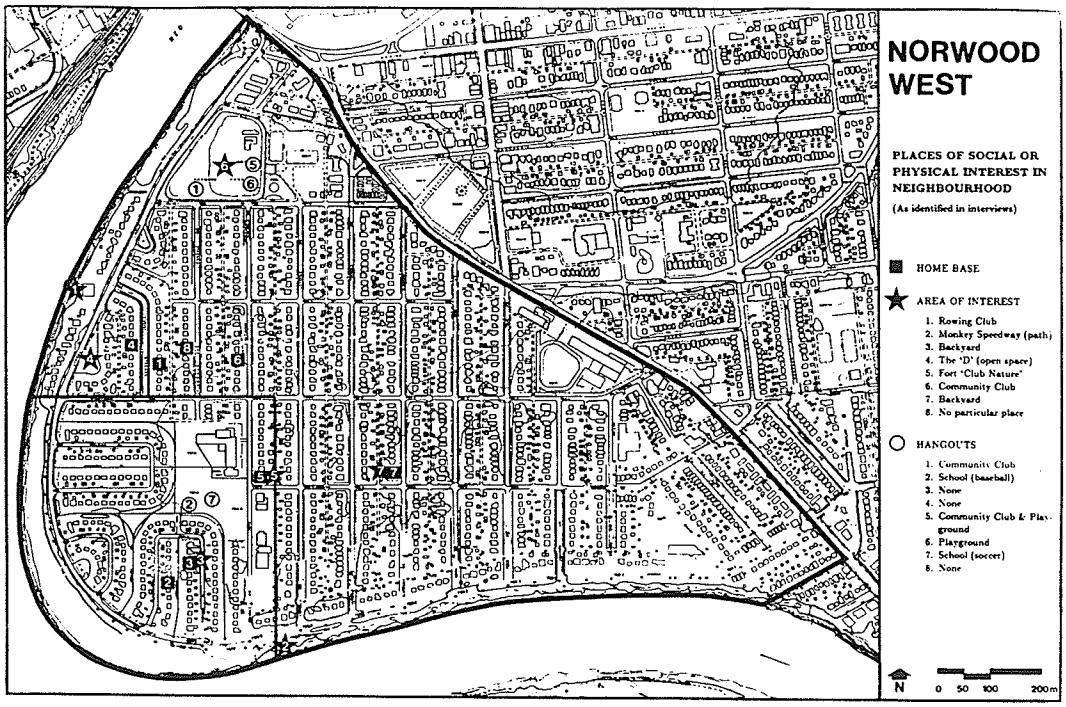


Figure 32: Maps showing areas of physical and social interest in the Norwood West and Crescent Park areas, as identified by the children in interviews.

closest equivalent (the Community Centre is the closest equivalent).

4.3.2. Most Interesting Areas in the Neighbourhood

In the Crescent park area a good majority of the study group identified formal/informal open space areas as the most interesting. The bush, an informal open space, is the area most identified under this category. (Table 5). The study group in Norwood West did not have such a strong preference for one particular area. Slightly more identified their backyard as the most interesting area, followed closely by community facilities and formal/informal open spaces. It is interesting to note that no one from either study group identified the school grounds as an interesting area. It is also interesting to note in contrast that in both sites five of the nine places identified are informal open spaces such as the 'Bush' and the 'Monkey Trail.'

When asked why they chose these particular areas their reasons could be grouped into basically seven categories (Table 6). The reasons most commonly given for choosing community facilities and formal open spaces were that they liked to use the play equipment, play a sport, watch an activity, and be around other people. For homesites and informal open spaces, such as the bush and the monkey trail, the reasons most commonly given were that they liked or used the natural resources, the wildlife, and often had a personal attachment to a place. Reasons particular just to the informal open spaces were that they liked a special quality of an area or liked the sense of discovery.

4.3.3. Most Interesting Areas in the Detailed Study Area

In contrast to identifiying the most interesting area in the whole neighbourhood, for the detailed study area the children were asked to focus on just the open space in the area. The major change in both sites is that the school grounds, which were not identified by anyone as the most interesting area in the neighbourhood, were chosen by half the Norwood group and a fifth of the Crescent Park group when restricted to just the detailed study area (Table 7, Figure 33). It is also interesting to note that no one in the Norwood West group identified the formal open space adjacent to the river and only one chose the informal open space known as the Monkey Trail. This agrees with the site observations that noted very little use of this area by elementary school children, but much use by adults. Since later in the interview the children state that adults do not really influence where they play, the reason is

Table 5: Most interesting areas in neighbourhood identified in interviews*

†AREA OF INTEREST	ACTIVITY	NUMBER OF CHILDREN			
		Norwood		Crescent	
		No.	%	No.	%
HOMESITE					
Backyard	play	1			
Backyard (fort)	playing house, talking	1			
Backyard	swimming in pool	1			
Backyard	jumping on trampoline			1	
		3	37.5	1	10.0
SCHOOLS/COMMUNITY FACILITIES					
Rowing Club	wash and watch boats	1			
Community Club	play in playground, watch baseball	1			
Golf Course	play golf			1	
		2	25.0	1	10.0
FORMAL/INFORMAL OPEN SPACES					
Monkey Speedway	ride bikes	1			
The 'D'	play baseball, races	1			
Neighbourhood Park	play on swings and merry-go-round			1	
Bush	ride around and explore			1	
Crescent Park	swing and have picnics			1	
Boat Launch	sit there and watch the water			1	
Bush	ride bikes			1	
Bush	explore and make forts			1	
Bush	ride bikes			1	
		2	25.0	7	70.0
NONSPECIFIC OR NONE					
Go all over	walk or ride bike around	1			
No place				1	
		1	12.5	1	10.0
		8	100.0	10	100.0

* In response to the question "Where is the most interesting area for you in your neighbourhood? What do you do there?" Asked while looking at an aerial photo of the whole neighbourhood.

† Area categories are based on place types used by Robin Moore in *Childhood Domain*, 1986, Table 3 p.277, Table 5 p.279.

Table 6: Why children found areas in neighbourhood of special interest*.

PLACE	REASON	MENTIONS			
		Norwood		Crescent	
		No.	%	No.	%
	LIKE USING EQUIPMENT OR PLAYING A SPORT				
Community Centre	like playing in playground	1			
Backyard	like swimming in pool	1			
Neighbourhood park	like swings, merry-go-round			2	
Golf Course	like playing golf			1	
Crescent Park	things to do			1	
Backyard	like jumping on trampoline			1	
		2	20.0	5	45.5
	LIKE TO WATCH AN ACTIVITY				
Rowing Club	like to watch the boats	1			
Community Centre	like to watch baseball games	1			
		2	20.0	0	0
	LIKE BEING AROUND OTHER PEOPLE				
Bush	riding bike with friends			1	
Community Centre	lots of action	1			
Rowing Club	get to help wash the boats	1			
		2	20.0	1	9.0
	LIKE OR USE NATURAL RESOURCE/WILDLIFE				
Backyard	like to collect nature, plant plants	1			
Backyard	like to climb trees	1			
Bush	like to see different animals			1	
Boat Launch	like to watch the water			1	
Bush	like to listen to birds and watch squirrels			1	
		2	16.7	3	20.0
	LIKE SPECIAL QUALITY OF AREA				
Bush	like always seeing different things			1	
Bush	because it is like a maze, alot of paths			1	
Monkey Trail	because it is something different	1			
The 'D'	a large space, can do lots of things in it	1			
		2	20.0	2	13.3

* In response to the question "Where is the most interesting area in your neighbourhood? Why is it the most interesting?". Asked while looking at an aerial photo of the whole neighbourhood.

Table 6: Why children found areas in neighbourhood of special interest

PLACE	REASON	MENTIONS			
		Norwood		Crescent	
		No.	%	No.	%
	PERSONAL ATTACHMENT TO A PLACE				
Bush	means a lot to me			1	
Bush	like trying to make a fort there			1	
Fort in Backyard	it is a second home	1			
Backyard	like playing next to my picnic table	1			
		2	16.7	2	13.3
	LIKE SENSE OF DISCOVERY				
Bush	like riding bike and exploring			1	
Bush	like to explore			1	
		0	0	2	13.3
		12	100.0	15	100.0

probably not the presence of the adults, but that they prefer the school grounds to riverside park. This is probably because there is more to do on the school grounds with the play structure and baseball diamonds. These features were shown to be quite popular with the elementary school children in the site observations. The school grounds may also be preferred for social reasons since it is the focus of the housing layout and was earlier identified by some in the study group as a personal hangout whereas riverside park was not. These conclusions are supported by the children's reasons for choosing these particular areas as the most interesting. The main reasons given by the children who chose the school as the most interesting area were that they liked to use the play structure, play a sport or game, and liked being around other people (Table 8). The fact that a few in this study group could not identify a most interesting area besides their own backyard is also worth noting.

In contrast to the Norwood West study group, eighty percent of the study group in Crescent Park chose the open space known as the 'bush' and only twenty percent chose the school grounds. This difference between the sites would tend to indicate either two things—that the school grounds in the Norwood West area are more interesting physically or socially than its counterpart in Crescent Park, or that the open space in Crescent Park is more interesting and perhaps is in a

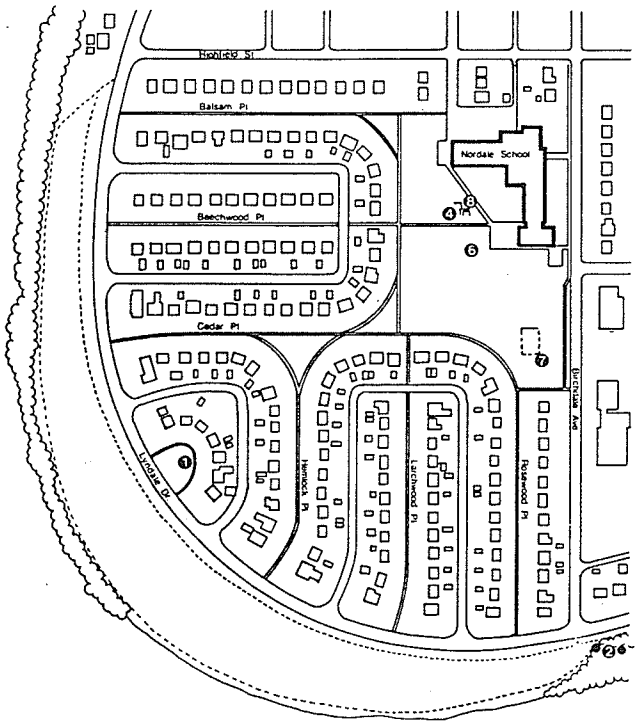
Table 7: Most interesting places in detailed area identified in interviews*

†AREA OF INTEREST	ACTIVITY	NUMBER OF CHILDREN			
		Norwood		Crescent	
		No.	%	No.	%
SCHOOLS/COMMUNITY FACILITIES					
School Playground	play on equipment	1			
School Grounds	play tag	1			
School Grounds	play baseball, soccer	1			
School Playground	play on equipment	1			
School Playground	play on monkey bars			1	
School Grounds	play, sit and talk			1	
		4	50.0	2	20.0
FORMAL/INFORMAL OPEN SPACE					
The 'D'	play hide and seek	1			
Monkey Speedway	ride bikes	1			
Bush	bike riding and exploring			1	
Clearing in Bush	walk around, pick flowers			1	
Clearing in Bush	sit and talk, play			1	
Clearing in Bush	explore			1	
Bush	explore, talk			1	
Paved path through bush	ride through, sit and talk			1	
Clearing in Bush	run around, play			1	
Bush	ride bikes, play hide and seek			1	
		2	25.0	8	80.0
NONE IN STUDY AREA					
No place	only like backyard	2		0	
		2	25.0	0	0.0
		8	100.0	10	100.0

* In response to the question "Where is the most interesting area for you in your neighbourhood? What do you do there?"Asked while looking at an aerial photo of the whole neighbourhood.

† Area categories are based on place types used by Robin Moore in *Childhood Domain,* Table 3 p.277, Table 5 p.279.

more desireable location for both the children and the parents. Since no one in the Norwood West study group had identified the school grounds, whereas forty percent in the Crescent Park study group had identified the bush as the most interesting area



NORWOOD WEST

MOST INTERESTING AREAS
IN DETAILED STUDY AREA

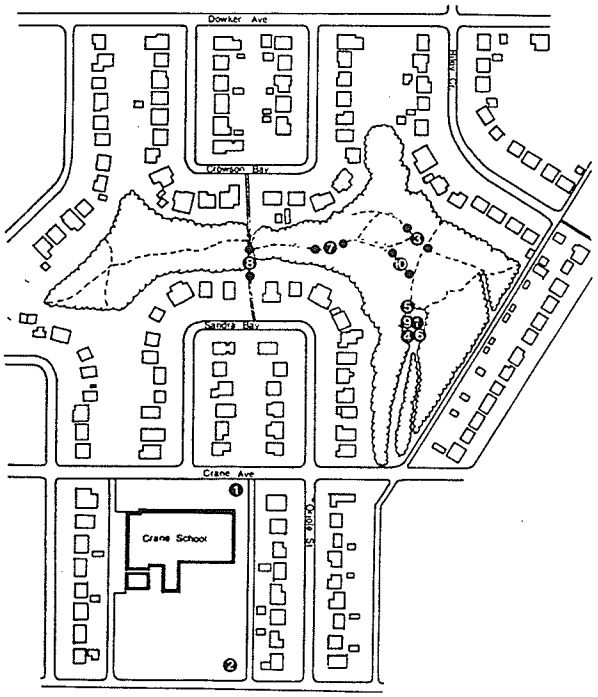
(As identified in interviews)

AREA OF INTEREST

1. The 'D'
2. Monkey Trail
3. None
4. School - play equipment
5. None
6. School grounds
7. School grounds
8. School - play equipment

ACTIVITIES

1. Hide and seek
2. Bike riding, getting away
3. None
4. Play equipment
5. None
6. Tag
7. Baseball
8. Play equipment



CRESCENT PARK

MOST INTERESTING AREAS
IN DETAILED STUDY AREA

(As identified in interviews)

AREA OF INTEREST

1. School - play equipment
2. School (treed area)
3. Bush - paths and spots
4. Clearing in Bush
5. Clearing in Bush - edge
6. Clearing in Bush
7. Bush - paths and spots
8. Bush - paved path
9. Clearing in Bush
10. Bush - paths and spots

ACTIVITIES

1. Gymnastics, monkey bars
2. Sit under trees, talk
3. Explore
4. Walk around, pick flowers
5. Sit under trees
6. Explore, run around
7. Explore
8. Ride through, sit and talk
9. Run around, play
10. Ride bikes, hide and seek

Figure 33: Maps showing areas of interest in the detailed study area of Crescent Park and Norwood West as identified in the children's interviews.

Table 8: Why children found places in detailed area of special interest*

PLACE	REASON	MENTIONS			
		Norwood		Crescent	
		No.	%	No.	%
	LIKE USING EQUIPMENT OR PLAYING A SPORT				
Nordale School	things to play on	1			
Nordale School	like to climb on play structure	1			
Nordale School	like to play baseball	1			
Crane School	like to play on monkey bars			1	
		3	37.5	1	8.3
	LIKE TO PLAY GAMES				
The 'D'	like to play hide and seek	1			
Nordale School	play lots of games	1			
Clearing in Bush	like to play and run around			1	
Clearing in Bush	like to do gymnastics			1	
Bush	like to play hide and seek			1	
		2	25.0	3	25.0
	LIKE BEING AROUND OTHER PEOPLE				
Nordale School	lots of frinds around	1			
Crane School	play with friends and talk			1	
		1	12.5	1	8.3
	LIKE OR USE NATURAL RESOURCE/WILDLIFE				
The 'D'	there are lots of trees	1			
Bush	trees to sit under			1	
		1	12.5	1	8.3
	LIKE SPECIAL QUALITY OF AREA				
Clearing in Bush	lots of open space for gymnastics			1	
Bush	fun riding through there			1	
The 'D'	large grass area	1			
Bush	like spots and paths			1	
Bush	like rugged paths			1	
Bush	like finding new spots, exploring			1	
Clearing in Bush	fun to explore			1	
		1	12.5	6	50.0

* In response to the question "Where is the most interesting area in the open space for you? Why is it the most interesting?". Asked while looking at an aerial photo of the detailed study area.

Table 8: Why children found places in detailed area of special interest

PLACE	REASON	MENTIONS			
		Norwood		Crescent	
		No.	%	No.	%
	HAVE A PERSONAL ATTACHMENT TO PLACE				
Bush	I know all the spots, I know it a lot			1	
Bush	I know most of it by now			1	
		0	0.0	2	13.3
	PERSONAL FREEDOM				
Monkey Trail	get away from houses	1			
Bush	lots of places nobody else knows about			1	
		1	10.0	1	6.6
		10	100.0	15	100.0

in the neighbourhood, it is more likely that the reason for the difference between the sites is that the open space is physically more interesting to the children in Crescent Park. Their reasons for chosing this informal open space were the same as those given for the Monkey Trail in Norwood West, that they liked the trees and the special quality about the area (Table 8). Reasons particularly given for the bush area were that they liked the sense of discovery and had a personal attachment to the place. The impression was given that the children felt a sense of ownership because they knew the area better than other people—a sense of conquering the unknown.

