

Small Urban Spaces: Programming for Good Tot Lots

by

Carolina Natividade Simon

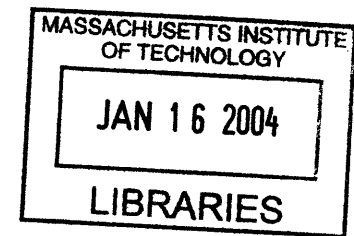
B. Arch., Savannah College of Art and Design (1999)
M. Arch., Savannah College of Art and Design (2001)

Submitted to the Department of Urban Studies and Planning
in Partial Fulfillment of the Requirements for the Degree of
Master in City Planning

at the

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September 2003

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ABSTRACT

This thesis is about small urban spaces, specifically tot lots in dense neighborhoods. It includes a literature review on small urban spaces and playgrounds, and site-specific research based on both a survey of users and direct observation of three tot lots in Cambridge, MA.

Initially, this thesis set out to explore whether good tot lots could potentially attract community members beyond children and parents. Ultimately, my observations of these tot lots did not reveal convincing evidence of attributes that would foster other interactions aside from those that evolve around children. In the end, this thesis identified the indicators that signal good tot lot design, the *attributes of goodness*.

This study found a large overlap between the attributes identified in the literature reviewed, and those that people perceived as being good qualities in the three tot lots studied. These attributes are: *play equipment, scale, sun and shade, safety and management*. However, the literature on playgrounds did not reveal attributes other than the ones directly related to play equipment and child development. For the attributes not covered by the literature, I have relied on my own set of observations to reveal the ones that contribute to the quality of the tot lots studied. These attributes are: *furniture, surroundings, landscaping, optimal capacity, social function, accessibility, proximity and frequency of use*.

In sum, this thesis proposes indicators that signal good tot lots and suggests an evaluation process that has proven to be effective in identifying these attributes in addition to evaluating the performance of tot lots.

Thesis Supervisor: Jean P. de Monchaux
Title: Professor of Architecture and Planning

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Introduction

This thesis is about small urban spaces, specifically tot lots,¹ and their role in providing an attractive place for young children, parents, guardians and other members of the community.

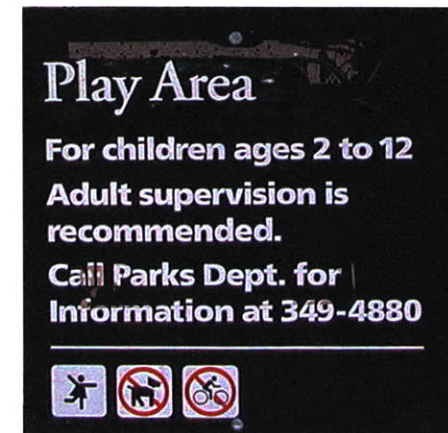
My interest in this topic stems from a desire to preserve and improve small urban spaces, particularly tot lots, in cities. These spaces are treasures in dense urban neighborhoods and to neglect the design, improvement and maintenance of these spaces is to disregard the well-being, as well as the everyday life of urban communities.

Initially, this thesis set out to explore whether good tot lots can potentially attract community members beyond children and parents. If these small urban spaces can play an important role not only in the lives of toddlers who play in them, but also in the lives of all neighborhood residents, they can become even more valuable spaces in dense neighborhoods.

This initial exploration stemmed from my informal observations of several tot lots in Cambridge, Massachusetts. For two years I have walked by these tot lots, and mingled with parents and children. I had noticed others like me (with no children) benefiting from the shade, flowers, and nice atmosphere these spaces provide. If these tot lots were able to attract people other than parents with children, could others be designed to accommodate other neighborhood residents as well? So I was determined to find out what it was about these tot lots that made them so attractive to individuals other than children and parents.

Ultimately, my observations of these tot lots did not reveal convincing evidence of attributes that would foster other interactions aside from those that evolve around children. However, given the knowledge obtained from a literature review, I have been able to identify the attributes of goodness that appear to be important to the intended users of one of the three observed tot lots. This enabled me to suggest that the methodology adopted can be effective for identifying the attributes of goodness and evaluating the performance of tot lots.

¹ The National Recreation and Parks Association defines tot lots as the smallest park type intended to serve children under 12 years old. The NRPA suggests that these parks should serve a ¼ mile walking radius from residential areas. Currently, there are 51 tot lots/playgrounds in Cambridge.



Sign at Wilder/Lee Park.

It quickly became apparent that there was an uneven distribution of tot lot users in the three spaces surveyed. *Cooper Square*, commonly known as *Hancock Park*, was far more popular than the other two tot lots observed; *Maple Avenue Park*, a small urban space combined with an area for toddlers, was the least popular.

This uneven distribution of users raised interesting questions for further research. On the one hand, it suggests that the two parks with fewer users might lack the qualities that make Cooper Square so popular in the neighborhood. On the other hand, it might signal that people simply cluster in one tot lot; most likely the preferred one, despite the qualities of other tot lots. Nevertheless, I will argue that the execution of improvements could promote a balanced user distribution and increase usage in tot lots. In addition, land acquisition plans, the proximity of tot lots within a neighborhood, and attractions can all impact the distribution of tot lot users. The allocation, management, and distribution of tot lots will be briefly discussed at the end of this study.

In sum, this thesis demonstrates an approach as to how designers, planners, city officials and neighborhood associations might evaluate small urban spaces and tot lots. It proposes indicators that signal good tot lots and suggests an evaluation process. It includes a literature review on small urban spaces and playgrounds and site-specific research based on both a survey of users and direct observation of three tot lots in Cambridge, MA.

Chapter one introduces the thesis topic, question and intent. It also discusses the role of small urban spaces and tot lots as it is presented in the research literature.

Chapter two introduces the cases studied for this thesis, three tot lots in Mid-Cambridge, and discusses their context. In addition, it introduces two recent planning studies prepared by the City of Cambridge.²

² The first, the *Mid-Cambridge Neighborhood Study* is a comprehensive planning analysis of Mid-Cambridge; and the second is the *Green Ribbon Study* that addresses issues evolving around open space in the City of Cambridge.

Chapter three discusses my three-step research process used to identify the attributes of goodness of tot lots:

1. A literature review of small urban spaces and the program of public playgrounds for small children.
2. A survey from the point of view of tot lot users: parents and guardians who responded to a written questionnaire.
3. *In situ* observations of the tot lots surveyed.

Chapter four brings together in one matrix the information obtained from the literature review, written questionnaire, and observations. The literature review generated the matrix's main structure by providing most of the attributes of goodness of tot lots; it also informed the preparation of the written questionnaire.

Chapter five concludes with a list of the most important attributes of goodness found in this study and recommendations for the design of tot lots. It also suggests a direction for further studies.

I. TOWARDS GOOD TOT LOTS

"In the middle of a sprawling city this park exists. It is a moment of silence in a body of noise. It is a chance to feel what life is."

survey respondent profile:
male 20-30

no children

Lee/Wilder Park

April, 2003

What Signals a Good Tot Lot?

What are the attributes (called the "program elements" in the literature) that make good tot lots? This question has been widely discussed in the literature on playgrounds and has had an array of answers. Over time, the literature that discusses the programming of playgrounds has become rather repetitive only differing with respect to its attention to safety concerns, playground equipment and advanced studies on children's needs and behavior. Hence, I have focused on authors who provide the most updated discourse on playground design: Hendricks, Brett and Moore.

Urban activist and New York planner, Whitney North Seymour Jr. has pointed out the importance of small urban spaces in the city, not only as places of recreation but as important pieces in cities.³

Small urban parks should be more than places merely to sit or play. They should also be scenes to look at from afar, whether walking down a street, looking out a window, or catching a glimpse out of the corner of one's eye. That is, good small urban parks could contribute to the interest, variety, and attractiveness of neighborhoods. They could be an affirmative force for counteracting blight and slum generation...Vest-pocket parks, in short, not only could perform a practical recreational function but they could also contribute to the preservation of the city as a place in which to live as well as work.

It is a common understanding that tot lots, as small urban spaces, play an important role in a child's development.⁴ In dense cities these spaces assume even greater importance and represent a relief from the confined life in apartment complexes. Playgrounds were intended to develop children's physical skills and to use their excess energy so they would behave when they went back indoors (Hendricks, 2001). In addition, playgrounds can be the scene for social interactions, recreation and many learning experiences.

³ Seymour, Whitney North Jr. et al. *Small Urban Spaces: The Philosophy, Design and Politics of Vest-Pocket Parks and Other Small Urban Open Spaces* (New York: New York University Press, 1969), 7.

⁴ *Universal Opportunities of Early Childhood Education*. Policies Commission, National Education Association, Washington 1966.

Playground design is not recognized as a profession; it has suffered from a lack of innovation and progressive thinking.⁵ Landscape architects are getting more involved in the design of recreation areas, but the budget allocated for the implementation of playgrounds is usually not enough to pay professional design fees. As a result, other professionals such as play equipment manufacturers and contractors are called in to design and execute playgrounds leading to the standardization of these spaces, uniformity, and a lack of creativity. Moreover, cities often work with only one or two playground equipment manufacturers, creating tot lots with the same play equipment, even the same color and layout.⁶

Playground regulations for young children appear to have been produced primarily to address safety concerns and maintenance issues. While standards are effective in decreasing expenses and, to a certain extent, protecting children from accidents, mindless application of regulations can generate a lack of creativity and innovative design solutions for playgrounds. In this study, the goal is to discuss neither the legalities nor the financing behind tot lots; but rather to suggest important variables, other than programming, that affect the design of these spaces.

⁵ Hendricks, Barbara E. *Design for Play* (Burlington: Ashgate Publishing Company, 2001), 41.

⁶ Landscape architect Clara Batchelor, interview by author, 16 April, Boston, written notes, CBA Landscape Architects, Boston.

The Experts on Small Urban Spaces

The role of small urban spaces and places for children to play has long been acknowledged by city officials, designers and community members. Urban planner, historian, sociologist, local advocate, and architectural critic Lewis Mumford highlights the importance of these small urban spaces in the city:

A city's environment should encourage its inhabitants, particularly those from crowded areas, to walk or remain outdoors for reasonable interludes. The presence of trees in a pleasant atmosphere or a small retreat of green will not only draw people from their houses but provide an essential contrast to the world of cars, signs, wire, metallic sounds, and gases that permeate our streets.⁷

Mumford was a lifelong opponent of large-scale public works and hence of New York's City Parks Commissioner Robert Moses who disregarded the significance of small urban spaces in New York:

These tiny parks will not bring light and air to the neighborhoods where they are built and will in the end prove to be neighborhood nuisances.⁸

Unfortunately Moses' ideas were implemented in many cities in the United States and elsewhere. Cities still have not completely recovered from urban renewal and the vast areas of underutilized open spaces it has left behind.

In Mumford's view small urban spaces have an important role in providing everyday leisure in the communities in which they are present. They play a central part in the lives of apartment residents who yearn for fresh air and sun. Usually small in scale, tot lots provide children and parents these qualities as well. Furthermore, community members acquire a sense of ownership and pride in these places, often becoming activists in protecting their integrity, assuring their maintenance, and monitoring the children who play in tot lots.

⁷ Seymour, Whitney North Jr. et al. *Small Urban Spaces: The Philosophy, Design and Politics of Vest-Pocket Parks and Other Small Urban Open Spaces* (New York: New York University Press, 1969), 5.

⁸ *Ibid*, 8.

Playground expert, Lady Allen of Hurtwood (1968) also stresses the importance of small open spaces in urban environments:

In cities and large towns it is important to use every opportunity to create calm, green and pleasant places where members of the neighborhood can gather for relaxation in restful surroundings.⁹

⁹ Hurtwood, Lady Allen of. *Planning for Play* (Cambridge: The MIT Press, 1968), 105.

One of the challenges cities face is achieving a balanced distribution of users across a network of recreation areas. Why are some of these small urban spaces and tot lots underutilized? Many causes can be suggested; demographic changes and management problems, inappropriate location and design flaws can all impact the number of users in open spaces, playgrounds and tot lots.

Although tot lots are targeted to accommodate children, their parents and their guardians, they can be attractive spaces to walk by and to contemplate from afar in dense neighborhoods. Moreover, tot lots are usually small in scale and can provide some of the same qualities of small urban spaces. Their small scale and seclusion usually provide a sheltered sensation, secluded from main traffic. Thus, the role of tot lots remains relevant in providing open space and greenery in dense neighborhoods.

The Experts on Tot Lots

The significance of tot lots for young children has long been acknowledged by city officials. A report prepared in 1966 by the United States National Education Association pointed out the importance of play for the proper development of young children. The findings in this report still hold true today:

Research shows that the first four to five years of a child's life is the period of most rapid growth in physical and mental characteristics and of greatest susceptibility to environmental influence. Consequently, it is in the early years that deprivations are most disastrous in their effects... Experience indicates that exposure to a wide variety of activities and of social and mental interactions with children and adults greatly enhances a child's ability to learn. Few homes provide enough of these opportunities... The need is for a complement, not an alternative, to family life. But the need is compelling.¹⁰

¹⁰ *Universal Opportunities of Early Childhood Education*. Policies Commission, National Education Association, Washington 1966.

There is a vast body of literature that discusses good playground design, from physical to social, cultural, ecological, economic and political points of view. The literature on playground design is quite repetitive; variations mainly evolve around playground equipment, safety standards and new studies on children's needs and behavior.

For this thesis I have focused on the literature that primarily discusses the design and program of public playgrounds, most specifically, tot lots. I draw from the most recent literature, and highlight relevant points of view on good tot lot design suggested by different authors. References range from the work of Hurtwood (1968) on post-war playground areas, to the recent work of Hendricks (2002) that focuses specifically on the design of playgrounds.

PLAY EQUIPMENT

Heseltine and Holborn (1987) suggest two main approaches for equipment selection: one that deals entirely with management issues and another that is based on child development. The first approach deals with the qualities of the play equipment (durability and easy maintenance), and the second deals with psychomotor and cognitive characteristics. Play equipment embodying both approaches is the most beneficial for children's development and appropriate for public tot lots.

Children need a variety of play equipment. Experts might not agree with the type or range of play equipment a tot lot should have, but they certainly agree that a tot lot must offer an array of play opportunities. While Hendricks (2002) notes that the traditional sandbox, slide and swing are still amongst the most popular play equipment in tot lots; Heseltine and Holborn (1987) argue that "traditional play equipment reduces the level of creative play". Furthermore, they suggest that tot lots with houses, water areas and moveable and interactive equipment are much more stimulating for young children than traditional play attractions.

Water, Hurtwood (1968) suggests, has endless design possibilities, providing a large array of interactions with children. Hendricks agrees that water is now one of the most popular attractions in playground design.

SCALE AND SURROUNDINGS

Scale is very important when it comes to the design of play areas for young children. Small children, Hurtwood notes, do not feel comfortable in large open areas; they need a space that they can handle and feel safe in. They also need spaces in which they can potentially hide from their parents in an attempt to feel independent. It is for the designer to decide whether spaces with different scales would designate different play areas and serve other functions such as seating areas or strollers' areas.

Hendricks (2002) suggests that a minimum size of 2000 square meters is necessary to create a well rounded and balanced play environment for pre-school children. She notes that smaller play areas with enough space for a slide, swing and sandbox tend to be boring, reducing the number of hours children play outside.

The site for a tot lot should be considered very carefully. Areas with high vehicular traffic should be avoided, and residential areas are preferable. The transparency of buildings adjacent to the tot lot is also important; "vigilant eyes" from residents can intimidate any sort of doubtful activity such as adolescents smoking, people with animals, or individuals that might pose a threat to the children.

Surroundings also contribute to the "sheltered feeling" necessary in tot lots. This feeling of comfort is related not only to the size of the tot lots but also to the volumes that surround it. If there is good transition between the tot lot, the street and adjacent buildings the play area can be more harmonious, and the greater the sense of security and calm that parents and children will have. Hurtwood suggests that playgrounds should be considered as a "visual extension" of the surrounding houses. In addition, a buffer zone between tot lot and street is necessary to increase safety in the tot lot, reduce noise and prevent children from running onto the street. The presence of planting, fences and berms is effective in creating a nice transition.

FURNITURE

Equipment serving the tot lot other than play equipment has been grouped under the heading "furniture" in this study. Thus seating, tables, drinking fountains, trashcans, and designated areas for strollers, signage, lighting, and bathrooms among others are discussed here. These elements are seldom mentioned in the playground literature with the same stress as play equipment. Heseltine and Holborn (1987) note that design should not be secondary to play equipment; equipment alone cannot create a good tot lot.