4.3.4. Summary

- The most popular 'hangout' seems to be around play equipment or structures within a park environment.
- Community facilities, schools and a formal open space with equipment attracted elementary school children mainly for social reasons. Here they could meet other kids to play games and sports with, as well as have activities to watch. The play equipment was an important focus.
- The schools grounds, despite their elaborate play structures, were not identified as the most interesting area in the neighbourhood by any of the children.
- When the choices were narrowed, by reducing the size of the study area, the majority of the children in Norwood West chose the school grounds over the

open space, whereas the majority of the children in Crescent Park chose the open space over the school ground.

- The smaller, well vegetated areas (the Monkey Trail and 'The D') were the only formal/informal open space choosen as a place of interest in the neighbourhood or the detailed study area of Norwood West, whereas the large open space of riverside park was not chosen at all.
- Specific mention of the enjoyment and use of the natural environment by the Norwood children was in their backyards and the small formal/informal open spaces of 'The D' and the Monkey Trail; for the Crescent Park children, nature was mentioned in reference to the bush and the boat launch area of Crescent Park.
- Formal/Informal spaces attracted elementary school children mainly for environmental and personal reasons. There are trees, rugged paths, interesting spaces and places to explore. These areas were also attractive to the children because they offered them personal freedom and a place they could intimately discover for themselves.

4.3.5. Design Implications

- Play structures and areas for games and sports on the school grounds are socially as well as physically an important component of a play environment. A more varied environment as an additional component to these areas would diversify activities.
- An alternative to wide open areas of grass needs to be provided in open spaces. Smaller green areas close to the home with diverse vegetation offer a different experience not found in the large areas of open grass. These areas should be designed with enjoyment and use of the natural environment in mind. Small complex areas seem particularly good for providing a place to escape to close to home where the elementary school children can intimately discover nature for themselves and spend time alone with their friends.

4.4 Private Places

When the children were asked what made a place private to them the Norwood West group had trouble responding to this question, with half of the group answering

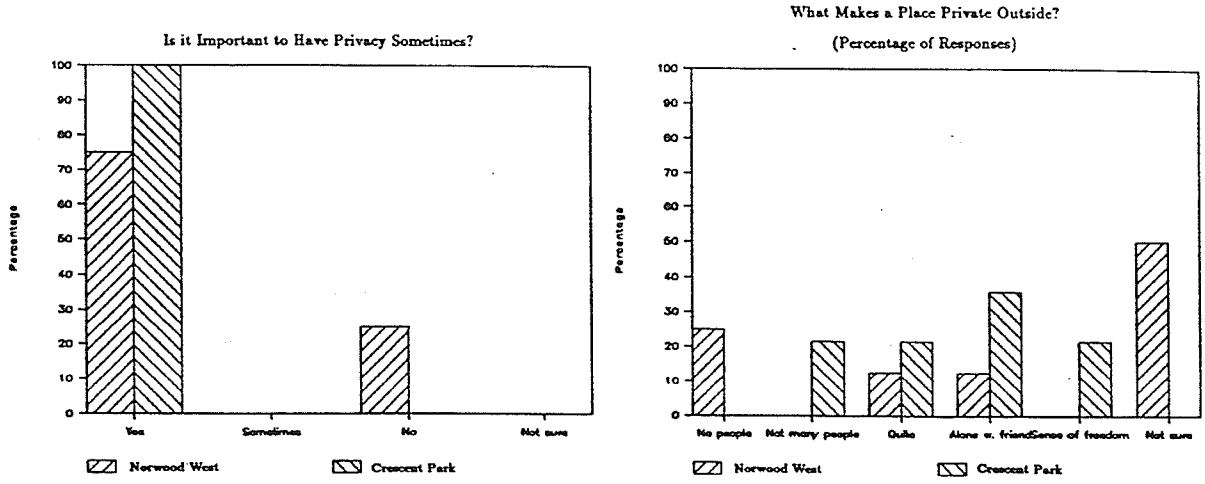


Figure 34: These graphs illustrate the importance privacy has for the two study groups.

'not sure'. The rest mentioned such things as "no people," "quiet," and "alone with a friend". In the Crescent Park group there were similar responses such as "not many people," "quite," "alone with a friend," and "a sense of freedom".

When the study groups were asked if it was important to have privacy sometimes, the majority in both groups gave a strong yes response (Figure 34a). Everyone in the Crescent Park group said yes, and seventy-five percent also said yes in the Norwood West group. Clearly these children viewed privacy as an important aspect of their lives.

When asked if they could find private places outside, the majority responded yes in both groups, with the number of positive responses being slightly higher in the Crescent Park group. When asked to identify their private place in the neighbourhood only six out of the eight could identify a place in Norwood West whereas nine out of ten could in Crescent Park. In the Norwood West group half of the private places identified were located at the homesite (Table 9, Figure 35). The other quarter of the respondents identified trees along the street. In the Crescent Park

Table 9: Private places in neighbourhood identified in childrens' interviews*

†LOCATION OF PRIVATE PLACES	NUMBER OF CHILDREN			
	Norwood		Crescent	
	No.	%	No.	%
HOMESITES				
Frontyard	1		0	
Backyard	2		1	
Between two garages	1			
Side of house			1	
	4	50.0	2	20.0
STREET AND ASSOCIATED SPACE				
Street trees	2			
Backlane			1	
	2	25.0	1	10.0
SCHOOLS/COMMUNITY FACILITIES				
School grounds			1	
	0	0.0	1	10.0
FORMAL/INFORMAL OPEN SPACES				
Behind church			1	
Bush			4	
Boat launch			1	
	0	0.0	6	60.0
NONE	2	25.0	1	10.0
	8	100.0	10	100.0

* In response to the question "Are there places outside where you can find privacy and 'hideout' with a few friends? Where are they?". Asked while looking at an aerial photo of the whole neighbourhood.

† Area categories are based on place types used by Robin Moore in *Childhood Domain*, 1986, Table 3 p.277, Table 5 p.279.

group just over half of the private places identified were located in formal/informal open spaces. Most of these were in the bush. The other thirty percent were divided between homesites and the school. The main difference between the sites is that the majority of the Crescent Park group chose places away from the homesite and in particular chose informal open spaces. This may be explained in part by the fact that the children in Crescent Park are slightly older and therefore may desire slightly more independence. They had voiced a stronger emphasis on the impor-

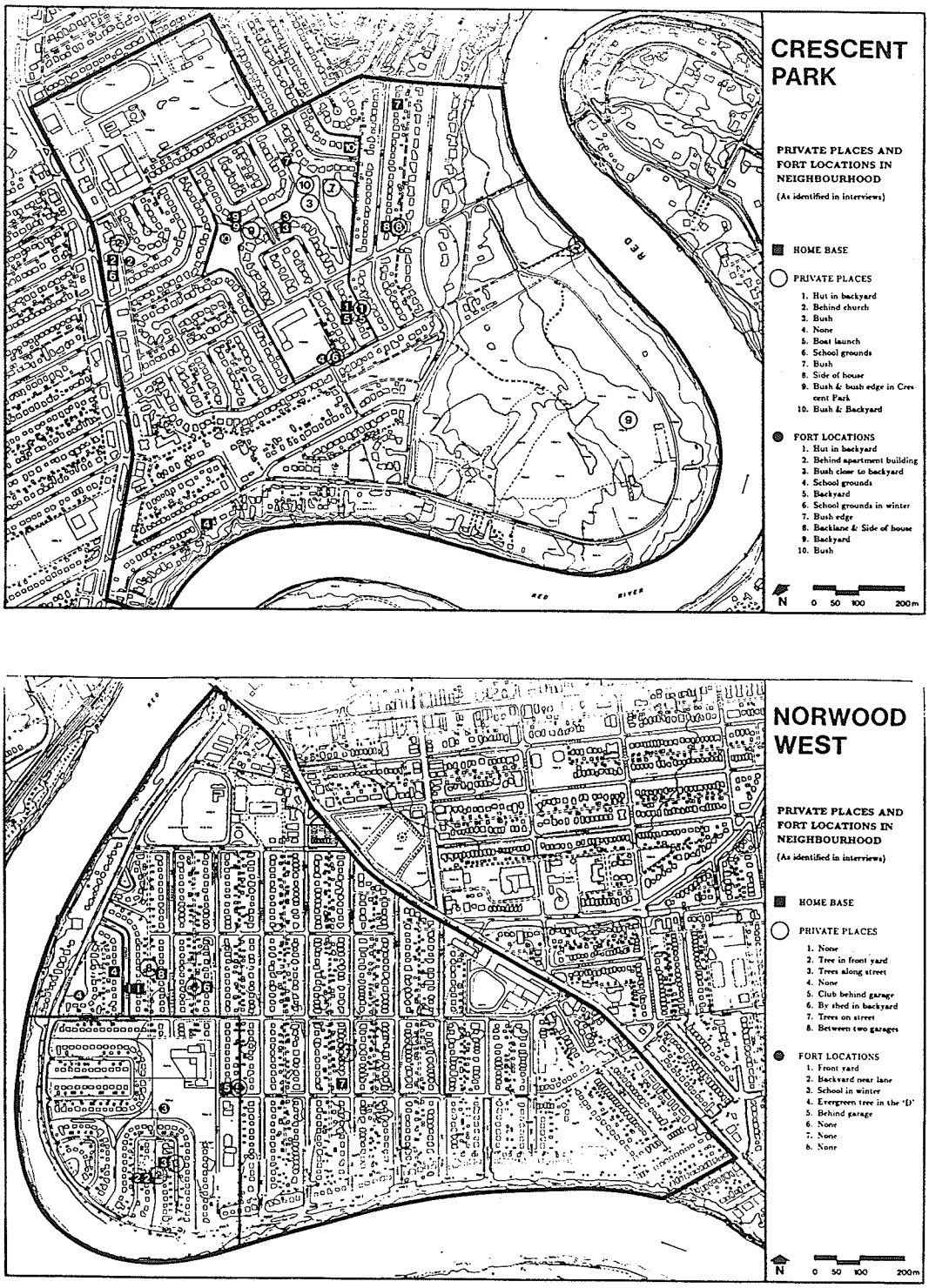


Figure 35: Maps showing the locations of private places and forts in Norwood West and Crescent Park identified by the children in the interviews.

tance of privacy and had also responded that they used their private places more often than the Norwood West group. The other aspect to consider is whether the open spaces in Norwood West are suitable for finding private places. If the secluded quality the children mentioned as making a place private is considered then the open spaces in Norwood West are less satisfactory when compared to the bush in Crescent Park. The Monkey Trail area would have a somewhat similar quality to the bush, but it is narrow and used a lot by children on bikes. It is also out of bounds for some children. When asked what they did in these private places the majority from both sites responded sit and talk, while others played games and rode bikes.

For both sites, the majority of the forts were built on homesites, followed by informal open spaces and school grounds (Table 10). Everyone in the Crescent Park group had built or found a place for themselves whereas in the Norwood West group three of the eight had never established a special spot for themselves. It is interesting to note on the maps that in only three cases in Crescent Park and one in Norwood West do children identify the same place for both private place and fort location. One would have thought they would consider their fort a private place, but maybe they are too close to home in most cases. There were only two children in Norwood West and one in Crescent Park who built their forts where they did because it was a private space. When the reasons for the fort locations are examined (Table 11) privacy is only one out of five reasons. The overiding reason for building the forts close to home in Crescent Park was so they would be safe from vandalism. Another influence seems to be parents who suggested building close to home. The fort location is therefore not always the most private place, especially as most are located on the homesite.

When asked if getting away from adults was important the majority in both study groups thought it was "sometimes" or "most of the time". More of the Crescent Park group answered the latter than the Norwood West group. To better understand the relation between children this age and adults, they were first asked if adults' presence influenced how they use an open space. In both groups the answers were almost evenly split between yes and no. When asked if adults' presence influenced where they play the majority of the children in Crescent Park felt they

Table 10: Fort* locations in neighbourhood identified by children**

†FORT LOCATIONS	NUMBER OF CHILDREN			
	Norwood		Crescent	
	No.	%	No.	%
Homesite	3	37.5	4	40.0
Street and Associated Space	0	0.0	1	10.0
Institutions/Community Facilities	1	12.5	2	20.0
Formal/Informal Open Spaces	1	12.5	3	30.0
None	3	37.5	0	0.0
	8	100.0	10	100.0

* Forts are built or found spaces.

** In response to the question "Have you ever built anything like a a fort or created your own special place? Where? Asked while looking at an aerial photo of the whole neighbourhood.

† Area categories are based on place types used by Robin Moore in *Childhood Domain*, 1986, Table 3 p.277, Table 5 p.279.

did whereas the majority of the Norwood group felt they did not. Therefore, it seems as though most of the children in both study groups enjoyed getting away from adults sometimes, but they did not really influence where most of the children played.

When asked if they liked to spend most of their time within view of their house, about sixty percent in both groups said that they did. When asked if they liked to spend most of their time out of view of their house fifty percent from both groups said yes with more in the Crescent Park group saying sometimes and more in the Norwood West group saying no. When asked if they prefer to spend most of their time out of view of any houses the majority in both groups said no. Therefore, both groups have a similar preferred visual relationship with their home. Being out of view of any of the houses was generally not desired by most. Most of the children in both groups thought that the adults watched the open space area 'a little'. Although this may seem odd that the children could feel equally watched in a heavily vegetated open space at the back of the houses as they could in a grassed open space at the front of the houses, the sense of community is strong in both areas. As an intruder during site observations, one has the same sense of trespassing for

Table 11: Why children built their forts where they did*

PLACE	REASON	MENTIONS			
		Norwood		Crescent	
		No.	%	No.	%
	SAFE FROM VANDALISM				
Backyard	safer, nobody will wreck it			1	
Backyard/Bush	thought no one would destroy it			1	
Backyard	nobody can go in and wreck it			1	
Backlane/Side of house	safer			1	
Backyard	nobody will wreck it	1			
		1	20.0	4	40.0
	PARENTS SUGGESTION				
Backyard	Mom wanted fort close to home			1	
Backyard	Mom thought it a good idea	1			
		1	20.0	1	10.0
	PRIVACY/AWAY FROM OTHERS				
Bush	it is farther away from home			1	
The 'D'	would be a private space	1			
Backyard	more private	1			
		2	40.0	1	10.0
	NATURAL RESOURCE				
Bush	biggest and strongest tree low enough to climb			1	
		0	0.0	1	10.0
	OTHER				
School	it is something to do at school in the winter			1	
Frontyard	not enough room in the backyard	1			
		1	20.0	1	10.0
		5	100.0	10	100.0

* In response to the question "Why did you build it(your fort) there?"

in both areas even though both are public property.[2]

4.4.1. Summary

- A quiet area with the complete or partial absense of other people, except maybe for a friend, seems to provide the basics for a private place. High use areas,

[2] Although the author felt more watched in the open space in Norwood West, the author was never approached by adults to find out what she was doing, as she was in Crescent Park.

therfore, are not necessarily more important to children than low use areas. The latter provide children with private areas where their play can be more introspective and self directed.

- Having privacy and getting away from adults sometimes was very important to the majority of the children.
- The environmental character of the formal/informal open spaces in the Crescent Park neighbourhood were more capable than the open spaces of Norwood West of providing the basic requirements for a private place away from the homesite as identified by the children.
- The majority of forts were built on homesites or in close proximity. When the backyard backed on an informal open space the area just beyond the fence was chosen. When this was not available children seemed to chose places within the boundary of the homesite. Safety from vandalism and their parents' desire to have them nearby influenced the choice of site.
- There seemed to be a preferred visual relationship between the children and their homes. Most liked to spend some of their time in view of their home but almost equally as much time out of view of their home. Most did not like to be out of view of any houses.
- Sense of community around an open space seemed more important than the type of vegetation structure in giving these children a sense of having adult surveillance of the area close to the houses.

4.4.2. Design Implications

- Informal open space close to home is a means of providing an area where children can get away from other people as illustrated by the number of children who chose the Bush as their private place.
- The fringe area of the homesite seems particularly well liked for fort building. Having an informal open space adjacent to the child's backyard provides a semi-public space just behind the property which provides just enough independence and protection.
- Having interesting open spaces close to home is important, since elementary school children like to spend about half of their time within view of their house.
- Establishing a possessive and protective attitude by the home owners towards

the open space, would help alleviate some of the saftey concerns about informal open spaces.

4.5 Places of Symbolic Ownership

To better understand why children develop a sense of symbolic ownership for some areas and not for others, the two study groups were first asked whether they had a sense of ownership for the place they identified as the area of interest in the neighbourhood (Table 12). In both sites all who had identified homesites and the majority of those who had identified formal/informal open spaces felt they could call the place their own. Of the five children who had identified informal places (the bush and the monkey trail) as the most interesting, four felt it was a place they could call their own. Out of the four who had identified more formal open spaces such as the 'D', the neighbourhood park, Crescent park, and the boat launch, only two felt that they could call them their own. No one who had identified schools/community facilities felt that they could call them their own. Therefore, it would appear as though next to homesites informal open spaces are more likely to be chosen as places of symbolic ownership which agrees with research findings by others.

When specifically asked to identify areas they could call their own in the detailed area the differences in the two groups feelings for symbolic ownership beyond the homesite are seen more clearly (Table 13). In the Norwood West site no one could identify a place they felt they could call their own in the detailed study area (which excluded homesites). In constrast, half of the Crescent park study group could identify places they could call their own. In four out of five of these responses the bush was identified. In all cases the reason for the children's sense of symbolic ownership was the that the area was not used much by other people.