To my knowledge there are no references that specifically address the location of program elements in relation to one another in tot lots. Urban geographer and influential urbanist, William H. Whyte terms this relationship *triangulation*; in which the presence of a food stand in a public open space in relationship to its access and circulation might interfere in the number of people initiating conversations. Whyte's 1980 work on public spaces in New York City recognized that elements such as food, flexible seating, proper access, and sunlight influenced the popularity and use of small urban spaces.¹¹ The location of some of these elements in relation to others can impact circulation patterns, increase or reduce play time, and affect the safety zones required by some play equipment. Young children's play involves a lot of movement and spatial exploration.¹²

SUN AND WIND, LANDSCAPE AND GROUNDSHAPING

Planting can create a nice environment in tot lots; it filters sun light and provides shade. Planting can also be very effective in buffering tot lots and dividing them into areas that are different in scale and function. Children love to touch and smell flowers and plants.

Hurtwood (1968) suggests that large trees are not suitable in tot lots as they can block the sun, and can also release leaves which can fall over sandboxes and create slippery ground. The size of the tot lot and its climatic conditions should dictate the species and the number of trees and shrubs planted.

Young children dislike draughts and whistling winds; they cannot enjoy playing under these circumstances (Hurtwood, 1968).

Shelter and protection from the rain should be provided as well. Public playgrounds should both be located in sites with sun exposure and be well drained. Overall a pleasant environment brings people.

¹¹ Whyte, William H., *The Social Life of Small Urban Spaces* (Washington, DC: Conservation Foundation, 1980).

¹² Hendricks, Barbara E. *Design for Play* (Burlington: Ashgate Publishing Company, 2001), 116.

SAFETY AND MANAGEMENT

A safe and well managed play environment is vital for the success of a tot lot. Heseltine and Holborn (1987) suggest that problems with maintenance, equipment, and layout design are among the main causes of accidents in playgrounds. While the playground designer is accountable to reduce maintenance to a minimum, a maintenance schedule is still necessary to keep the area fresh, clean and safe for the children.

Management is very much related to the available budget cites set aside for tot lots and the importance given to urban recreation. A strong community can improve management issues that directly affect the maintenance and quality of the tot lots.

SOCIAL FUNCTION AND COMMUNITY

The success of tot lots depends heavily on the people who use them. Organized activities, birthday celebrations and special events can be put into practice bringing children and parents together. The social function of tot lots is perhaps the most important factor, but the most difficult to create and maintain. Neighborhood associations or a group of parents willing to arrange activities can develop a setting for social interactions in public tot lots. Hendricks suggests that socialization is especially important for the children.

One of the essential criteria for children's play is other children to play with... children's play is full of practicing at being social, at developing group norms, at coming to know how to use both body and spoken language to express meaning and feeling.¹³

Heseltine and Holborn note that although the presence of other children is important, there is a preference for children to play *in the company of* other children rather than *with the children*.¹⁴ This is interesting because the literature seems to focus mainly on play time, but little on other activities such as reading, eating, dancing, that can trigger interactions among children and parents. The provision of areas that encourage these secondary activities are as important as the provision of play equipment.

¹³ Hendricks, Barbara E. *Design for Play* (Burlington: Ashgate Publishing Company, 2001), 116.

¹⁴ Heseltine, Peter and John Holborn, *Playgrounds* (London: The Mitchell Publishing Company: 1987), 18.

PROXIMITY, ACCESSIBILITY AND FREQUENCY OF USE

Public tot lots should be easily accessible to neighborhood residents, so they can be an important part of everyday children's play. They should not be further than a 10 minute walk away (1 mile) from where the children reside. Their location in relation to homes is closely related to frequency of use; the likelihood of children playing in tot lots decreases as the distance from home increases.

II. CAMBRIDGE TOT LOTS

Mid-Cambridge

With a population of 13,285, Mid-Cambridge is one of the most populous neighborhoods in the city of Cambridge and it is the third most dense in the city with 45 persons per acre (See Figs.01 and 02). The area ranks amongst the highest in non-family households, with the lowest number of persons per households (1.76)¹⁵ mainly because it is located between MIT and Harvard University. In 1990, only 36% of all residents in Mid-Cambridge had lived in the same house for more than 5 years. In 2000, 30.8% of available units were owned while 64% were rented and 5.2% vacant. This is important because it might impact the use and provision of open space and playgrounds more frequently than less transient neighborhoods in Cambridge. Despite its transient population of students, Mid-Cambridge has strong community organizations dealing with recreation and open space. Both the Mid-Cambridge City Park Committee and the Longfellow Neighborhood Council organize park activities and encourage residents to be involved in improvements and maintenance of parks in the neighborhood.

¹⁵ Non-family household: solo dwellers and unrelated adults living together as roommates. The Cambridge Community Development Department and the Mid-Cambridge Neighborhood Committee, *Mid-Cambridge Neighborhood Study* (Cambridge, MA, 1993), 14.

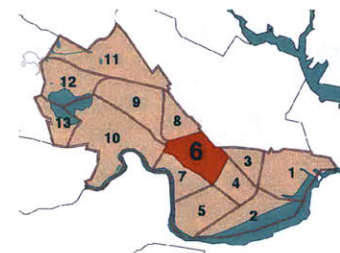


Figure 01. Cambridge Neighborhood Map.

	Population Density 1980 to 2000							
	Square Miles	Acres	Persons per Acre			Persons per Square Mile		
			1980	1990	2000	1980	1990	2000
Citywide	6.36	4,069	23	24	25	14,993	15,068	15,942
EAST CAMBRIDGE	0.63	406	13	14	18	8,479	9,114	11,496
MIT / AREA 2	0.36	232	20	22	24	13,060	14,328	15,128
WELLINGTON HARRINGTON	0.24	152	48	48	48	30,826	30,437	31,007
AREA IV	0.30	192	34	34	38	21,819	21,912	24,260
CAMBRIDGEPORT	0.53	341	25	27	29	16,271	17,078	18,864
MID-CAMBRIDGE	0.47	298	45	44	45	28,817	27,939	28,538
RIVERSIDE	0.31	200	50	52	56	32,073	33,369	35,829
AGASSIZ	0.29	188	28	27	28	18,203	17,550	17,832
NEIGHBORHOOD 9	0.64	408	26	27	29	16,701	17,523	18,504
NEIGHBORHOOD 10	1.09	697	12	12	12	7,875	7,586	7,478
NORTH CAMBRIDGE	0.85	547	20	19	21	12,859	12,451	13,148
CAMBRIDGE HIGHLANDS	0.43	273	4	2	2	2,643	1,364	1,577
STRAWBERRY HILL	0.21	135	19	20	17	12,163	12,789	11,068

Source: U. S. Census Bureau, UDAP Analysis of Cambridge Neighborhoods, 1990.

Cambridge Neighborhoods

1. East Cambridge
2. MIT/Area 2
3. Wellington-Harrington
4. Area 4
5. Cambridgeport
6. Mid-Cambridge
7. Riverside
8. Agassiz
9. Area 9
10. Area 10
11. North Cambridge
12. Cambridge Highlands
13. Strawberry Hill

Figure 02. Cambridge Population Density

I began my site inquiry by establishing criteria for the selection of tot lots to study. The first criterion was *success*; and the number of users was the main measurement of success. During my informal observations I had noticed a greater number of people in Cooper Square, which led me to believe that this tot lot was the most popular of the three tot lots researched. I would venture to say that Cooper Square is one of the most popular tot lots in the city of Cambridge, although I do not have enough evidence to confirm this.

The second criterion was *concentration*. The tot lots had to be in close proximity to one another (not more than a five minute walk), and be located in the same neighborhood. This was important because it meant that they were likely to have similar maintenance schedules, management and demographics.¹⁶ Socio-economic characteristics of the users would theoretically be similar assuming that the majority of tot lot users would be from Mid-Cambridge and adjacent neighborhoods. As a result, variations in their success would most likely be related to the physical attributes of the spaces themselves, including location. Proximity also had the additional benefit of facilitating the research. Important to note is that the data from the 2000 United Census Bureau for the City of Cambridge only go up to the blockgroup level.¹⁷ Therefore, I was not able to identify if there is a distinct concentration of households with young children living near the tot lots studied.

The third criterion was *affiliation*. The tot lots could not be attached to a school or be owned by a private institution. This is important for three reasons. First, it ensured that they would not be directly associated with school activities. Second, it ensured that the tot lots were accessible to anyone who wished to bring their children to play during day time.¹⁸ Lastly, it meant that they would have the same maintenance and management entities, in this case the Department of Public Works of the City of Cambridge.

¹⁶ This information was confirmed by the Division of Parks and Buildings Operations at the Public Works Department who handle the maintenance and management of three tot lots in this study.