This secluded quality is reinforced with the answers the children gave to the question "what makes you feel a place is your own?" When asked if distance from the houses makes a difference only forty percent said yes in the Crescent Park group and all said no in the Norwood West group. When asked if being out of sight of the houses made a place feel more your own again most did not think this was the reason. Only when the children were asked to give any other reason as to what makes a place feel as though it belongs to them was a better understanding possible (Table 14). The majority mentioned that the place must be private and/or an area

Table 12: Places of interest children felt they could call their own*

†AREA OF INTEREST	NUMBER OF CHILDREN			
	Norwood		Crescent	
	No.**	%	No.**	%
HOMESITE				
Backyard	1			
Backyard (fort)	1			
Backyard	1			
Backyard			1	
	3	37.5	1	10.0
SCHOOLS/COMMUNITY FACILITIES				
Rowing Club	0			
Community Club	0			
Golf Course			0	
	0	0.0	0	0.0
FORMAL/INFORMAL OPEN SPACE				
Monkey Speedway	1			
The 'D'	0			
Neighbourhood Park			1	
Bush			1	
Crescent Park			0	
Boat Launch			1	
Bush			0	
Bush			1	
Bush			1	
	1	12.5	5	50.0
	8	100.0	10	100.0

* In response to the question "Is it(your most interesting area in the neighbourhood) a place you feel you can call your own?"

† Area categories are based on place types used by Robin Moore in *Childhood Domain,* 1986, Table 3 p. 277, Table 5 p. 279.

** The answer 'yes' or 'maybe' are grouped together as affirmative answers.

not used much. Some specified particular environmental qualities such as being quiet, or a place to sit and think. Another aspect that seemed relatively important was a sense of personal attachment to the place. This was often developed by personally finding or building the place or by just knowing it well, and therefore

Table 13: Places children felt they could call their own in detailed area*

PLACE	REASON	NUMBER OF CHILDREN			
		Norwood		Crescent	
		No.	%	No.	%
FORMAL/INFORMAL OPEN SPACE					
Bush	area not used much			1	
Small open space	area not used much except by me			1	
Bush (sm opening)				1	
Bush (fort)	area not used much			1	
		0	0.0	4	40.0
SCHOOLS/COMMUNITY FACILITIES					
School (Special spot)	nobody plays there much			1	
		0	0.0	1	10.0
NONE IN STUDY AREA					
Backyard	because I own it	1			
Backyard	it is part of our property	1			
Backyard (fort)	it is my club, I made it	1			
No place	not sure	4		5	
No place	don't own it	1			
		8	100.0	5	50.0
		8	100.0	10	100.0

* In response to the question "Are there places in this area you feel you can call your own? Where are they? Why is that?"

† Area categories are based on place types used by Robin Moore in *Childhood Domain*, Table 3 p.277, Table 5 p.279.

feeling comfortable there. Personal freedom (not being told what to do) was only mentioned twice but this may hve been implied in responses such as being away from other people.

4.5.1. Summary

- The bush, an informal open space in Crescent Park, was the most identified area in which children had feelings of symbolic ownership beyond the homesite.
- The formal/informal open spaces of Crescent Park supported better than the open spaces in Norwood West the feeling of symbolic ownership. No one in

Table 14: What children thought makes a place feel your own*

REASONS	MENTIONS			
	Norwood		Crescent	
	No.	%	No.	%
PRIVATE/AREA NOT USED MUCH				
private spot	2			
a place where nobody casually walks through			1	
be by yourself			1	
some place where I can be alone with my friends			1	
to be alone with someone			1	
	2	22.2	4	36.3
PERSONAL ATTACHMENT				
found it myself	1			
built in myself	1			
feel comfortable there	1			
know the place well			1	
	3	33.3	1	9.0
PERSONAL FREEDOM				
nobody asking what you are doing			1	
nobody there to tell me where to play and what to do			1	
	0	0.0	2	18.0
SPECIAL ENVIRONMENTAL QUALITY				
big and open			1	
a place where you can sit down and think			1	
quiet	1			
outside away from area around houses	1			
	2	22.2	2	18.0
NOT SURE	2	22.2	2	18.0
	9	100.0	11	100.0

* In response to the question "What makes you feel a place is your own?"

Norwood West could identify a place they felt they could call their own in the detailed study area, which excluded homesites.

- The children's main prerequisite for creating a sense of symbolic ownership was that the area was not used much by other people. The establishing of a personal connection with a place (i.e. finding it, building it) also seemed important in generating symbolic ownership. Other qualities were that the place be quiet

and provide personal freedom.

4.5.2. Design Implications

- The main criterion for establishing symbolic ownership in children is that the area not be used much by other people. In this way, children can discover and claim areas for themselves. Informal open spaces, such as the bush, seem to generate symbolic ownership in elementary school children.
- The area has to be flexible enough in its structure to allow some manipulation of elements to generate a sense of personal attachment (i.e. building forts).

4.6 The Children's Recommendations

The responses to the question "what could be done to make the outside areas here better for kids" resulted in each study group expressing very different preferences. Ninety-one percent of the total responses by the Norwood West group expressed a strong desire for more play equipment or sports facilities. In contrast, the only twenty percent of the total responses by the Crescent Park group were concerned with play equipment. They were more interested in increasing the natural resources in the area, with fifty-three percent of the responses being concerned with this. It is interesting to note that natural resources were not mentioned at all by the Norwood West group. The type of response given by each group seems to suggest that these children's ideas were based on what they already knew. The Crescent Park group was expressing a desire for more natural features and parks in an area that is well endowed with parks when compared with other neighbourhoods in the city. Most of the children's suggestions are actually alterations or additions to already existing natural features. In a similar way, the Norwood West group was adding play equipment to open spaces which already emphasize recreational activities.

4.6.1. Summary

- Children's ideas for play environments seemed to be strongly shaped by what they already knew.
- Complex informal areas are largely important to just those who are exposed to them. In Crescent Park, where the children were exposed to both open areas designed primarily for sports and more complex informal areas, the majority of

children spoke of natural improvements not sport facilities. In Norwood West, where the children were exposed to a less diverse environment, all the children spoke of play equipment and sports facilities.

4.6.2. Design Implications

- The availablity and accessibility of diverse play environments is needed to ensure diverse play experiences.

Table 15: What children would add or change to improve the area for kids*

CHANGES OR ADDITIONS	MENTIONS			
	Norwood		Crescent	
	No.	%	No.	%
NEW PLAY EQUIPMENT OR SPORTS FACILITIES				
have more things to do	1			
a place to skate board	1			
make the area safer	1			
make a playground with lots of fun things—like the Ex	1			
maybe have a merry-go-round	1			
have organized games to play	1			
have a skate board ramp	1			
have a bike jump	1			
build a baseball statium	1			
have a place to skate board	1			
have more play structures			1	
build a huge play structure			1	
a new play structure			1	
	10	91.0	3	20.0
STRUCTURES OR HARD LANDSCAPING				
re-do sidewalks so they are smooth	1			
pave trodden paths for bike paths			1	
build warm-up places in the parks			1	
	1	9.0	2	13.3
NATURAL RESOURCES/WILDLIFE				
a stream with logs and frogs			1	
have more nature parks with birds, flowers and trees			1	
have a little pond with ducks to feed			1	
have a game farm where you can feed the animals			1	
more trees behind the school			1	
have more parks			1	
more small clearings in the bush			1	
	0	0.0	8	53.3
PEOPLE				
prevent teenagers from wrecking things			1	
no kissing outside the highschool			1	
	0	0.0	2	13.3
	11	100.0	15	100.0

* In response to the question "What could be done to make the outside areas here better for kids?"

CHAPTER FIVE

Summary and Conclusions

Based on the literature review, site observations and structured interviews with two small study groups some patterns of use and user needs become apparent for elementary school children. This chapter will summarize the findings, from this study and some previous studies, as they relate to the basic question of what environmental characteristics contribute to a supportive play environment close to home. This is based on children's opportunities for social interaction, exploration, environmental interest, privacy and symbolic ownership.

5.1 Areas of Social Interest

In this study it was found that the most popular 'hangout' areas were playgrounds or structures within a park environment. Here the children met other kids with whom they could play games and sports as well as having activities to watch. Community facilities and schools also acted as 'hangouts', but to a much lesser extent.

Robin Moore reached similar conclusions in his investigation of three English neighbourhoods. He found that playgrounds and play equipment are important to the children because they provide "clearly identifiable pieces of local turf where they can hang out and meet each other."[1] The most popular equipment areas, however, were not found in segregated locations but in park settings. Moore concluded that "the location and character of the landscape surrounding each playground or equipment area is just as important as the design of the apparatus itself."[2] It seems as though the children in both studies found the playground an important meeting place and point of departure for other activites if placed within a more broadly diversified playscape. As the Delft experience illustrates, there needs to be a change from play objects to play environments.

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[1] Moore, *Childhood's Domain*, p. 110

[2] Moore, Ibid p. 114

5.2 Exploration and Areas of Environmental Interest

In this study, when children were asked to identify the most interesting area in the neighbourhood, not one child from either group chose the schoolgrounds despite their elaborate play structures. In Norwood West, none of the children chose the riverside park either. Why is it that the areas provided for children's play are not identified by them as places of interest? Part of the answer could be gained by just looking at the photographs of these places. When compared with smaller formal open spaces and particularly the informal open spaces in the area, the environmental simplicity of the school grounds and riverside park is clearly evident. The varied topography and vegetation along the river banks and in the bush are understandably more appealing places for play.

As Robin Moore discovered in his study as well, intimate open spaces larger than 'fronts' were well used compared to big windy playing fields. The use of the 'D' by children in Norwood West and their absense from an adjacent space, the riverside park, are a prime example of this preference for more intimate, diversified spaces. Likewise, the open spaces in and around the bush were used more by children than the adjacent open spaces of the school grounds and community centre in Crescent Park. In both neighbourhoods, the school grounds have been designed with a limited view of play as merely gross motor activity or as the playing of games.

Exploration is the key activity that seems supported by the vegetation structure in the informal open space of the bush, but seems inhibited by wide open areas of grass. It is not surprising that the areas of environmental interest are usually informal open spaces when they are available. Their complex vegetation structure stimulates interest and exploration because of their visual uncertainty, and as one child described it, the bush is 'like a maze.'

There is a spatial difference between most formal open space and most informal green space. The word 'open' in the term 'open space' is indicative of the character and approach taken in most of their development. In most formal open spaces plants are placed in space. The emphasis on individual species at the expense of plant communities completely denies any spatial development. In order to create spaces, there must be solids to define them. Most informal areas are made up of plant communities, not specimen planting, and therefore have a more interesting spatial

structure. Environmental interest is stronger when plants enclose and manipulate spaces, views and transitions resulting in a spatial complexity not found in open grass areas or treed areas without an understory. Complexity is also created in informal open spaces with an understory because the natural vegetative diversity is allowed to flourish. This vegetative diversity supports new play opportunities by providing many levels of interest, and therefore, results in one "always seeing something different", as one child put it.

It is interesting to note that the understory and microhabitats within wooded areas, which help create spatial and visual interest, also help support wildlife, which is an additional interest for children. In a study by Nancy Tilghman,[3] she makes a few management recommendations which are equally applicable to play environments. For example, she recommends that the "maintenance of natural vegetation in the shrub layer can provide an increased number of niches for an increase in the number of bird species."[4] She also recommends that woodlands have a variety of microhabitats, such as small scattered openings, some form of water in or nearby, patches of evergreens, and wetland areas within the woods that also increase the number of birds. These recommendations for wildlife fit well with the children's own recommendations for some of the informal open spaces in Crescent Park. In fact the recommendations for small openings in the bush and the inclusion of a water feature were actually made by some of the children.

In this study, it was found that the use of informal areas of trees and shrubs was dependent on its availability and accessibility in the neighbourhood. Use of these areas was noticeably higher in Crescent Park where tree and shrub areas were readily available. Small green areas close to the home with diverse vegetation offer a different experience not found in the large open grass areas that predominate most suburban residential neighbourhoods. These areas should be designed with enjoyment and use of the natural environment in mind where children can intimately discover nature for themselves and generate self-devised challenges.

In the Crescent Park study group those who had easy access to informal areas

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[3] Nancy Tilghman, "Characteristics of Urban Woodlands Affecting Breeding Bird Diversity and Abundance," *Landscape and Urban Planning*, Vol. 14, (December, 1987), p. 481–495.

[4] Ibid, p. 493

expressed an appreciation and interest in the small scale wildlife present (birds and squirrels), as well as a desire to have more wildlife (such as ducks and frogs). The latter wildlife mentioned leads to another desired feature—water. Water, as others have noted, is very attractive to elementary school children, but is probably the least provided amenity. The point to stress here is that small scale water features are sufficent and need not be considered a major safety hazard.

The development of a diversified natural edge in some areas should be considered instead of just letting maintenance practises dictate its character. The bush edge was mentioned as a place of interest by some in the Crescent Park study group. It is also an important place for wildlife. In the Delft experiment, they found that in order to encourage free movement and use of the entire area the handling of the edge needed special attention.

5.3 Private Areas

Being able to have privacy outside was very important to the study groups. What was particularly interesting was the difference between the two study groups in their choice of private places. Considering that both groups identified similar qualities for private places (quiet areas with complete or partial absense of other people except maybe for a friend), the actual difference between the identified private places is then particularly interesting. In Norwood West, half of the private places identified were located on homesites between or behind garages and sheds, and under some street trees or coniferous tree in the front yard. These private places sound reminiscent of Clare-Cooper's complaint that if the 'clipped lawn' aesthetic persisted children would have to find hiding places "under backstairs, beneath the juniper bushes and behind the garbage shed." The homesite appears to be the only readily available quiet personal place. In Crescent Park, however, children seemed to have an alternative option for quiet places in the formal/informal open spaces. In this group, formal/informal open spaces are the pre-dominant choice for private places. The bush is particularly well liked by those living in the immediate neighbourhood surrounding this informal open space. Informal open spaces close to home, therefore, are a means of providing an area where children can escape and are free to play, sit and think or talk with friends.

This informal open space was used for fort building as well, but was less popular

than the homesites. Safety from vandalism as well as parents' desire to have the children nearby influenced the children's decision to build on homesites or in close proximity. A desireable relationship for children is a reasonable distance from the home but not too far away. When the backyard backs onto an informal open space the area just beyond the fence seemed particularly well liked. This fringe area of the homesite provides just enough independence and protection.

5.4 Symbolic Ownership

In this study informal open spaces were found to be important areas for fostering a sense of symbolic ownership. None of the children interviewed could identify a place they felt they could call their own besides homesites in the neighbourhood of Norwood West, which really has no accessible informal areas. In contrast, the bush in the Crescent Park neighbourhood was choosen by almost half of the study group as a place they could call their own. This sense of symbolic ownership for informal open spaces had also been mentioned in the study by Berg and Medrich. They found that informal open spaces appealed to children because their unkept appearance communicated a neutral ownership. The reason given by the children in this study as to why an area evoked a sense of symbolic ownership, was that the area was not used much by other people. Whether it is the level of maintenance or the level of use by other people, or a combination, informal open spaces foster a sense of symbolic ownership in children mainly because they are perceived as places to which no-one else lays particular claim. What is important is that children perceive that they have a certain level of control and privacy within the exterior environment where they can do as they please. The area has to be flexible enough in its structure to allow some manipulation of elements to generate a sense of personal attachment. More thought is needed for the creation and/or preservation of environments in which children can 'find' or 'create' their own micro-settings for play. The framework, therefore, of the play environment must include within and out of view of the home secluded areas in which children feel they can potenially develop some personal control.

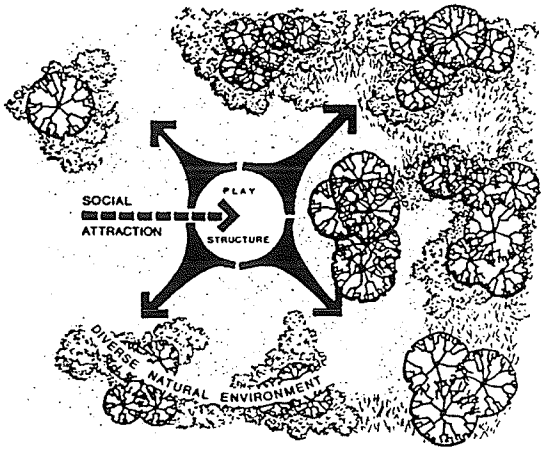
CHAPTER SIX

Guidlines for Children's Play Environments

The purpose of these guidelines is to make suggestions for open space design in the planning of new housing developments, as well as for transforming existing areas. These guidelines are directed towards improving the landscape particularly for elementary school children.

6.1 Development of Areas of Social Interest

- Include play structures in the neighbourhood open preferably in a park settings where other activities can occur. For elementary school children they are identifiably places for them and become places of social interest—hangouts. School grounds could also be developed more as areas of social interest if the grounds were made more interesting. Play structures should not be sited as isolated objects in a barren field. The relationship between the play structure and play setting seemed successfully integrated in Crescent Park.



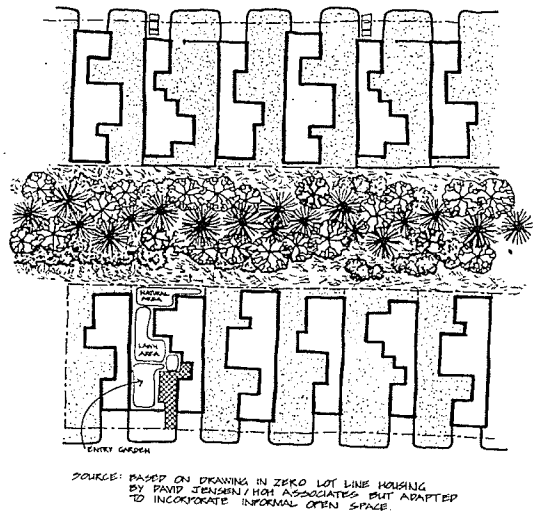
- Playgrounds need to be located in or adjacent to a more broadly diversified landscape. These diversifed natural environments could support wildlife,

contain bike trails and provide trees and bushes for hide and seek.

6.2 Development of Exploration and Environmental Interest

6.2.1. Neighbourhood Development

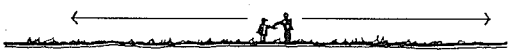
- Small informal areas with diverse natural vegetation need to be preserved and incorporated into housing developments. Where no informal area exists, one should be created and integrated into a housing development based on projects such as Delft in the Netherlands or Oakwood in England.
- These informal areas should be made accessible to elementary school-age children, by locating them close to homes. It would be best if these areas were developed as extensions of back yards. The old idea of pocket parks or common land could be revived as informal open spaces.
- These small informal areas should be designed with the enjoyment and use of the natural environment in mind. Preferably there should be a water feature and habitat for small wildlife.
- Residential areas should be designed to accomodate bike riding on both dirt and paved surfaces. Paths running through informal open areas, with their varied vegetation and topography, create interesting areas for bike riding.

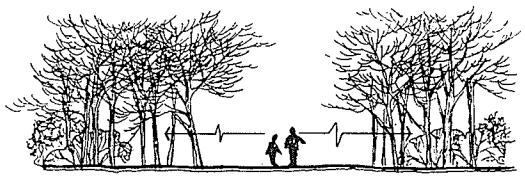


SOURCE: BASED ON DRAWING IN ZERO LOT LINE HOUSING BY DAVID JENSEN / HOK ASSOCIATES BUT ADAPTED TO INCORPORATE INFORMAL OPEN SPACE

6.2.2. Visual and Spatial Complexity

- Open spaces should be developed on a detailed scale, with an emphasis on intricacy and complexity. The ground surface, made up of the herbaceous and shrub layers, is a critical component in perceived visual and spatial complexity. Most informal open spaces, therefore, are perceived as being more complex than park-like settings where the understory has been removed. This vegetative diversity supports play opportunities by providing many levels of interest.



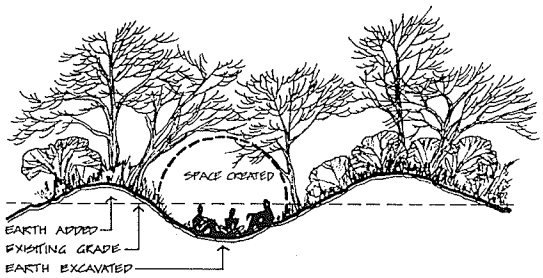


- Vegetation should be used more frequently in environments used by children. Not just trees, but shrubs and dense masses of vegetation are needed to provide opportunities for hide and seek, to add excitement to bike riding, and to provide areas for wildlife exploration. Wide open areas are not interesting and are all too plentiful.

- It is desireable to increase or develop sheltered intimate spaces. A sense of enclosure through the use of vegetation is needed to develop these spaces ('outdoor rooms'). These can be created by carving spaces of various sizes out of the landscape, or by surrounding an open space with a well defined vegetative edge. The vegetation needs to be

used more as a structural element in the external environment.

- To encourage exploration as an activity, spatial complexity must be increased. Environmental interest is stronger when vegetation is used to manipulate perceptions (of spaces, transitions and views).
- Open space design needs to incorporate a degree of uncertainty and the potential of stumbling upon interesting discoveries.
- Designs should use varied topography to develop interest in linear routes and interesting spatial qualities. Mounds along trails are ideal for bike riding. A plain field can be articulated by depressing or elevating a portion of the ground plane. Small mounds or hollows can define identifiable places for children.



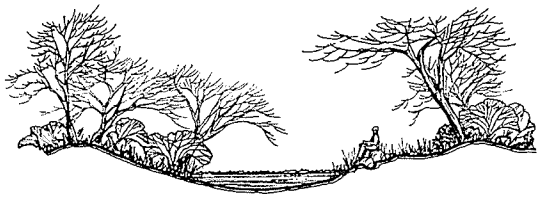
- Topographical features should also be used to develop micro ecotones creating more variation in the vegetation and landscape elements. Low-lying areas could be used to create small shallow ponds and/or wetlands.

6.2.3. Designing for Wildlife

- Informal/formal open spaces should be developed with wildlife as well as people in mind. Small wildlife is of particular interest to children, but designing

for wildlife also means diversifying the open space. It is this shared common interest in diversity that needs to be recognized.

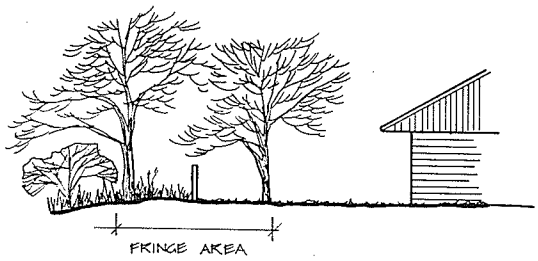
- To increase the number of bird species in a woodland, the shrub layer needs to be maintained or developed. A varied composition of plants and vegetative structure attracts more wildlife than a tree stand with no understory.
- A woodland is more attractive to wildlife if the edge is irregular and has a good border of shrubs, forbs and saplings.
- The inclusion of microhabitats, such as small scattered openings, patches of evergreens, some form of water and/or wetland features, will also increase the number of birds and other small scale wildlife.
- A linear configuration is well suited to songbirds because of the increased edge area. Block areas of woodland need to be opened up to create more edge habitat.
- Tying the open space to adjacent open spaces through a connective open space system would be beneficial for both wildlife and children. Linear routes such as bike trails could be developed as part of this system.
- The challenge for development is to



find a balance between protection of wildlife and public access to it.

6.3 Private Spaces

- Quiet areas, little used by people, need to be incorporated into open space development. It is important to note that a low level of usage does not necessarily mean that an area is of little value.
- Informal open spaces close to the home are a means of providing an area where children can escape from other people.
- The fringe area of the homesite seems to be particularly well liked for fort building. Having an informal open space adjacent to the child's backyard provides a semi-public area just beyond the property which provides just enough independence and protection.



6.4 Symbolic Ownership

- Areas that are not used much by people and have an unclaimed quality often create a sense of symbolic ownership in children. They have to feel that they have personal control over a space. Informal open areas, such as the bush, are perceived by children as neutral areas in which they can establish their own sense of ownership.
- Associational qualities increase the sense of ownership. Finding or creating a space on their own is important

to children.

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Appendix A

SURVEY DETAILS

Department of Landscape Architecture,
123 Bison Building,
University of Manitoba,
Winnipeg, Manitoba.
474-9840

May 11, 1987.

Dear Parent,

This note is to ask your permission to allow your child to express his/her opinions in a study to be conducted at school about children's play environments.

I am a Landscape Architecture student at University of Manitoba. For my master's thesis I am studying what children think of areas near school as play environments. Too often the likes and dislikes of the primary users -- the children -- are overlooked by adults.

The study will involve the children answering some questions "one on one" within the school. The questions will focus on where they like to play, why, and specifically what features attract or discourage children's play in the area. The length of the discussion should be about 10-15 minutes per student. There is no need for the child to identify him/herself and all responses will be kept confidential. The only personal information I will want to know is their age and whether or not they live within the neighbourhood.

My findings will be tabulated and will be used to help establish some design guidelines for neighbourhood open spaces with children in mind. A copy of my thesis will be made available at Nordale School for those parents interested in the results of this study. I would really appreciate your co-operation to make the study a success. If you have any questions or concerns feel free to call me at the department's number, or at 261-0736 in the evening.

Sincerely,

Anita Green.

SURVEY TO ASSESS RESIDENTIAL OPEN SPACES AS PLAY ENVIRONMENTS

age : ___ yrs.

gender : male female

where he/she lives :

NEIGHBOURHOOD

1. Do you live in the neighbourhood shown on this map?

2. How well do you know the open spaces in this area? (Point them out for them.)

very well
fairly well
not very well

3.a) Are there places in these open spaces for large groups (>5) to do things? Yes No

b) Where are they?

4. What are they used for?

5. How often do large groups use these spaces?

often (more than once a week)
sometimes (once every week or two)
rarely (once a month)
never

6.a) Are there places in the open space for small groups (5 or >) to do things? Yes No

b) Where are they?

7. What do small groups use them for?

8. How often do small groups use these spaces?

often
sometimes
rarely
never

9. Are there places where you and your friends stand around and just watch what is happening? Yes No

10a) What goes on here that is of interest to you?

b) Where would you hang around in this area ?

11. How often do you and your friends use these spaces?

often
sometimes
rarely
never

12. How often do you use the following areas for play?

a)	streets/backlanes	O S R N
b)	large open areas of grass	O S R N
c)	areas of trees and shrubs	O S R N
d)	small clearings in areas of trees and shrubs	O S R N
e)	paths	O S R N
f)	your backyard	O S R N

13. When you are outside what makes a place private? (private in the sense of feeling free of rules; being more or less able to do as you like)

14. Is it important for you and your friends to have privacy sometimes?

yes
no

15a) Are there places outside where you can find privacy and "hideout" with a few friends? Yes No
b) Where are they?

16. How often do you use these spaces?

often
sometimes
rarely
never

17. What do you and your friends do in these places?

18a) Where is the most interesting area for you in your neighbourhood?
b) Why is it the most interesting?

19. What do you do there?

20. Is it a place you feel you can call your own?

yes
no
maybe

21a) Do you cruise or walk around the neighbourhood to find something to do? Yes
No

b) If yes is it - Often Sometimes Rarely

22. Is this on foot or on a bike most of the time ?

foot
bike

OPEN SPACE

23. Do you live in or close to the area shown on this map?

24. Is it hard to find things to do close to home?

yes
no

25. How often have you used or passed throu'h the open space in the last week?

not at all
3 times or less
3 - 10 times
more than 10 times

26. How much time per visit do you normally spend when you pass through or play in the open space?

not at all
less than 5 min.
5 - 15 min.
15 - 30 min.
more than 30 min.

27. What do you do there? Is it...

a) a place to explore Yes No
b) a sort of private place to talk with friends Yes No
c) a place to pass through Yes No
d) a place of little importance to you Yes No

28. Which is do you enjoy and use more :

a) paths - paved O S R N
b) - trodden O S R N
c) open spaces - grassed areas O S R N
d) - tree & shrub areas O S R N
e) Are both paths and the areas with plants equally important? Yes No

f) If not why?

29a) Where is the most interesting area in the open space for you?

b) Why is it the most interesting?

30. What do you do there?

31a) Do you use this space for other things?

yes
no

b) What else?

32. Are there places in this area you feel you can call your own? Where are they?

33. Why is that?

34a) Have you ever built anything like a fort or created your own special place?

b) Where?

35. Why did you build it there?

36. I prefer to spend most of my time

a) within view of my house and neighbouring houses Y N
b) out of view of my house and neighbouring houses Y N
c) out of view of any houses Y N

37. Do you think the people in the houses watch the kids in the open space?

very much
a little
not much at all

38. Is getting away from adults outside important to you? (Adults being parents or people of authority)

not at all
sometimes
most of the time

39. Does having adults around influence what you do ?

yes
no
not sure

40. Does their presence influence where you play?

yes
no
not sure

41. What makes you feel a place is your own?

a) distance from the houses
b) being out of sight of the houses
c) other

GENERAL

42. What could be done to make the outside areas here better for kids?

Appendix B

NOTES ON METHODS

The following are some suggestions on methodology for future studies:

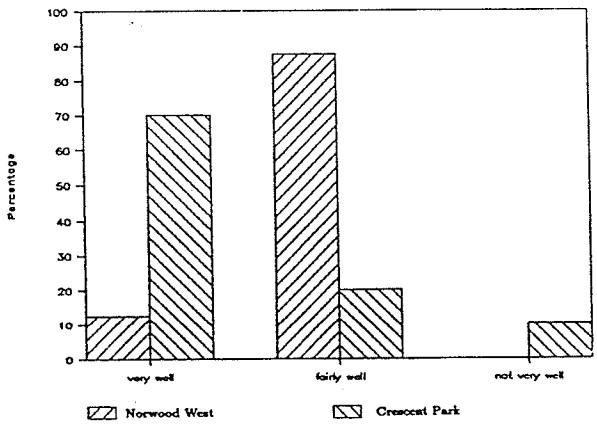
- This study probably would have received a better response from the parents if it had been conducted near the beginning of school instead of at the end of it.
- Although talking is faster than drawing, combining the structured interveiw with a drawing session probably would have been the best. The drawings might have given more insight into the thoughts of children who do not express themselves well verbally. Also as Robin Moore discovered, the children's drawings are rich in details which are often not expressed in words.
- Using a tape recorder worked really well with the structured interviews. None of the children objected to its use nor did it seem to inhibit any of them. The taped conversations provided a verification to what was written, but also a rich record of verbal details of areas that could not have been written down while talking with the children.
- The use of aerial photographs also worked really well and helped spark a real interest with the children. Street names need to be included to help orient the child in the beginning.
- It was useful doing site observations both before and after the structured interviews. The site observations before gave the interviewer a sense of how the area was used and a base on which to ask questions. Site observations after allowed the investigator an opportunity to look at the site with a clearer understanding of how it was used. Working both methods provided a means of checking responses given in the structured interviews.
- The personal contact with each child in a structured interview gives the investigator some assurance that the children understood the questions they were being asked.
- The combination of some open ended questions with questions that had precoded responses worked well. Time is saved both asking and analysising precoded responses. They are also easier in a comparison study. The open-ended questions, however, gave more insight. The combination was important for a balance of responses, but also for the various levels of children's verbal and communication skills.

Appendix C

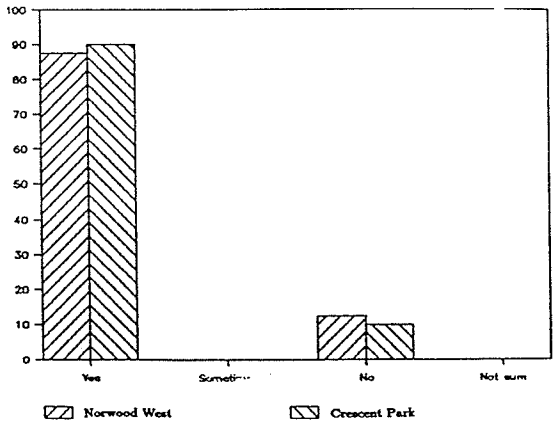
ADDITIONAL RESULTS FROM THE INTERVIEWS

How Well Do You Know the Open Spaces?

(In This Neighbourhood)

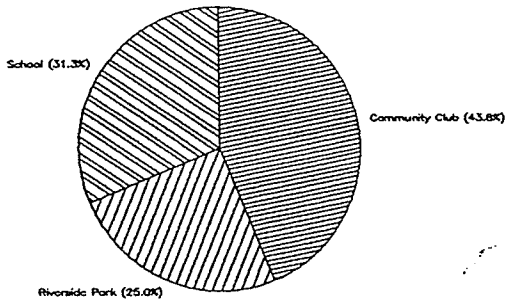


Are There Open Spaces for Large Groups?



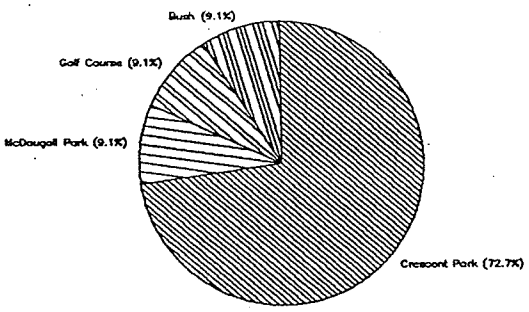
Places Identified for Large Groups

(Percentage of Responses—Norwood West)

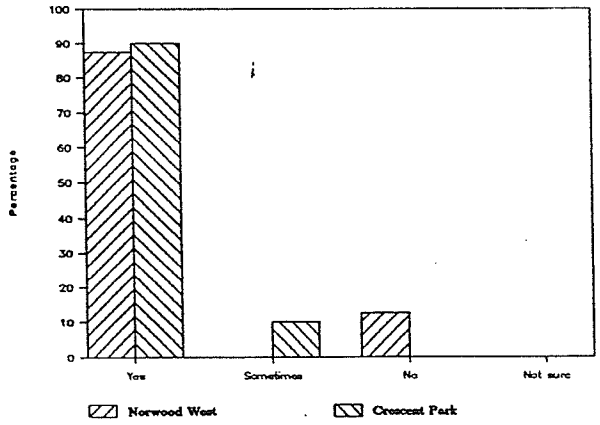


Places Identified for Large Groups

(Percentage of Responses—Crescent Park)

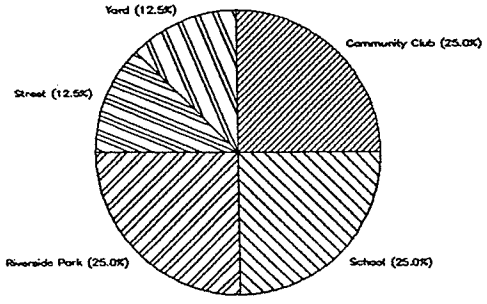


Are There Open Spaces for Small Groups?