¹⁷ Bureau of the Census, *City of Cambridge Neighborhood Demographics, 2000*, prepared by the City of Cambridge Geographic Information System, Census SF1 [data online]; accessed April, 2003; available from <http://www.cambridgema.gov/~CDD/data/index.html>; Internet.

¹⁸ Operation hours of public tot lots in Cambridge are from morning until dusk.

The fourth criterion was *scale*. The tot lots had to be small urban spaces, considered as residential neighborhood parks, with similar areas. Compatible scales ensured that the tot lots had similar optimal capacities, so the number of users could potentially be compared amongst them. From the total network of parks in Cambridge, the smallest tot lots found were 0.1 acres; thus 0.2 acres was the maximum area selected as the scale criterion. This criterion is more restrictive than that proposed by Hendricks who felt that a minimum of 0.5 acres (2000m²) was necessary to design a good play area.

Each tot lot selected had to satisfy the criteria above. Consequently, the three tot lots studied in this thesis are located in Mid-Cambridge (See Fig. 03 and 04). I also researched *CambridgePort* and *Area 4*, neighborhoods adjacent to Mid-Cambridge. Neither had a combination of tot lots that met all the criteria established for the study.

Mid-Cambridge is the neighborhood in which I have lived for two years. These small urban spaces have been a part of my quotidian life as they are along the path of my daily activities. This is an important factor to consider if you are the only person conducting observations, I did not consider researching tot lots in Boston because I could not guarantee consistency in the site visits.

Maple Avenue Park, *Cooper Square* (commonly known as Hancock Park) and *Wilder/Lee Park* are part of a network of tot lots in the city of Cambridge. Mid-Cambridge and CambridgePort each contain the highest number of tot lots (7), from a total of 51 tot lots in the city.¹⁹ It is important to note that only 11.15% of the Mid-Cambridge's total population is less than 18 years old. Since fewer children play outside during the winter months, and the few that do play outside usually concentrate in the tot lot with the greatest number of children, this might explain the uneven distribution of users in the three tot lots researched. These three tot lots are less than a five minute walk away from one another, are managed by the Department of Public Works and are each less than 0.2 acres.

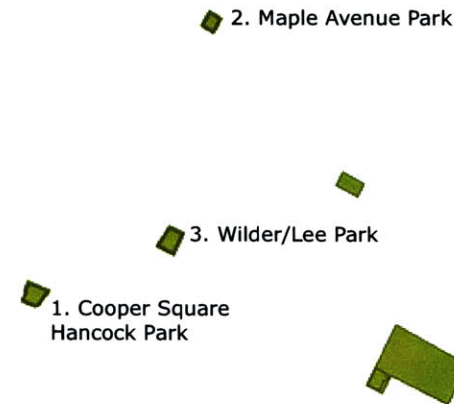


Figure 03. Surveyed tot lots diagram.

¹⁹ Community Development Department, City of Cambridge, *Report of Green Ribbon Open Space Committee* (Cambridge: March, 2000), 44.



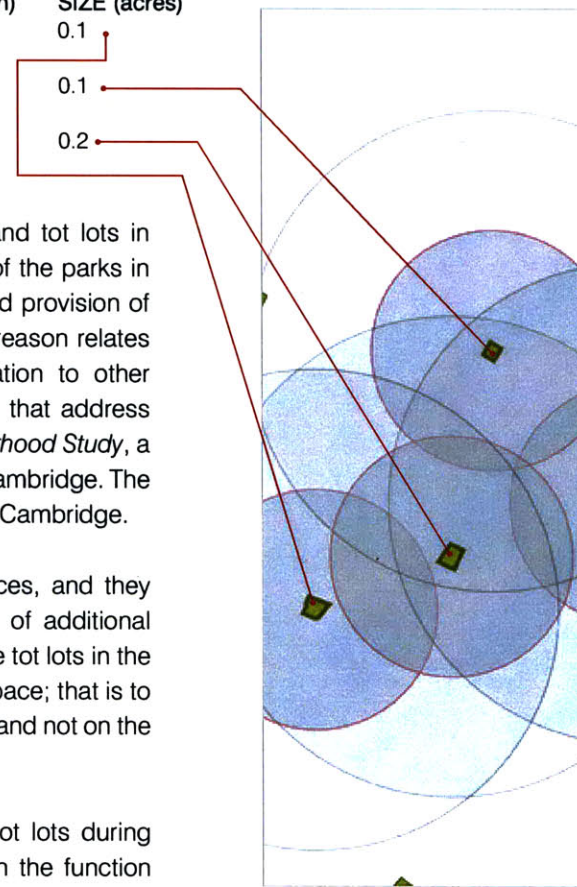
Figure 04. Map of Mid-Cambridge.

PARK	LOCATION	NEIGHBORHOOD	DATE (last redesign)	SIZE (acres)
1. Cooper Square <i>Playground-tot lot</i>	Hancock St.	Mid-Cambridge	1997	0.1
2. Maple Avenue Park <i>Playground-tot lot</i>	Maple Ave.	Mid-Cambridge	1985	0.1
3. Wilder/Lee park <i>Playground-tot lot, passive use</i>	Lee Street	Mid-Cambridge	1998	0.2

I have turned to the city for more information about public open spaces and tot lots in Cambridge for two reasons. The first reason relates to context; an overview of the parks in Cambridge could potentially provide general information about the quality and provision of the tot lots, otherwise not evident in the three tot lots surveyed. The second reason relates to demographics; how do Mid-Cambridge open spaces compare in relation to other neighborhoods in Cambridge? To my knowledge there are only two studies that address open space issues in Mid-Cambridge. The first is the *Mid-Cambridge Neighborhood Study*, a comprehensive study that looks at planning and neighborhood issues in Mid-Cambridge. The second is the *Green Ribbon Study* that identifies all open spaces in the City of Cambridge.

Both studies provide recommendations for recreation areas and open spaces, and they indicate that Mid-Cambridge is amongst the neighborhoods in most need of additional open space. The *Green Ribbon Study* specifically mentioned the need for more tot lots in the neighborhood. Both studies based their findings primarily on the quantity of space; that is to say, they identify *areas in need* of open spaces solely based on demographics and not on the quality of existing open spaces in Cambridge.

This takes us back to the uneven user distribution observed in the three tot lots during research. This uneven distribution might indicate the need for adjustment in the function and use of open spaces in Mid-Cambridge, rather than the creation of new spaces. One of the city's goals in managing these spaces should be to maintain an optimal usage and even distribution of users across the tot lots. There are many factors that can trigger uneven distribution of tot lot users, but they are beyond the scope of this study. I will focus only on factors that contribute to the quality of tot lots.



The Mid-Cambridge Neighborhood Study

The *Mid-Cambridge Neighborhood Study* is part of an ongoing effort by the Community Development Department (CDD) to conduct comprehensive studies on subjects ranging from neighborhood demographics to urban infrastructure including parks and recreation areas, in thirteen neighborhoods in the city of Cambridge. Produced in 1993, by a joint CDD and community study committee, this study analyzed the major planning problems and concerns.²⁰

²⁰ The Cambridge Community Development Department and the Mid-Cambridge Neighborhood Committee, *Mid-Cambridge Neighborhood Study* (Cambridge, MA, 1993), 3.

Population by Neighborhood					
Area	pop 2000	Public Open Space (acres)	Public Open Space Acres per 1000 Total Population	pop 2000 under 18	Public Open Space Acres per 1000 Population under 18
East Cambridge/Area 1	7294	17.6	2.4	780	22.6
MIT/Area 2	5486	16.8	3.1	223	75.3
Wellington-Harrington/Area 3	7345	7.9	1.1	1416	5.6
Neighborhood 4	7263	5.3	0.7	1656	3.2
Cambridgeport/Area 5	10052	26.8	2.7	1481	18.1
Mid-Cambridge/Area 6	13285	4.6	0.3	1136	4.1
Riverside/Area 7	11201	16.1	1.4	945	17.0
Agassiz/Area 8	5241	1.3	0.2	397	3.3
Neighborhood 9	11794	70.3	6.0	1542	45.6
Neighborhood 10	8149	39.6	4.9	1095	36.2
North Cambridge/Area 11	11237	136.9	12.2	2191	62.5
Cambridge Highlands/Area 12	673	69.1	102.7	75	921.3
Strawberry Hill/Area 13	2335	80.6	34.5	510	158.0
Citywide	101355	492.9	5	13447	36.7

Sources: U. S. Census Bureau, *Analysis of Cambridge Neighborhoods, 1980*; U. S. Census Bureau, *STF 1B file, 1990*; U. S. Census Bureau, *PL 94-171 file as adjusted by Cambridge Community Development, 2000*.