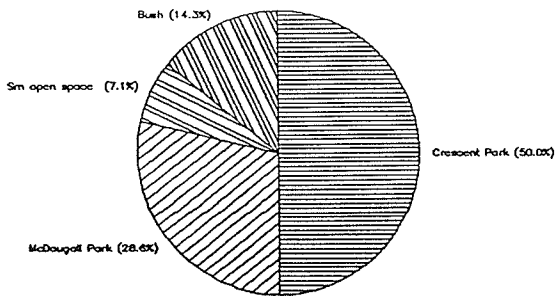
Places Identified for Small Groups

(Percentage of Responses—Norwood West)

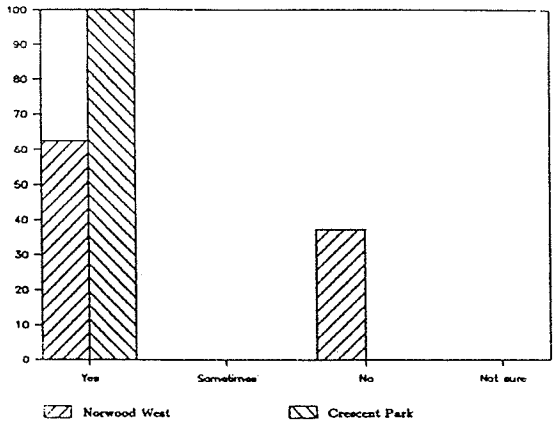


Places Identified for Small Groups

(Percentage of Responses—Crescent Park)

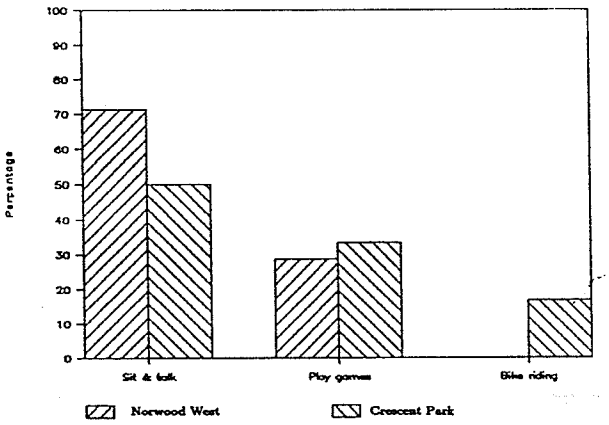


Are There Places to Hang Around and Just Watch What is Happening?



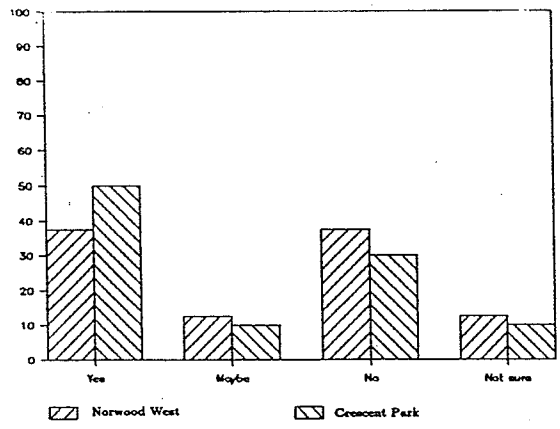
What Do You Do in These Private Places?

Percentage of Responses

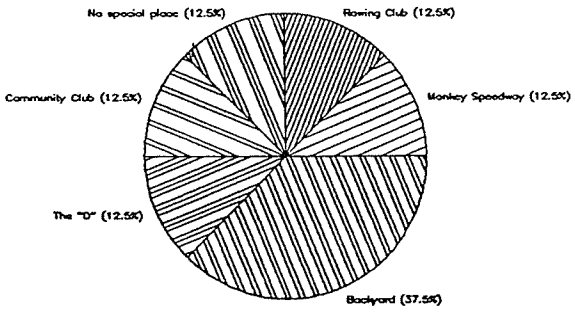


The Most Interesting Area in the Neighbourhood

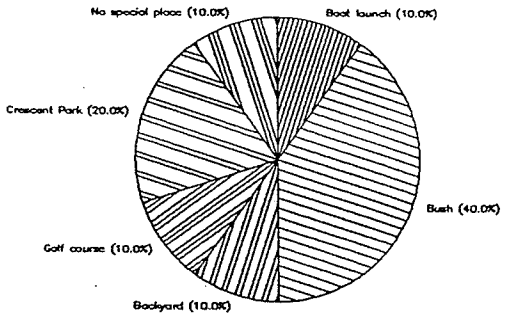
Do You Feel You Can Call it Your Own?



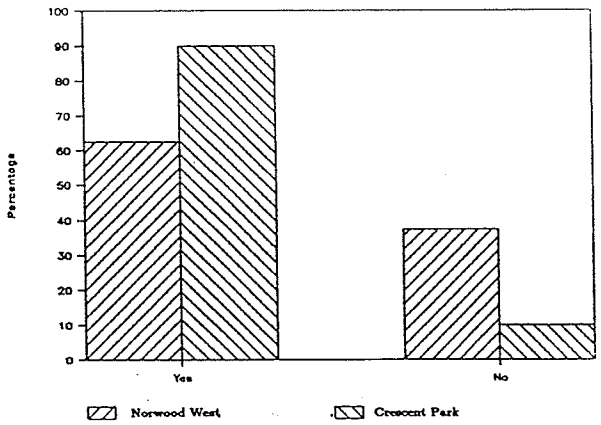
Where Is the Most Interesting Area in the Neighbourhood? (Norwood West)



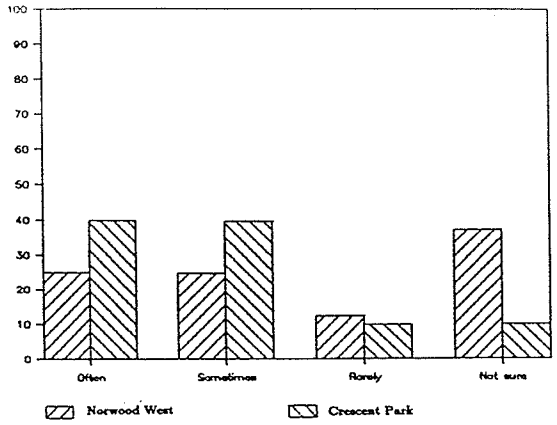
Where Is the Most Interesting Area in the Neighbourhood? (Crescent Park)



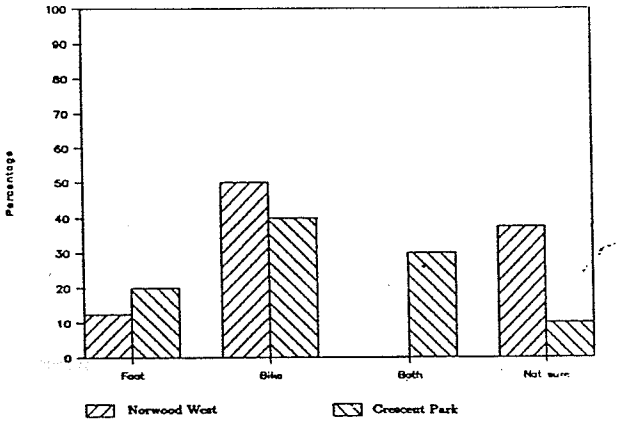
Do You Cruise or Walk Around the Neighbourhood?



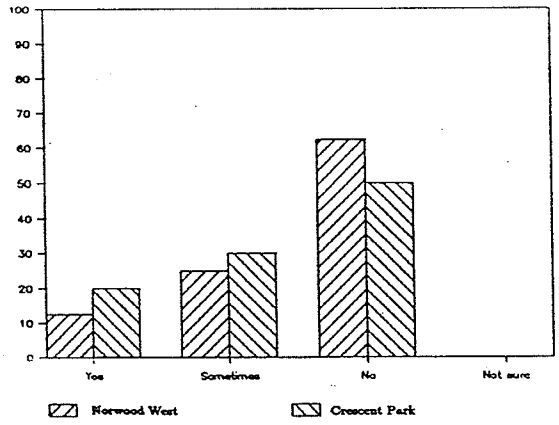
How Often Do You Cruise or Walk Around?



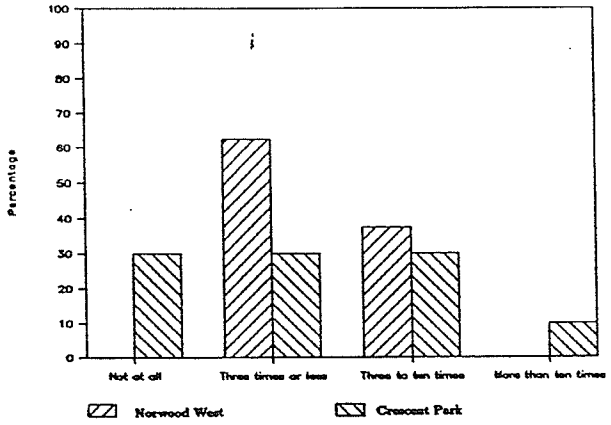
Is This Usually on Foot or on a Bike?



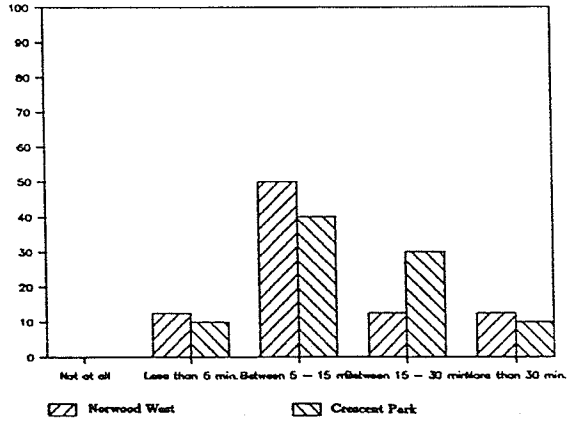
Is it Hard to Find Things to Do Close to Home?



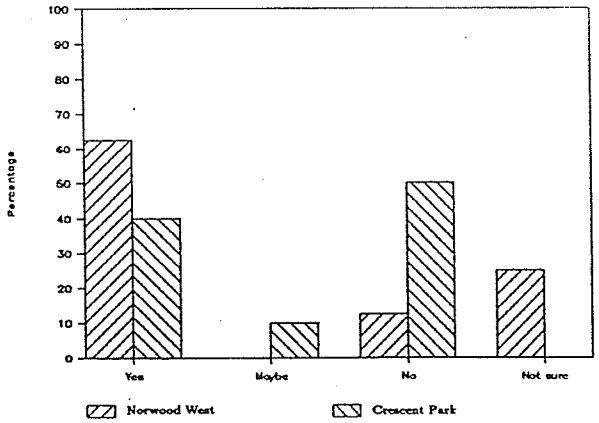
How Often Have You in the Last Week
Used or Passed Through the Open Space?



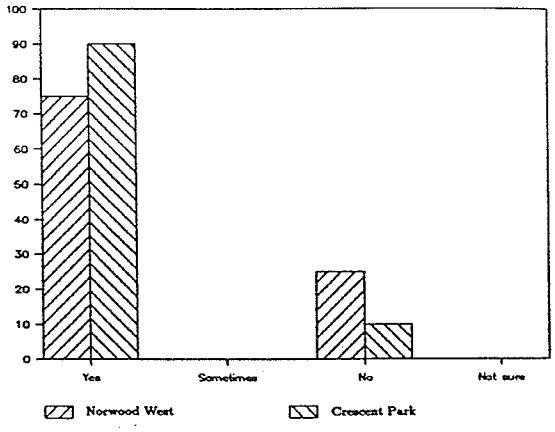
How Much Time Per Visit
Do You Normally Spend There?



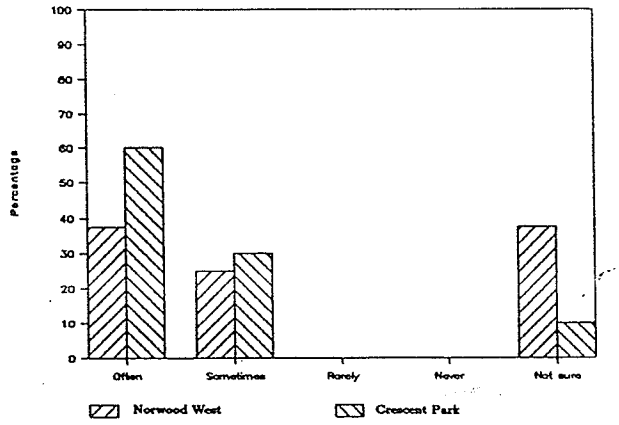
Paths and Areas with Plants—Are They Equally Important to You?



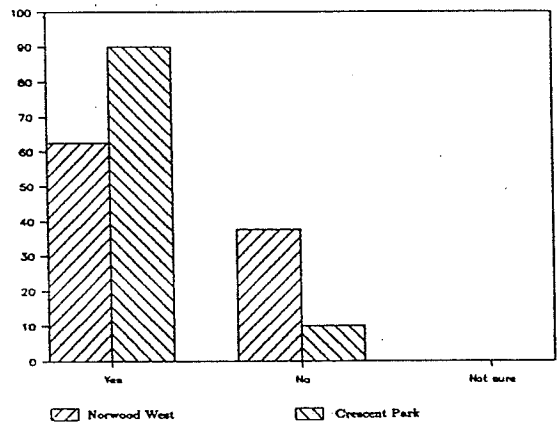
Can You Find Privacy Outside?



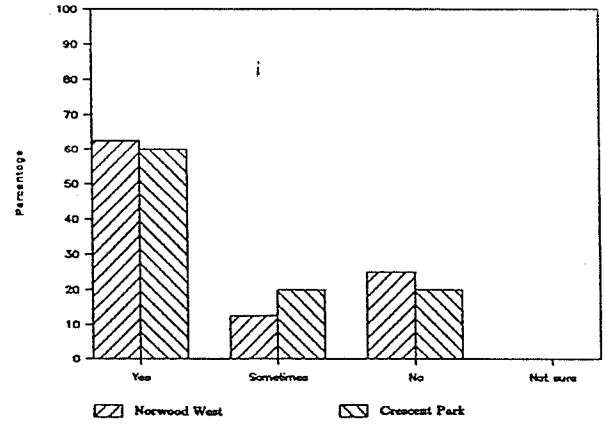
How Often Do You Use
Places Where You Can Find Privacy?



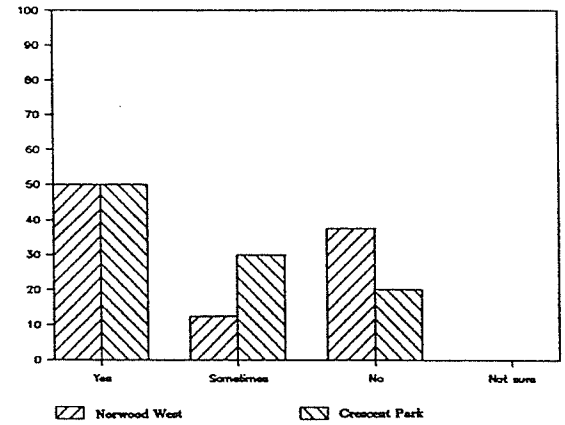
Have You Ever Made a Fort or Your Own Special Place?



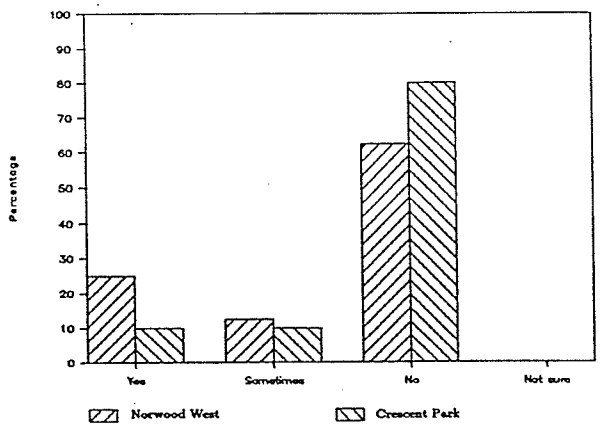
Do You Prefer to Spend Most of Your Time
Within View of Your House?



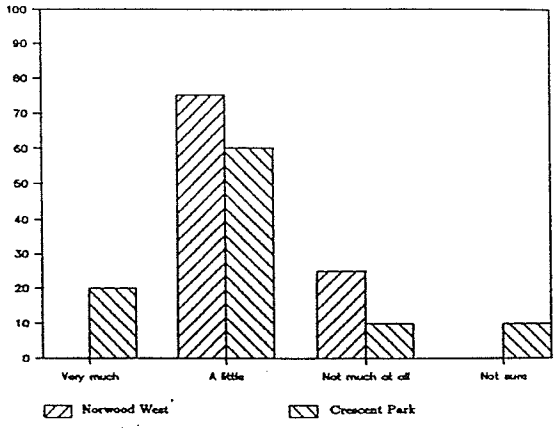
Do You Prefer to Spend Most of Your Time
Out of View of Your House?



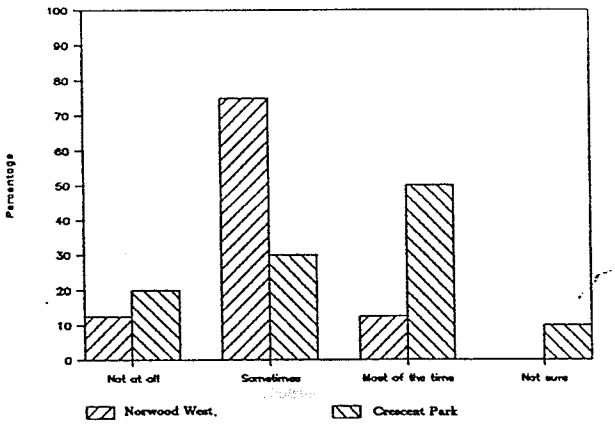
Do You Prefer to Spend Most of Your Time Out of View of any Houses?