Figure 05. Cambridge Population by Neighborhood.

Open space was one of the issues addressed in the study. The high population density in Mid-Cambridge limits the City's ability to acquire and create new open spaces in the neighborhood. Mid-Cambridge has the second lowest ratio of open space per people amongst all neighborhoods in Cambridge, 0.3 acres per 1,000 people, Agassiz is the only neighborhood with a lower ratio of 0.2 acres of open space per 1,000 people (See Fig. 05). If we consider only the population under 18 years old the ratio increases to 4.0 acres of open space per 1,000. However, it continues to be the second lowest ratio of open space per 1,000 population under 18 years old amongst all neighborhoods in Cambridge.

Cambridge has adopted the standards produced over three decades ago by the National Recreation and Parks Association (NRPA) which recommended a minimal of 4.0 acres of playing space per 1,000 population.²¹ This ratio is lower than the British Six Acre Standard per 1,000 population recommended by The National Playing Fields Association.²²

A random telephone survey of Mid-Cambridge residents was used in this study. Among the 66 questions were ones related to open space. Both the availability and condition of parks in Mid-Cambridge were seen as either major or minor concerns by over 80% of survey respondents.

Views of Park Availability and Condition

	Availability	Condition
Major Concern	39%	41%
Minor Concern	43%	41%
Not a concern	19%	18%

Source: Atlantic Marketing Research Corp. 1993

Surprisingly, the study notes that respondents without children in school rated park availability as a major concern just as often as those with children in school (45% vs. 46%). A greater share of those with children in school (55%) viewed the condition of open space to be a major concern, as compared to 39% of those without children. The study concludes that Mid-Cambridge ranks among the Cambridge neighborhoods most in need of additional open space.

The study briefly notes that better communication is needed between the City and the neighborhood residents concerning park use and design issues, as well as in specific conflicts over use. There was a strong interest for cultural events in the parks, such as art work installations, or performances for adults during the evenings. Community residents have also requested "pocket parks with sitting areas".

²¹ National, Recreation and Parks Association, Parks, Recreation, Open Space and Greenway Guidelines (NRPA, 1996).

²² http://www.southglos.gov.uk/development_control/design_advice/desad10.htm#PROBLEMS%20OF%20PLAY%20SPACE%20PROVISION

The Green Ribbon Study

The *Green Ribbon Study* looked at all open spaces in the city in an attempt to assess neighborhoods in need of open space. This study, too, identifies Mid-Cambridge as one of the neighborhoods in most need of open space in the city of Cambridge.

Seeking a systematic approach to open space acquisition, the city manager appointed a 17-member Green Ribbon Open Space Committee in February 1999 to develop criteria for expanding and improving the city's open space system. With the use of maps, demographic data, and an inventory of existing open space, they have determined current ratios of open space per 1,000 people. Mid-Cambridge is one of the areas with the least open space per 1,000 people.²³

²³ Community Development Department, City of Cambridge, *Report of Green Ribbon Open Space Committee* (Cambridge: March, 2000), 14.

In addition, the study identified *Areas of Need* for each park type. According to the standards set by NRPA, all public open spaces in the city are classified into three different park types; tot lots, neighborhood parks and community parks, and natural resources parks and park trails. Areas where the ratio of open space per thousand people was low (less than 4 acres per 1000 people) were termed as areas of need and the type of parks that those areas lacked were identified. The study has determined the top priorities among those areas; areas with the following characteristics were given priority:

- Low and moderate income-households
- Relatively fewer acres of open space per 1,000 residents
- Smaller than average residential lot sizes
- A higher density of children

The study concluded that Mid-Cambridge is at the top of the priority list for community parks and Central-Square (the commercial strip along Massachusetts Avenue that encompasses Mid-Cambridge and Area 4) is the top priority for tot lots.

The need for additional tot lots increases if one considers NRPA's definition that a tot lot should serve residences within a ¼ mile radius circle from the center of the tot lot as compared to a greater ½ mile circle. Thus this study has adopted a ½ mile (10 minute walk) radius.

Neither study discusses playground equipment needs or the restructuring and distribution of tot lots. Most importantly, they do not address optimal capacity levels or the performance of existing open spaces. The study focuses primarily on demographic indexes and the ratios of public open space per population. Cities need to budget for the monitoring and evaluation of their existing open spaces prior to considering the creation of new ones.

III. THE THREE-STEP RESEARCH PROCESS

"My child likes this playground mainly because he can play with his friends who come here".

survey respondent profile:

female

age not reported

child: 5 years old

Cooper Square

April, 2003

The Three-Step Research Process

The methodology I have used to study these tot lots is inspired by William H. Whyte's²⁴ detailed observation studies of the small urban spaces in New York stimulated by incentive zoning²⁵. The relevance of his work to this thesis lies in the process he used to document these spaces. His observations have become a powerful tool in evaluating public spaces and human behavioral patterns. In addition, his studies have provided designers, planners and city officials with improved indicators and a clear program for open spaces and urban design regulations in New York.

This study's methodology has three parts;

1. *A literature review on small urban spaces and good playground programs.* This literature provided the background knowledge and research elements used in this thesis. My list of attributes of goodness in playgrounds was compiled from this literature. This list helped me to produce the written questionnaire and to be more acute during in situ observations of the tot lots. From the list of attributes, I was able to produce a matrix in which I would record the information obtained from the written questionnaire.
2. *Written survey questionnaire.* This survey provides the primary insight into what adult tot lot users perceive as being good elements in tot lots. Parents, guardians and other adults responded to this written questionnaire while in the tot lots. (See questionnaire, page 35)
3. *In situ observations of tot lots in use.* The observations not only allowed me to document the physical elements of the tot lots (See pages 38-40), but also to record sun and shade patterns, concentrations of children, most popular equipment, social interactions among adults and children, trash cans, drinking fountains, etc.

²⁴ Whyte, William H., *Social Life of Small Urban Spaces*. (Washington, D.C.: Conservation Foundation: 1980)

²⁵ Today's Zoning Resolution was adopted in 1961, after lengthy discussion and public debate. It coordinated use and bulk regulations and incorporated parking requirements. It introduced the concept of incentive zoning by offering a bonus of extra floor area to encourage developers of office buildings and apartment towers to provide public spaces. <http://www.nylcv.org/guide/issues/uluzoning.html> Urban land "Zoning, Shaping the Skyline...and Beyond". NYC Citizen's Guide to Government and the Urban Environment, Accessed May, 1st 2003.

Data collection

I established a circuit to ensure consistency in my visits to the tot lots. I would start at Wilder/ Lee Park, then proceed to Maple Avenue Park, and lastly to Cooper Square. If there was no one in a tot lot, I would wait for 15 minutes. Every adult that was in each tot lot would be approached. If there were couples watching the same children I would ask only one to complete the written questionnaire. I would introduce myself as a graduate student pursuing a Masters degree at MIT, with an interest in tot lots. I did not give additional information until they had finished the survey. I had three folders, so a total of three respondents could be answering the questions at the same time. Occasionally, potential respondents left the tot lot before I had a chance to approach them, but I made every attempt to approach all the adults in each tot lot, including the ones with no children. The duration of my stay in each tot lot would vary depending on the number of users; however it did not exceed half an hour.

I repeated this process over three weeks, three times a week, twice on a week day and once on a weekend day, alternating morning and afternoon. While respondents answered the survey I continued with my observations. Each park was visited the same number of times, and according to the predefined circuit (See Fig. 06). It quickly became apparent that there was an uneven distribution of users amongst the tot lots surveyed. In an attempt to overcome this I repeated the circuit once more and visited the tot lots once again to see if new users had appeared in the tot lots. The uneven distribution remained.

As a result, the information collected is mainly from Cooper Square (commonly known as Hancock Park) with 40 respondents, followed by Maple Avenue Park with 5 respondents; and Wilder/Lee Park with only 2 respondents for a total of 47 respondents. The unequal usage is, in itself, an important finding because the tot lots have been observed in the same way during this study.



Figure 06. Tot lots circuit.

Interesting patterns emerged from this process. If the first respondent I approached complained (often there were complaints about the fact that they had to write) or did not receive me well, the next people I approached were skeptical and their answers were usually very short. The opposite was also true. If the first respondent smiled and gladly took the folder, subsequent respondents were welcoming and took the proper time to answer the questionnaire. This might have affected the answers for open-ended questions, where answers could vary considerably; respondents that rushed through the questionnaire often did not answer the last questions.

Questionnaire

The survey instrument was composed of 7 main questions. It combined open-ended questions (those to which the respondent could give any response) and questions with a specific range of answers. The instrument asked three broad categories of questions: general demographics (age, children's age, nationality and gender), location (residence proximity to the tot lots and reasons for being there), and quality and condition (the attributes of goodness) of the tot lot in use.

Whenever respondents failed to answer any of the questions. For example if the respondents did not give information about his/her age or gender. I chose not to answer the questions for them in order to avoid wrong assumptions on my part. There were times when respondents would place the folder next to my purse while I was approaching another respondent so I could not tell who the last respondent had been. For that reason there are a number of incomplete responses among the surveys.

MIT – Massachusetts Institute of Technology
DEPARTMENT OF URBAN STUDIES AND PLANNING (DUSP)
Survey Questionnaire – parents and guardians **SAMPLE** Week # _____ insert date

Where are you now? (please circle one)
Cooper Square (Hancock Park) **Maple Avenue Park** **Wilder/Lee Park**

1. What brought you to this place today? How did you find out about this place originally?
2. How often do you come here? Is this playground the one your child (ren) use the most? Explain why or why not.
3. How far away do you live from here? Give time estimates; for example: 5min walking or 10 min driving etc...
4. What do you normally do while here? Name more than one activity if you wish.
5. Is this the playground your child (children) enjoy(s) the most? What does he/she enjoys the most about it?
6. Perhaps, name a few things you would improve in this place, if anything.
7. What do you find SPECIAL about this place? What do you think your child finds SPECIAL about this place?

your GENDER Male Female CHILD(REN) AGE(S)
(please circle one) your AGE 20-30 31-40 41-50 50-60 >60 NATIONALITY _____
(please circle one)

Thank you very much for participating in this survey!

Time constraints and the fact that I was the sole researcher were the reasons for using a written survey as opposed to conducting oral interviews; a written questionnaire generated quick responses and allowed for consistency in the interpretation of the data.

I realized early in this process that people find it easier to talk than to write. Sometimes people approached me with inquiries about what I was doing; when I explained they soon started talking. Some respondents wrote little but they were willing to talk, and I would often ask the same questions that were in the questionnaire and get much longer answers verbally. Whenever additional information was given by respondents after they had finished the questions, I recorded it, and the comments have also been inserted in the matrix.

Observation

Observation can be a powerful tool to evaluate, identify and test the quality and performance of urban open spaces. I have particularly relied on the work of Whyte, Sommer, Hall, Michelson and Mercer to inform me about the general behavioral patterns of people in public spaces and observation methods.²⁶ This background knowledge made me more acute as an observer and allowed my process to be consistent and efficient. Therefore, I became aware that people usually prefer to sit and gather at the perimeter of a space rather than in the center, that food usually attracts people, that parents are always watching and following their children in playgrounds, and that they tend to converse if their children start playing together.

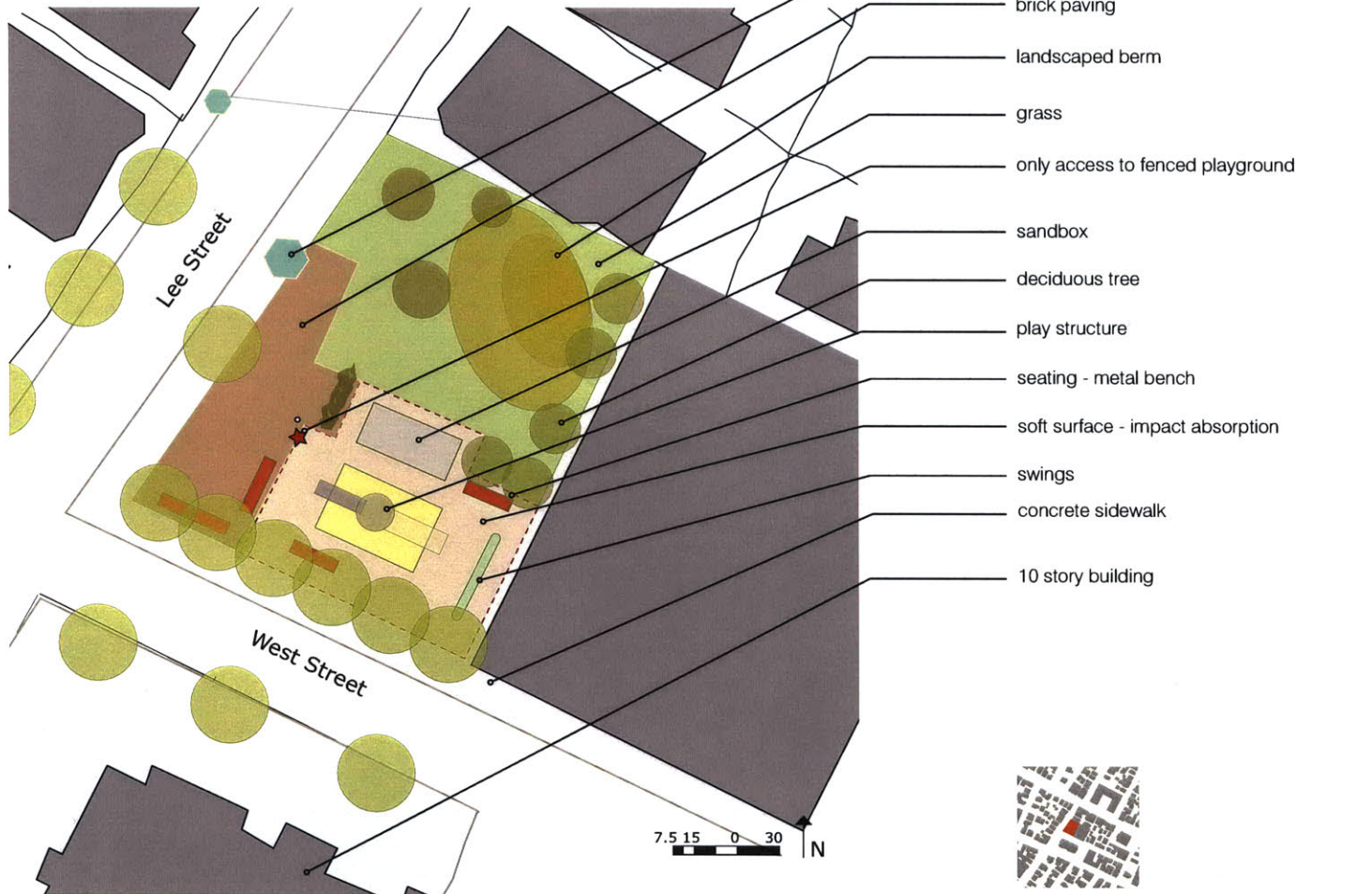
Observing the tot lots involved two types of attributes. The first was a recording of static elements, the physical attributes of that space: surroundings, playground equipment, trees, fences, furniture etc. To document these elements I used sketches and photographs to produce the plans for each tot lot. The chart exemplifies one set of observations as part of the documentation for each tot lot (See chart, page 37) . In addition, the plans illustrate each tot lot, its context, position of play equipment, and a list of physical elements (See plans, pages 38-40).

²⁶ Whyte, William H., *Social Life of Small Urban Spaces*. (Washington, D.C.: Conservation Foundation: 1980). Hall, Edward T., *The Hidden Dimension* (New York: Doubleday & Co.:1966); Charles Mercer, *Living in Cities: Psychology and the Urban Environment* (Penguin Books Ltd, London: 1975); Robert Sommer, *Personal Space: the Behavioral Basics of Design* (Englewood Cliffs, N. J.: Prentice-Hall: 1969); and William Michelson, *Environmental Choice, Human Behavior and Residential Satisfaction*.