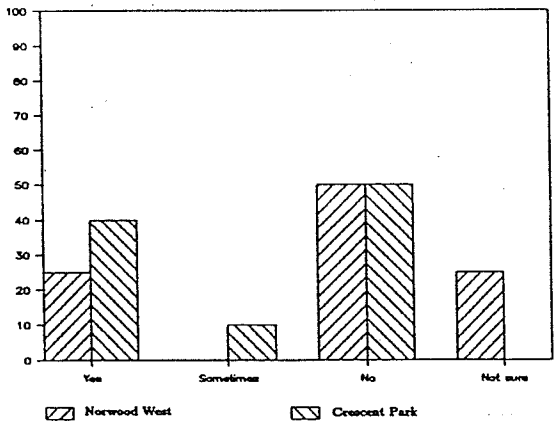
Do You Think The People in the Houses Watch the Kids in the Open Space?



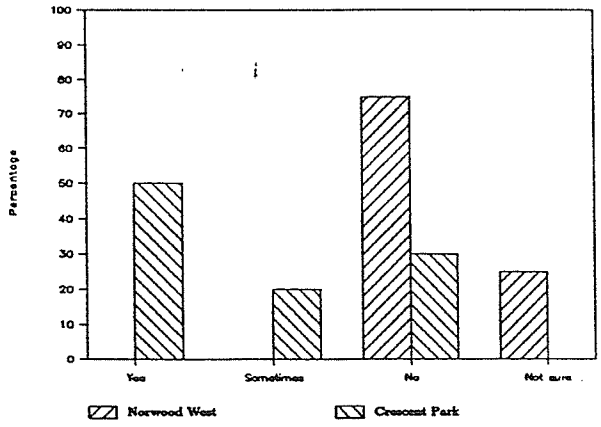
Is Getting Away From Adults Important? (Adults Being Parents or People of Authority)



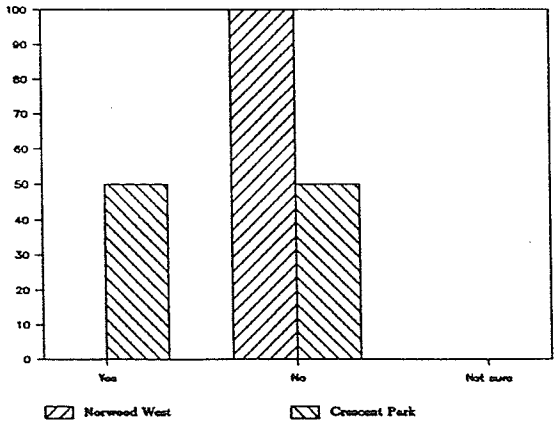
Does Having Adults Around Influence What You Do?

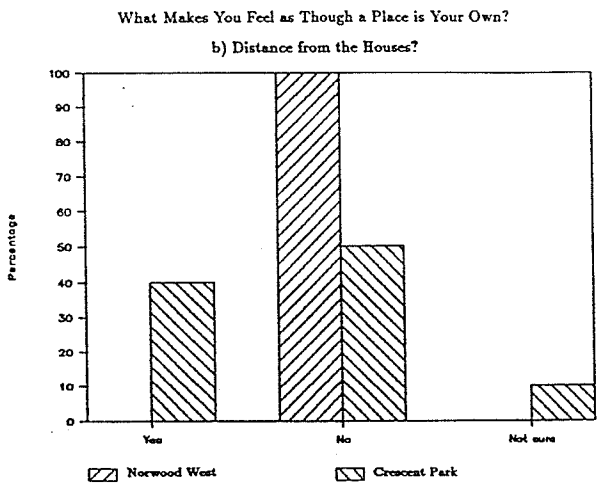


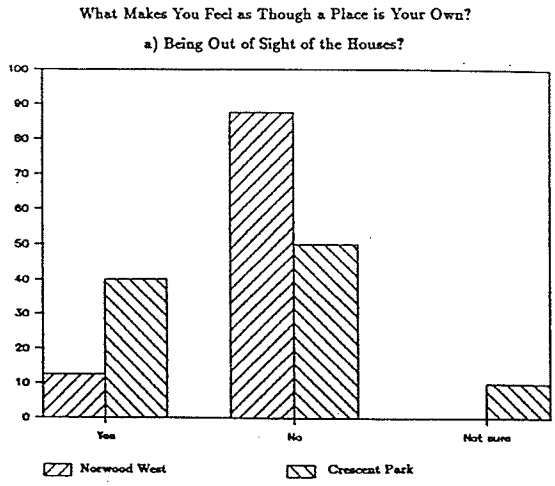
Does Having Adults Around Influence Where You Play?



Are There Any Places in this Area You Feel You Can Call Your Own?





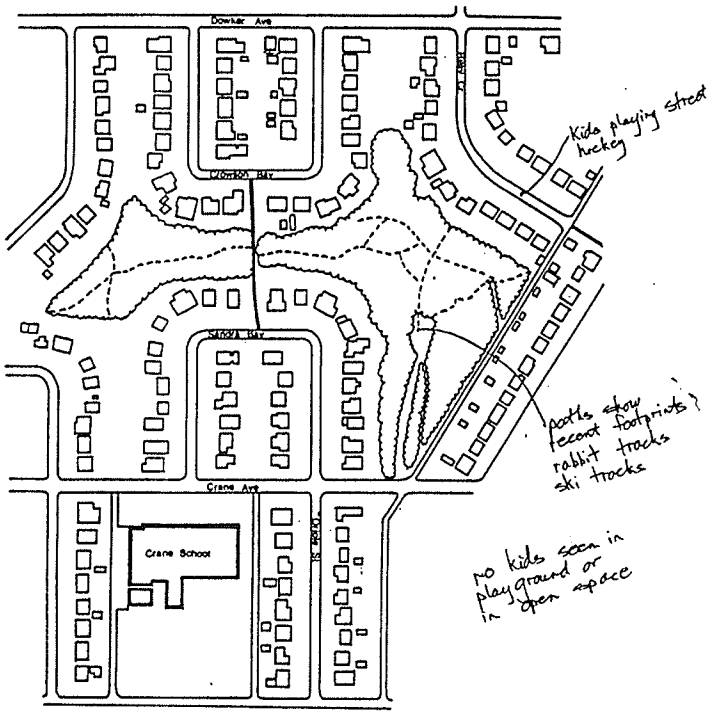


Is the bush a place of little importance?
(Comments made by the Crescent Park group)

- Yes. Because there is just trees and all that stuff looks like kind of a jungle. Who will go in a jungle?
- No. It's of big importance.
- No. I guess it is of pretty big importance because it just wouldn't be the same if we didn't have a woods because you don't have enough trees so you can sit under the shade.
- No. I'd get mad if someone came and chopped down all the trees.
- No. I really like it a lot.
- No. Can be of great importance because some people need privacy.

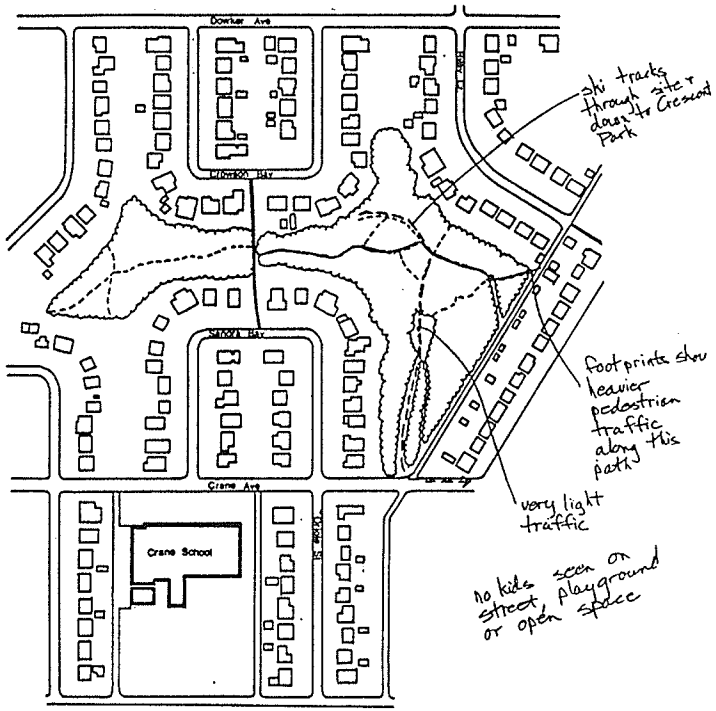
Appendix D

OBSERVATIONAL FIELD NOTES



CRESCENT PARK

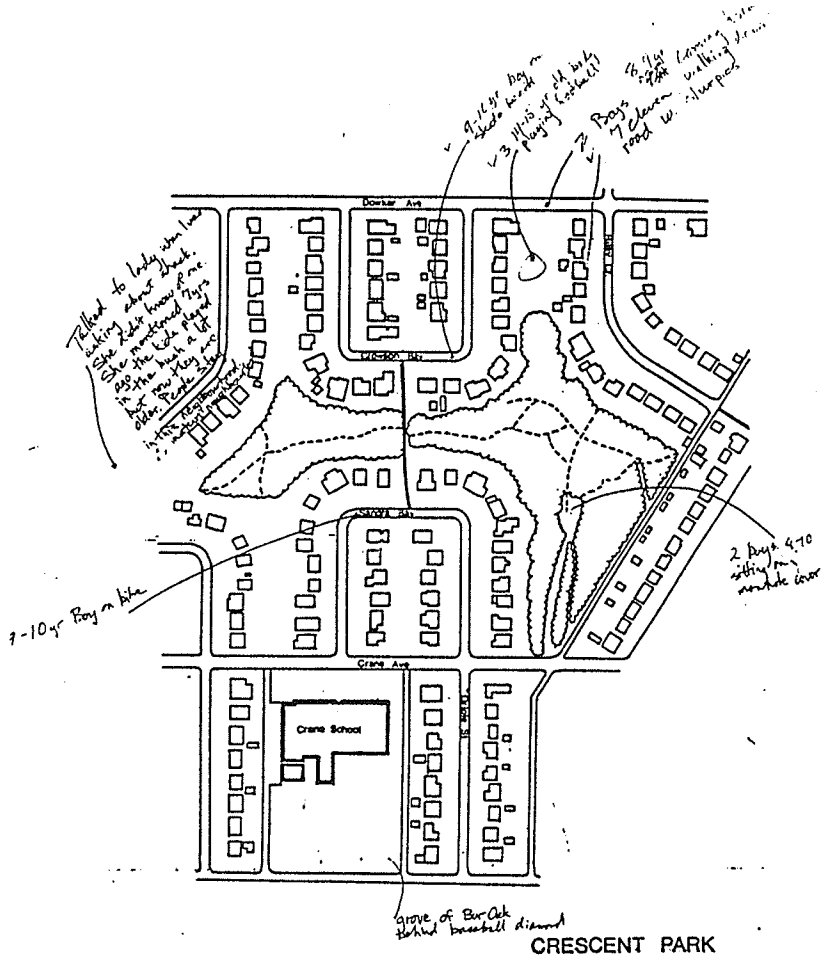
Date Sun. Dec. 14 '86 Time 10:00 am - 11:00
Temp -10 °C
Wind 7 km/h
Type of day sunny & clear



CRESCENT PARK

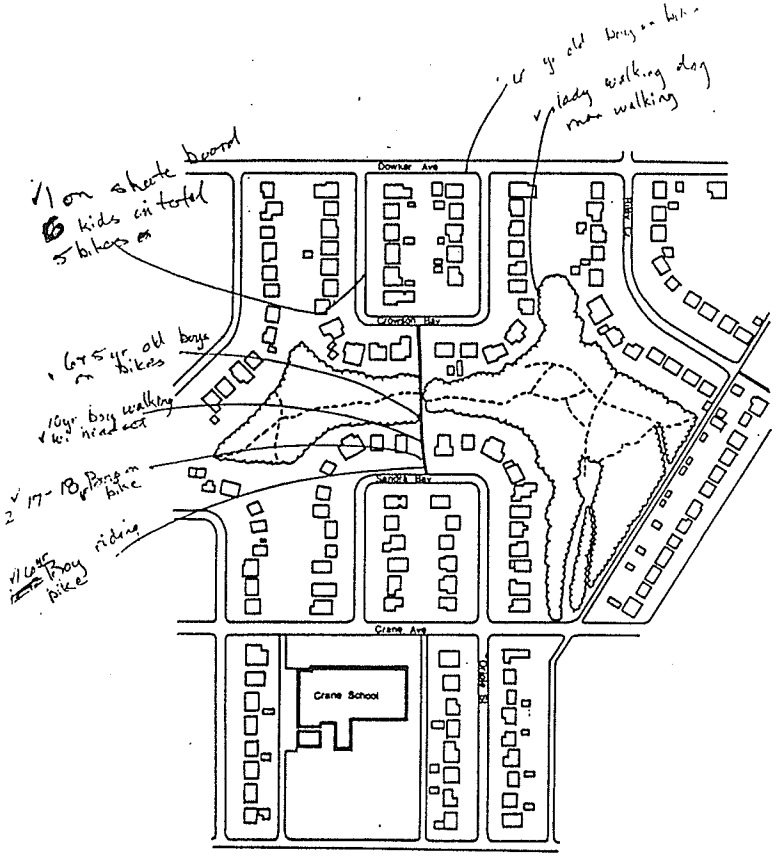
Date Sun. Mar 1 '87 Time 2:30 - 3:00
Temp -5 °C
Wind 7 km/h SSW
Type of day Sunny

N.B. Sat. there was a 8 cm snowfall making it good for recording new activity



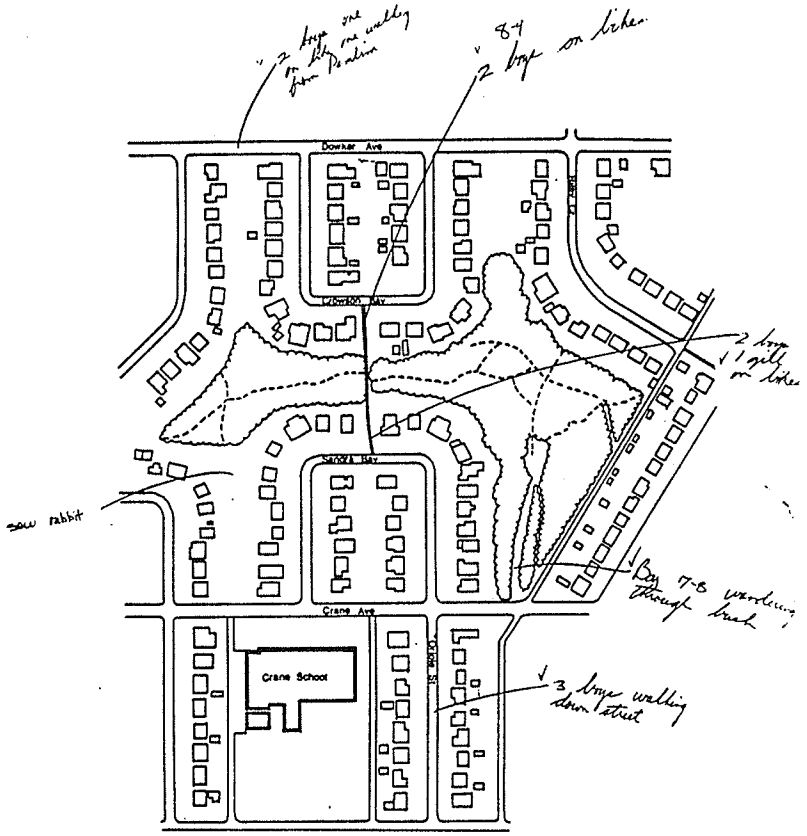
CRESCENT PARK

Date Aug. 27 '87 Time 3:30 - 4:30
Temp 23°C
Wind calm
Type of day mainly sunny w. some clouds very pleasant



CRESCENT PARK

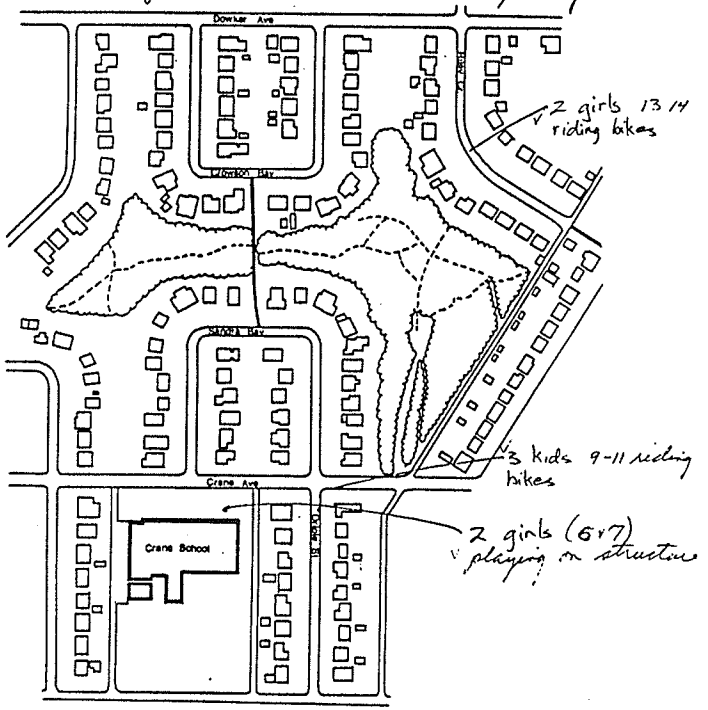
Date Aug. 30 '87 Time 3:15 - 4:15
Temp 15°C
Wind 33 km/h windy
Type of day ptly cloudy