Small Urban Spaces: Programming for Good Tot Lots

The Three-Step Research Process

WILDER/LEE PARK

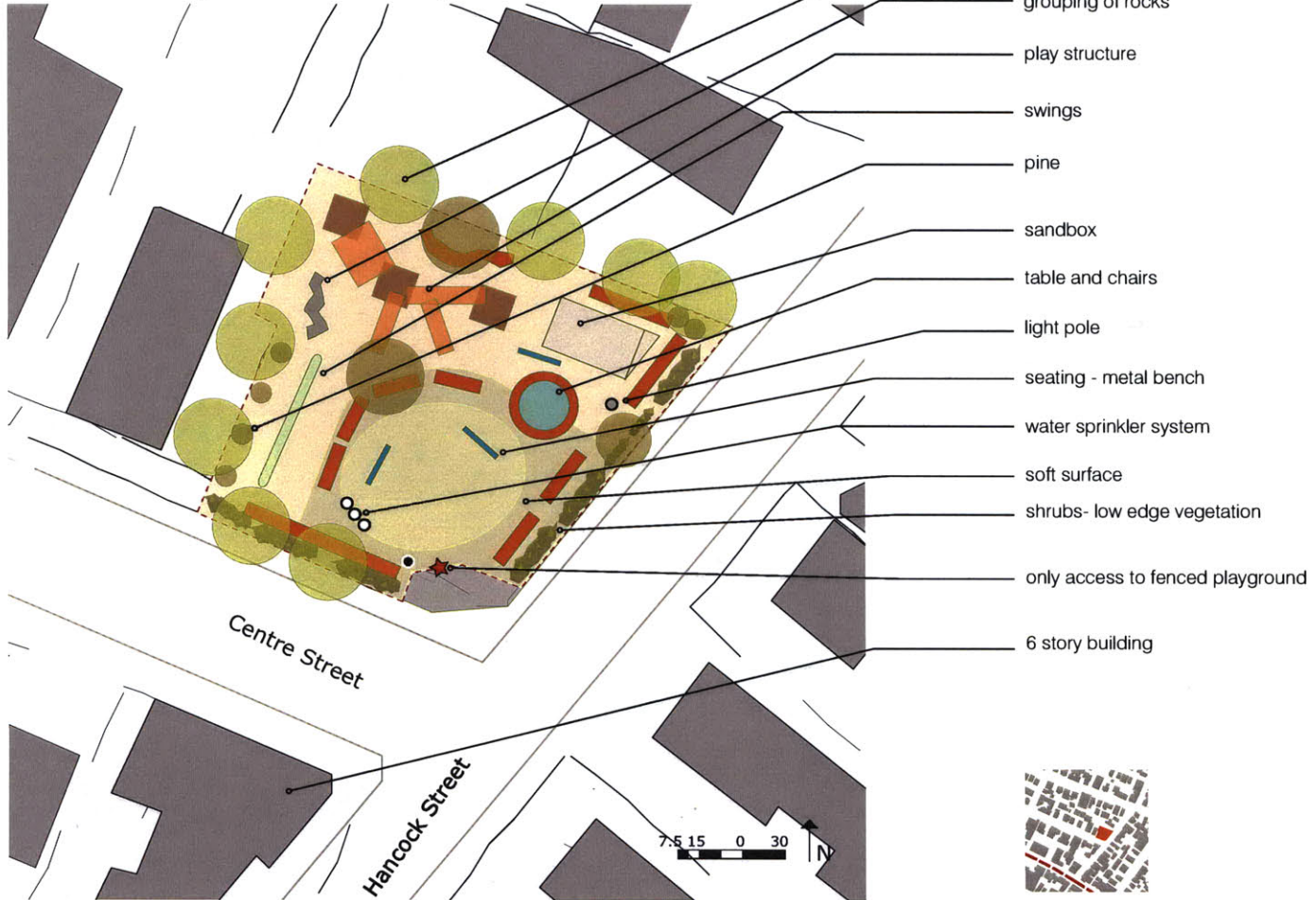


PARK	LOCATION	NEIGHBORHOOD	DATE(of last redesign)	SIZE (acres)	figure-ground map locator
Wilder/Lee park Playground-totlot, passive use	Lee Street	Mid-Cambridge	1998	0.2	

Small Urban Spaces: Programming for Good Tot Lots

The Three-Step Research Process

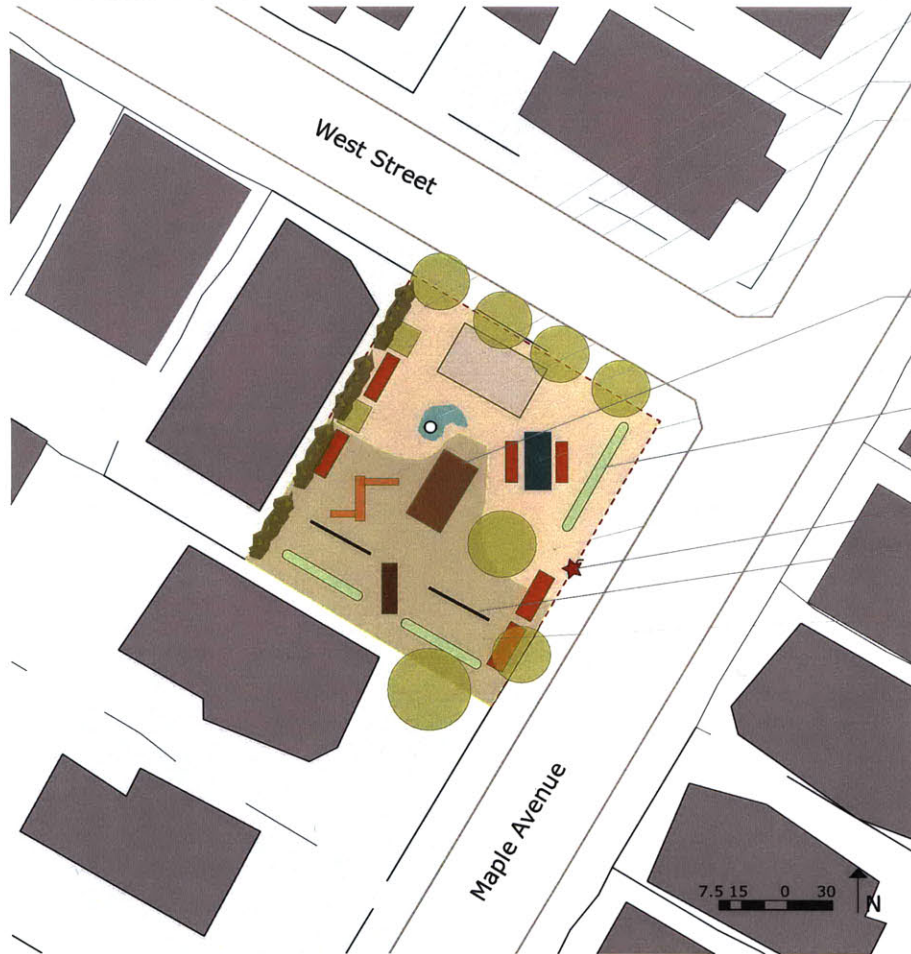
COOPER SQUARE (Known as Hancock Park)



PARK	LOCATION	NEIGHBORHOOD	DATE (of last redesign)	SIZE (acres)	figure-ground map locator
Cooper Square Playground-tot lot	Hancock Street	Mid-Cambridge	1997	0.2	

Small Urban Spaces: Programming for Good Tot Lots

MAPLE AVENUE PARK



The Three-Step Research Process

- deciduous tree
- shrub-edge landscape
- planting box
- sandbox
- water spray
- wooden play structures
- metal wire-frame fire truck
- table and chairs
- swings
- hard surface - asphalt
- only access to fenced play area
- wooden fence - swing protection
- soft surface - sand

PARK	LOCATION	NEIGHBORHOOD	DATE (of last redesign)	SIZE (acres)
Maple Avenue Park Playground-tot lot	Maple Ave.	Mid-Cambridge	1985	0.1



figure-ground map locator

The second set of observations was of dynamic elements: sun, wind and activities. For this I used a chart (See chart, page 37) on which I recorded the dynamic elements and main patterns of activities. When the tot lots were full of parents and their children running around, recording dynamic elements became quite challenging, since I was the only tot lot observer in this study. It would have been ideal to have several observers, some focused only on the children, others only on the adults. A video camera (used in Whyte's study) would have been helpful, although it would have introduced other issues.

In short, the methodology applied in this study is fairly simple. Yet, its findings can be quite helpful in assessing the quality and performance of small urban spaces. Furthermore, it has shown to be effective in identifying the elements that make a good tot lot. This process should provide designers, planners, city officials, and even community members with valuable tools to evaluate, assess and program the use and management of small urban spaces in their neighborhoods.