CRESCENT PARK

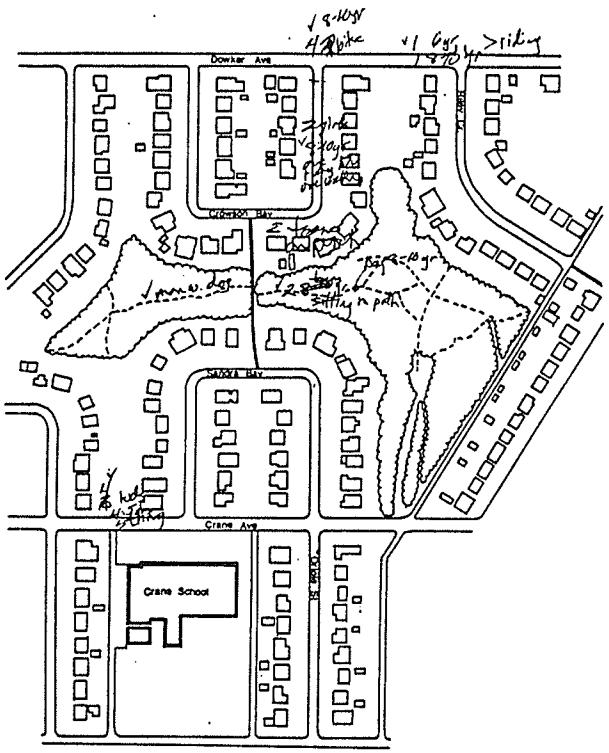
Date Sept. 26'87 Time 3:00-4:00
Temp 22°C
Wind SE 22km
Type of day sunny + clear

2:15 lots of activity in Crescent Park especially at play equipment + people walking along bike



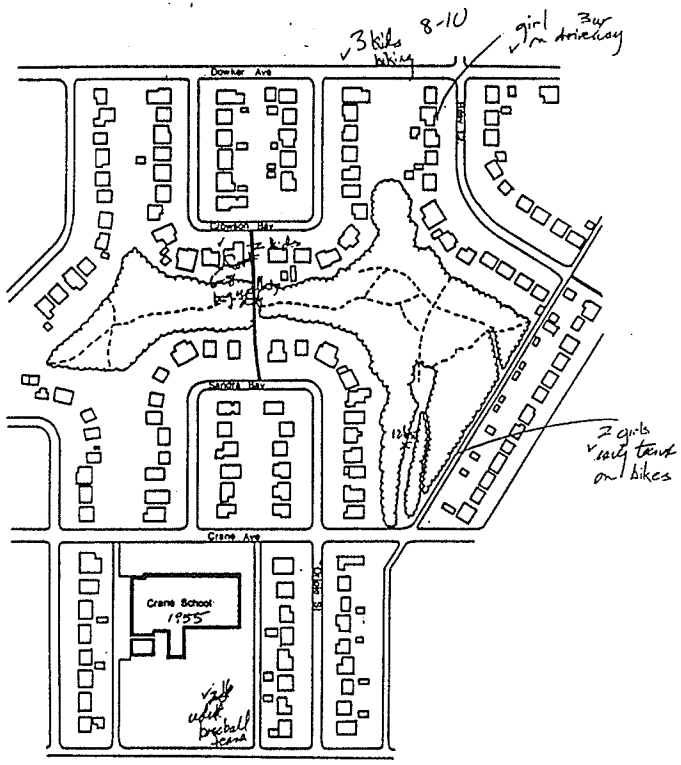
CRESCENT PARK Thanksgiving Mon.

Date Oct. 12 '87 Time 1:45-2:00
Temp 12°C
Wind SSE 26 km/h
Type of day clear



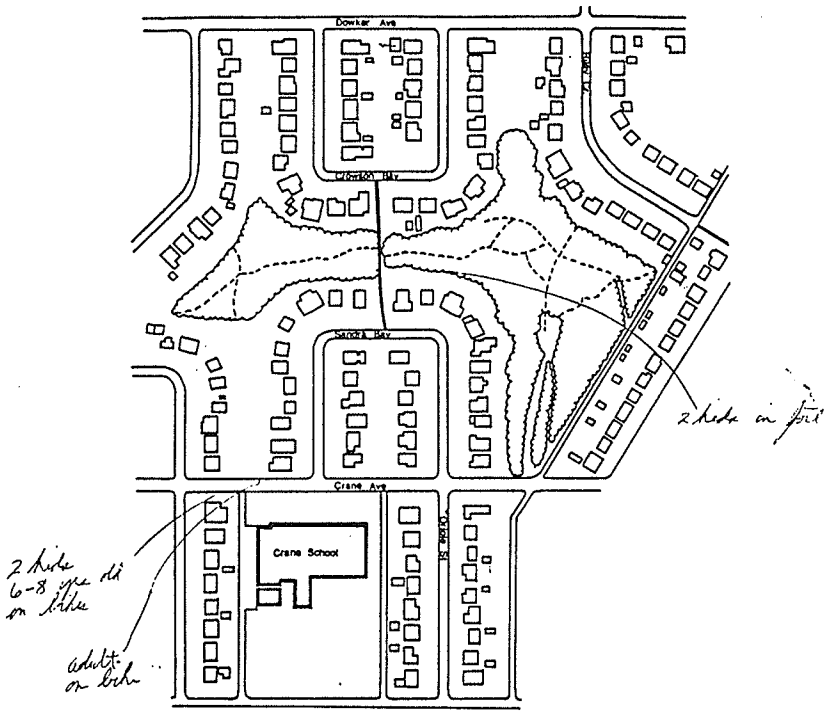
CRESCENT PARK

Date JUNE 2 Time 4:00
Temp 30°C 4:45
Wind light wind
Type of day sunny some cloud



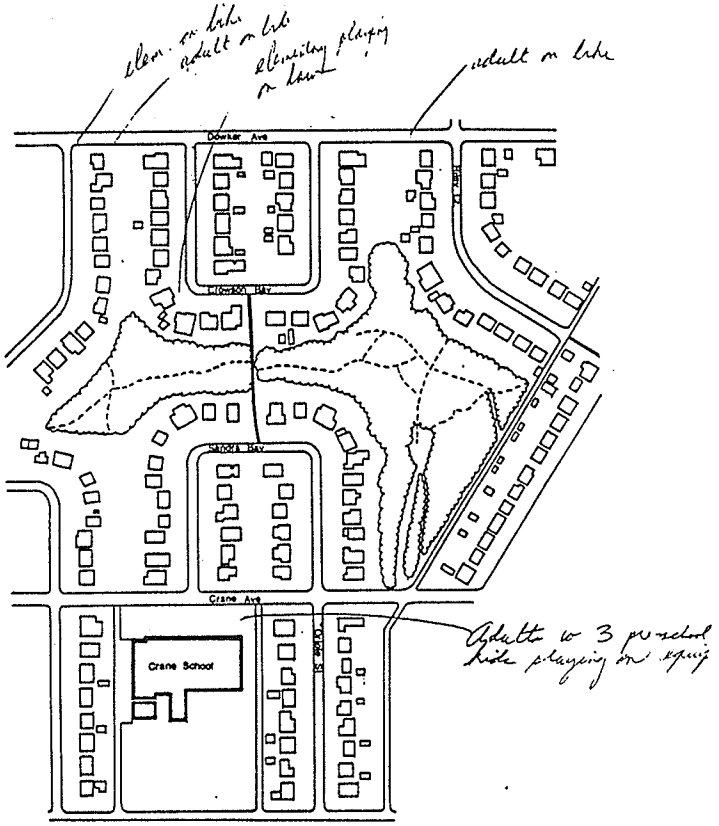
CRESCENT PARK

Date JUNE 2 Time 7:00-7:4
Temp 28°
Wind light wind
Type of day Sunny some cloud



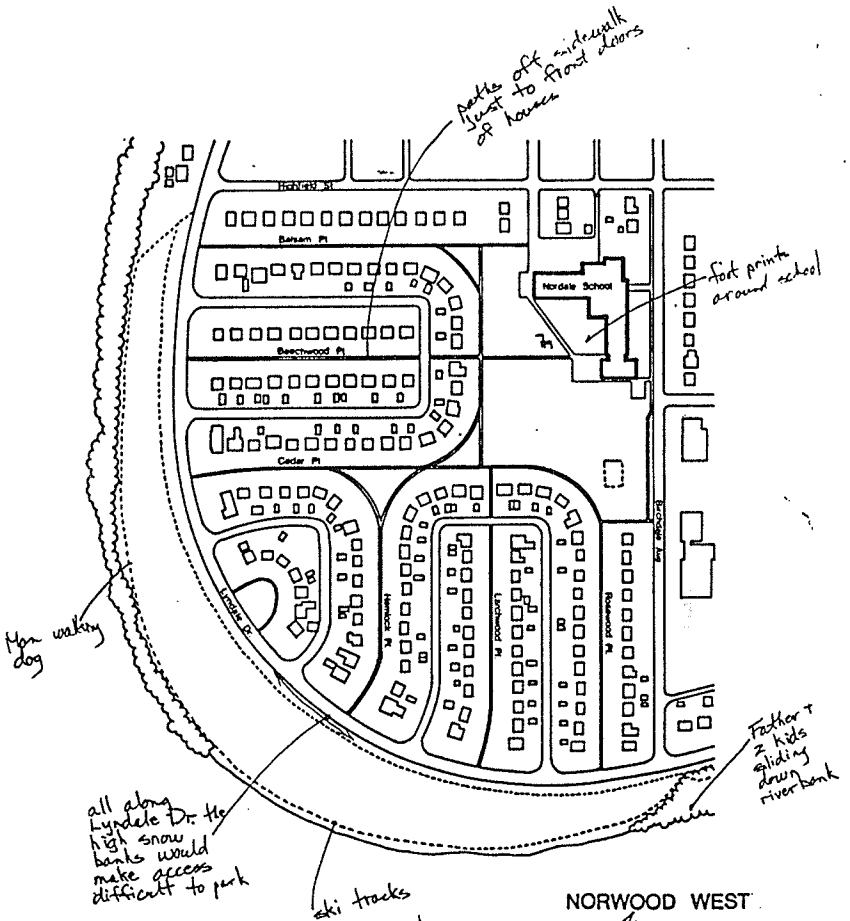
CRESCENT PARK

Date June 26 Time 3:15 - 4:15
Temp 27°
Wind light breeze
Type of day partly cloudy



CRESCENT PARK

Date July 2 Time 3:00 - 3:45
Temp
Wind light wind
Type of day sunny



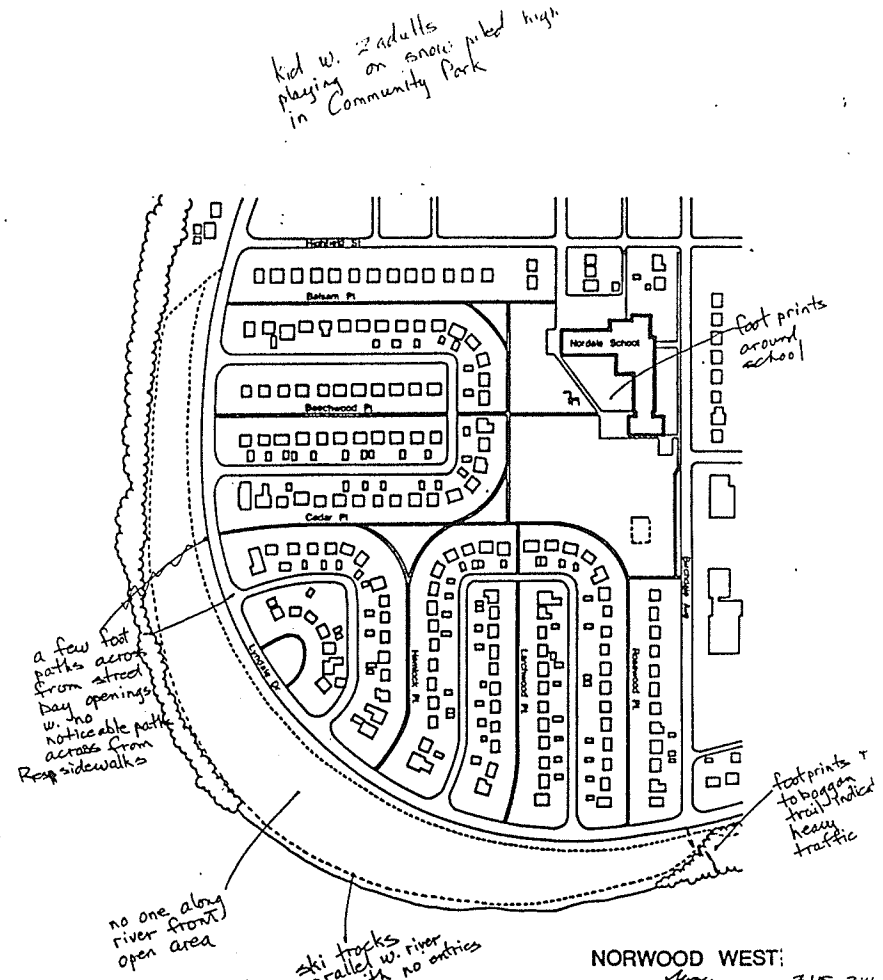
NORWOOD WEST

Date: Sun. Dec. 14 '86 Time: 12:00 - 1:00

Temp -10°C

Wind 7 km/h

Type of day sunny v clear



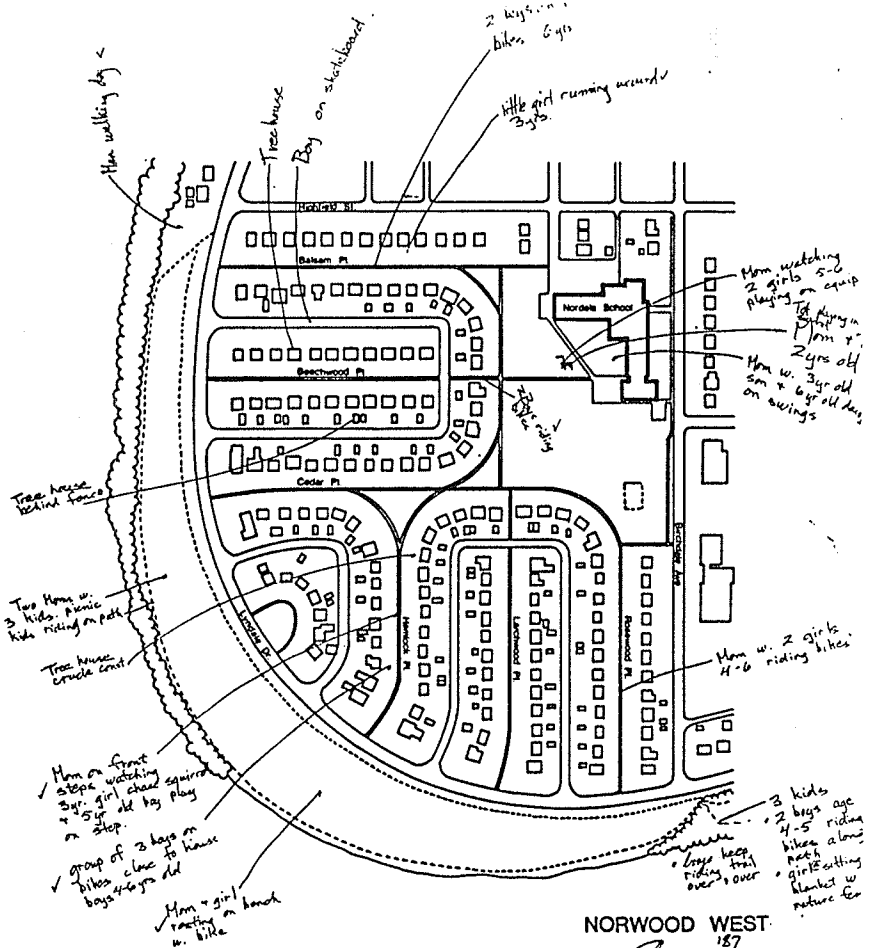
NORWOOD WEST

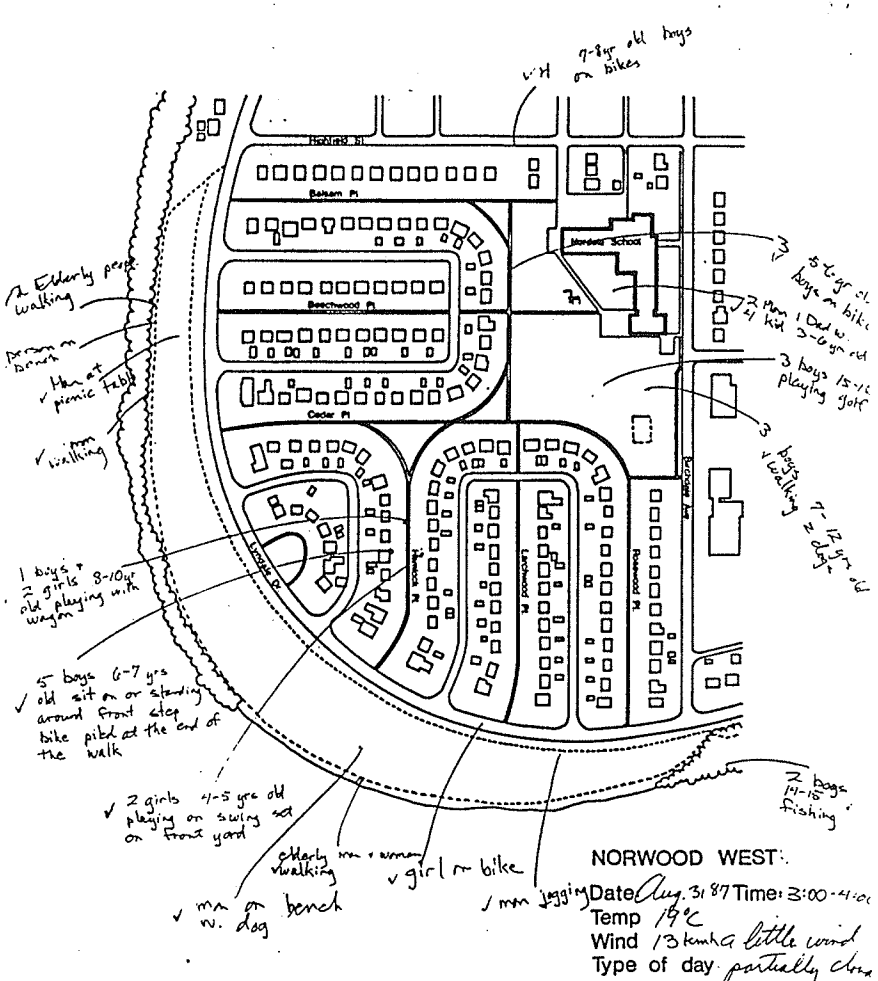
Date: Sun. Mar. 1 '87 Time: 3:15 - 3:40

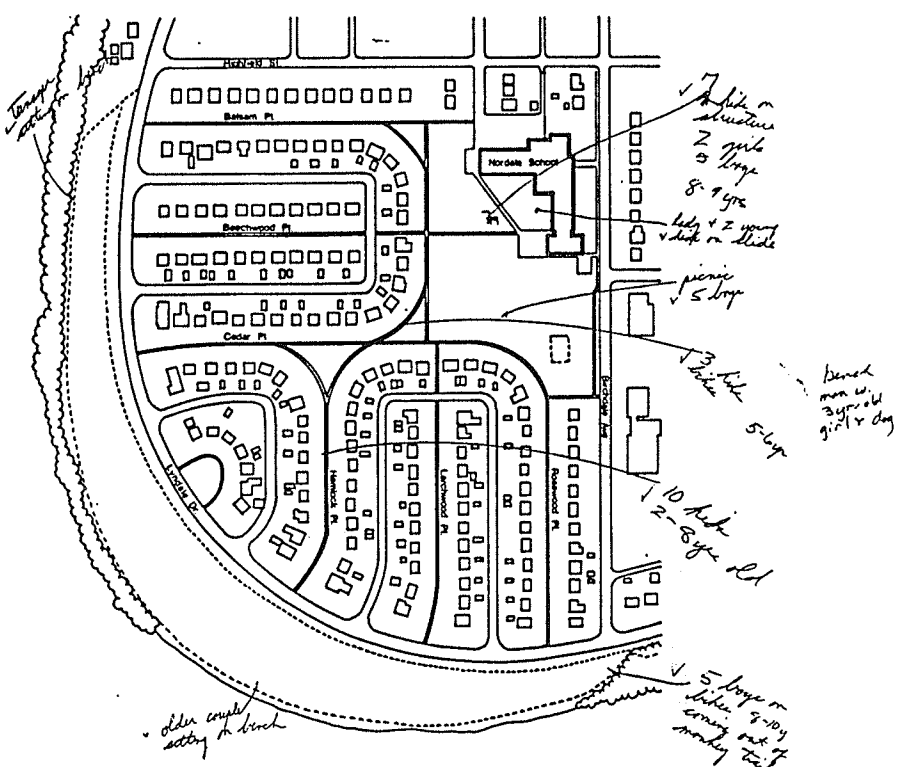
Temp -5°C

Wind 7 km/h

Type of day sunny


Man walking dog
Tree house
Boy on skateboard
2 boys on bikes, 6 yrs
little girl running around
Highland St
Balsam Pl
Nordella School
Beechwood Pl
Cedar Pl
Man watching 2 girls 5-6 playing on equip
Man w. 2yrs old
Man sm + 6yr old boy on swings
Tree house behind fence
Two Men w. 3 kids + picnic kids riding on path
Tree house circle crest
Man w. 2 girls bikes 4-6 riding
Man on front steps watching 3yr girl chase squirrel + 5yr old toy play on step
group of 3 boys on bikes close to house boys 4-6 yrs old
Man + girl reading on bench w. bike
3 kids
2 boys age 4-5 riding bikes along path
girl sitting blanket w nature fer
boys keep trail riding over + over
NORWOOD WEST
'87
Date Aug. 26 Time: 1:00 - 2:3
Temp 20°C
Wind calm
Type of day sunny w. sm
ptly cloudy
very pleasant


7-8yr old boys on bikes
Highland St
Balsam Pl
Nordella School
Beechwood Pl
Cedar Pl
2 Elderly people walking
Man on bench
Man at picnic table
Man walking
1 boy's + 2 girls 8-10yr old playing with ways on
5+ boys 6-7 yrs old sit on or standing around front step bike piled at the end of the walk
2 girls 4-5 yrs old playing on swing set on front yard
man on bench w. dog
elderly walking
man + woman
girl on bike
man jogging
3 boys playing golf
2 boys 14-15 fishing
NORWOOD WEST
Date Aug. 31 87 Time: 3:00 - 4:0
Temp 19°C
Wind 13 km/h a little wind
Type of day partially clou



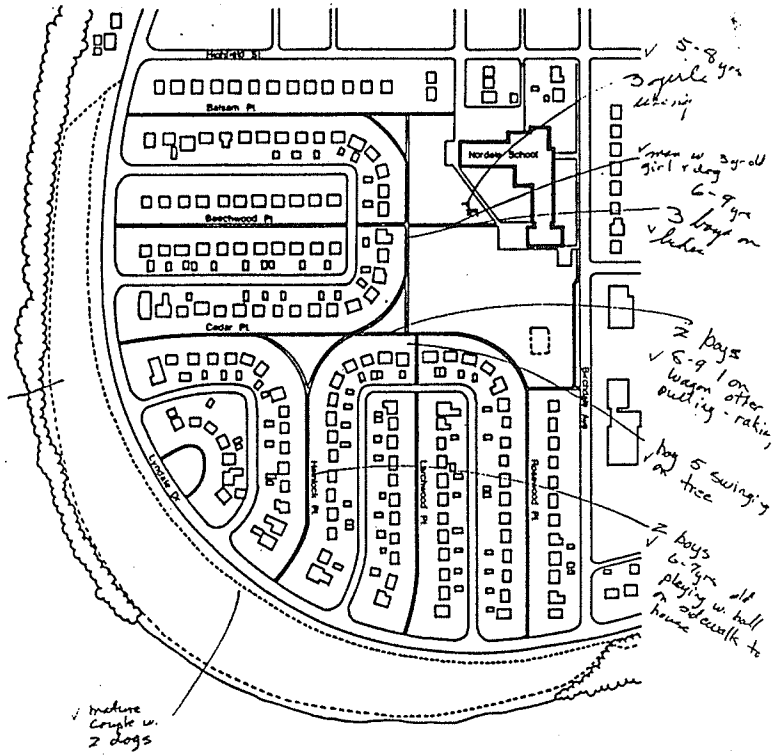
NORWOOD WEST

Date: Sept. 26 Time: 4:30 5

Temp 22°C

Wind SE 22 km

Type of day sunny + clo



NORWOOD WEST

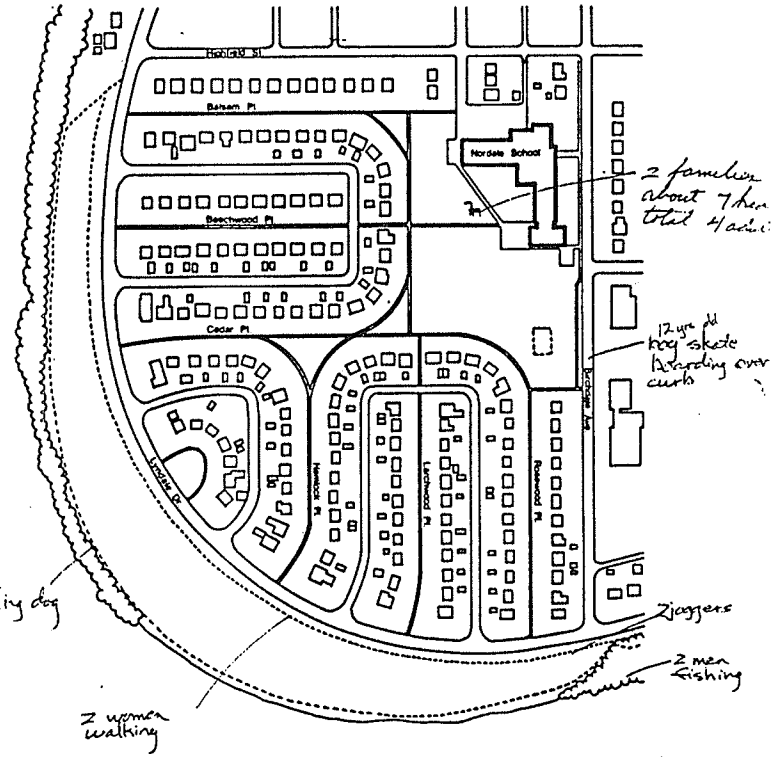
Date: Oct. 4/87 Time: 2:15 3:00

Temp 20°C

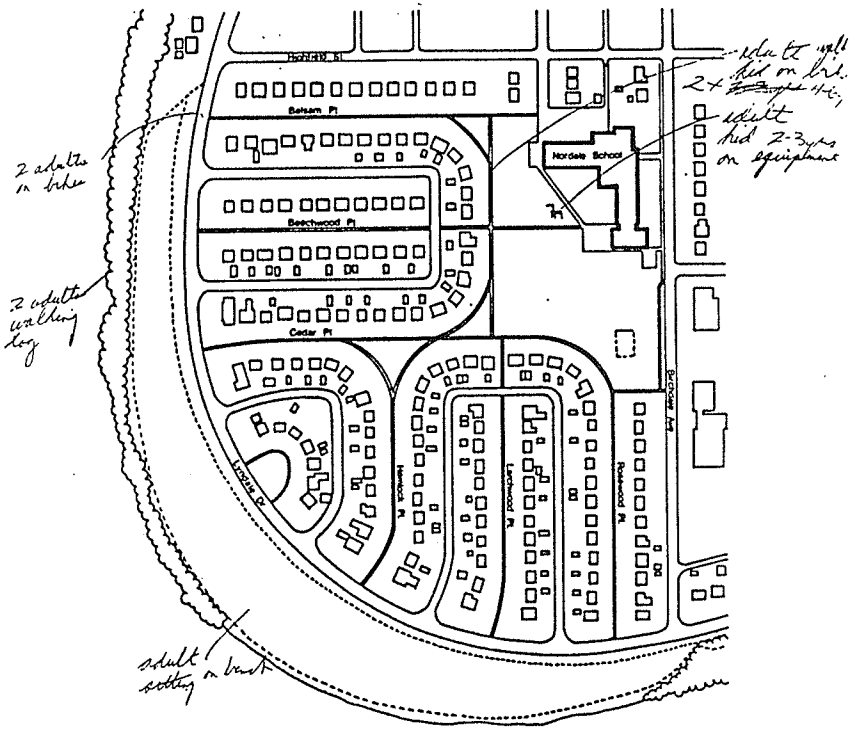
Wind 30 km gusty

Type of day partly cloudy cloudy storm blew up

3:15 No activity at community centre. swings & play equipment empty

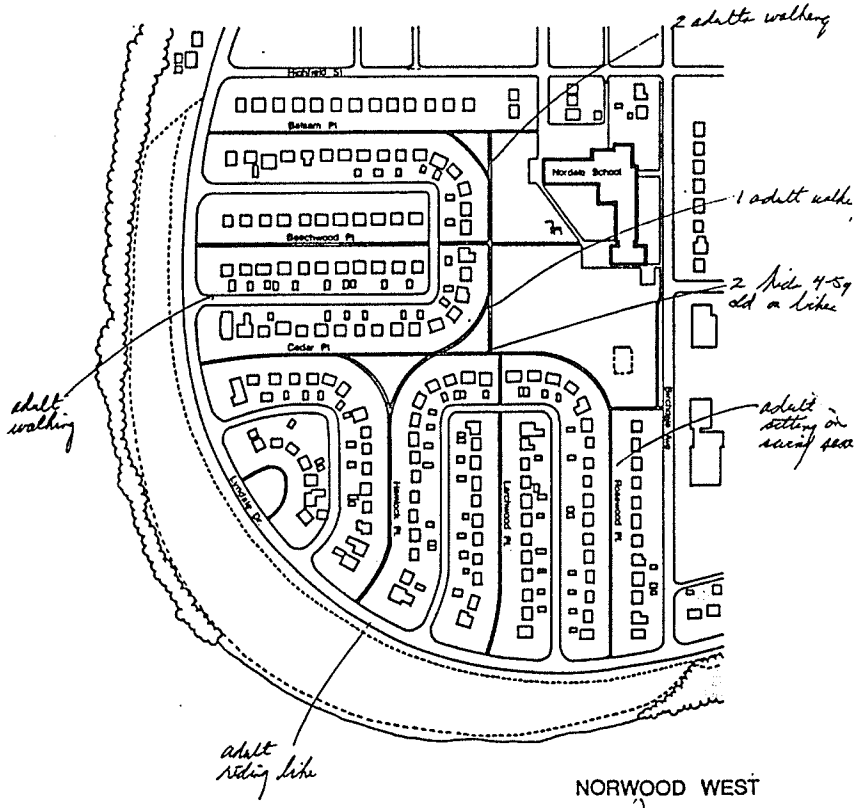


NORWOOD WEST 1 Man Thanksgiving
Date Oct 12 '87 Time 2:20-3:
Temp 13°C
Wind SSE 26 Kmh
Type of day clear

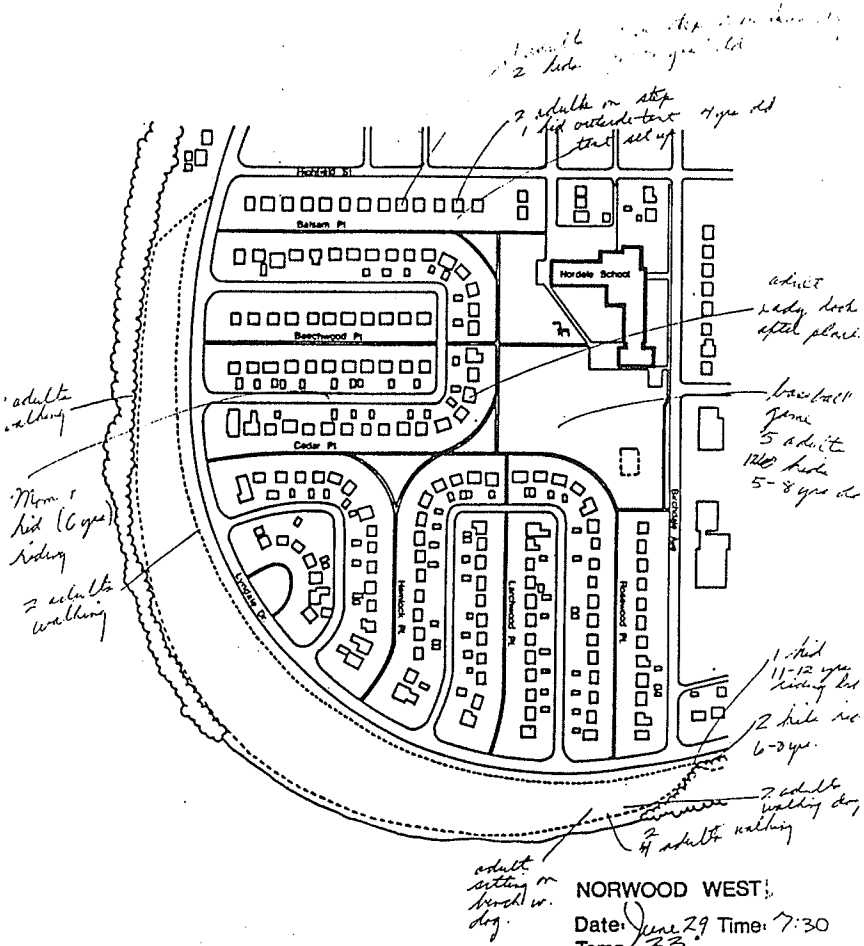


NORWOOD WEST

Date: June 26 Time: 4:45-5
Temp 27°
Wind light breeze
Type of day partly cloudy



NORWOOD WEST
Date: June 27 Time: 4:45
Temp 80
Wind light wind
Type of day cloudy



NORWOOD WEST
Date: June 29 Time: 7:30
Temp 73°
Wind light breeze
Type of day skinny