IV. THE ATTRIBUTES OF GOODNESS: ANALYSIS AND FINDINGS

"It seems to be a good playground. Whenever I walk by I always see young children playing with other kids and parents."

survey respondent profile:
male 20-30

no children

Maple Avenue Park

April, 2003

The Attributes of Goodness

What makes a good tot lot? The analysis and findings discussed in this chapter derive from the literature review on small urban spaces and playgrounds, the written questionnaire, and my own set of observations. I will begin by explaining how the data from the survey were analyzed through a matrix. Then, I will discuss the attributes of goodness revealed by the literature on playgrounds; interestingly, the attributes alluded to by most survey respondents were the ones identified in the literature. These attributes were: *play equipment, scale, sun and shade, safety and management*. Then, I will discuss the attributes of goodness which have not been raised by playground experts; these attributes are drawn mainly from my own set of observations. These were: *furniture, surroundings, landscaping, optimal capacity, social function, accessibility, proximity, and frequency of use*.

Matrix

The written questionnaire data were sorted into a matrix (See Appendix A). The responses were arranged according to the attributes obtained from the literature review on small urban spaces and playgrounds. In addition, general information on each respondent along with the date, time and temperature of the survey were recorded for each respondent (See Fig.07). While each column corresponds to one attribute, each line of the matrix represents one respondent; I have maintained their exact wording. The responses have been grouped by *temperature* (questionnaires from days in which the temperature was around 40°F/4.4°C have been grouped together and so forth). I have grouped them by temperature because *good weather* seems to determine the number of tot lot users during the winter months. In warmer days weather seemed to be the main answer to the question: *What brought you to this place today?*

Seeking for possible relationships between the attributes of goodness and the profile of respondents, I produced cross-tabulations between independent variables (age, gender, nationality) and various dependent variables (attributes cited). Much to my disappointment, there was no relation detected. This lack of relationship between variables might be explained by the small sample of respondents (n=47), and the fact that parents all share the same concerns and expectations, regardless of age, gender or ethnicity.

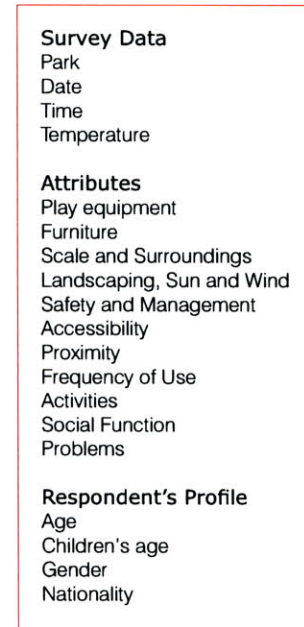


Figure 07. Main structure of the matrix.

The tot lots studied in Mid-Cambridge did not have all the features listed below (See Fig.08). If one tot lot did not have a water feature, for example, this feature (water) was accounted for only if mentioned by survey respondents. Question 6 of the questionnaire, (*Perhaps, name a few things you would improve in this place, if anything*); usually prompted responses relating to the lack of play equipment, condition and maintenance issues. While it was possible to compare the three tot lots in terms of their physical and spatial qualities; the disproportion of users amongst them only allows me to discuss what people perceived as being good (resulting from the written survey) in Cooper Square, the tot lot with the greatest number of users.

What do people consider to be good in Cooper Square?

By identifying the attributes that contribute to Cooper Square's success I will, at the same time, discuss the other two tot lots, Maple Avenue Park and Wilder/Lee Park. Depending on the attribute of goodness, the reader will find that the three-step research process (the literature review, the observations and the written survey) provides different degrees of information, which vary from attribute to attribute.

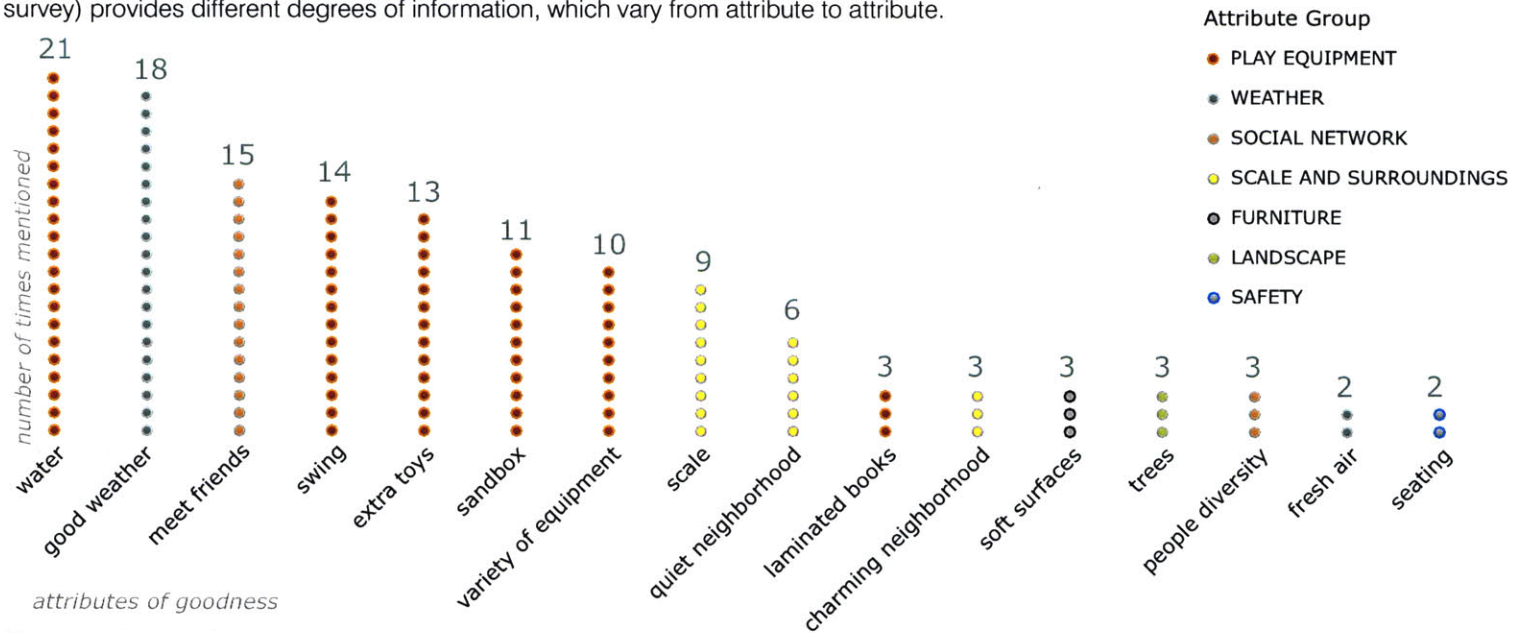


Figure 08. Number of times the attributes above were mentioned during the written questionnaire.

PLAY EQUIPMENT

Variety of play equipment seems to be an important factor for the success of Cooper Square. I have observed children playing with at least three different toys in less than one hour of observations. The survey questions that triggered responses regarding play equipment are as follows:

- *Is this the playground your child (children) enjoy(s) the most? What does he/she enjoys the most about it?*
- *Is this playground the one your child (children) use(s) the most? Explain why or why not.*
- *What brought you to this place today?*

Play equipment was mentioned 51 times (including the water feature, a total of 72 times) in the written questionnaire. From a total of 47 respondents, 44% mentioned water as the preferred attraction, followed by swings (30%), donated extra toys (28%), and sand boxes (24%). Variety of play equipment was specifically mentioned by 21% of respondents. Among the three tot lots Cooper Square is by far the tot lot with most variety of play equipment (See Fig. 09).

The Popular Water Feature

Water was the feature most mentioned by survey respondents in Cooper Square. This was true even though this study was conducted during the winter, and the water feature had not yet been turned on by the city. Some parents noted that in the summer Cooper Square becomes too crowded and children from other neighborhoods come to enjoy the water sprays. While Maple Avenue Park has a water feature; it consists of one shower-like structure and one mother tells me that is not working. Wilder/Lee Park does not have a water feature. In fact Wilder/Lee Park has the least variety of play equipment. During my observations I did not encounter any children playing in this tot lot.

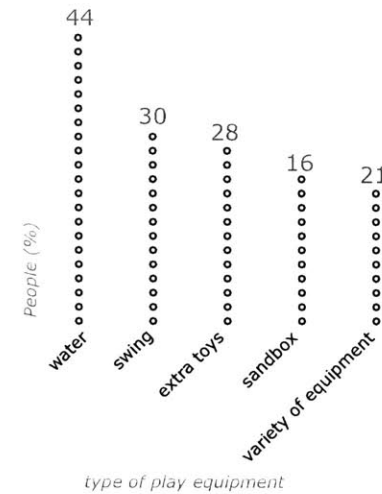


Figure 09. Percentage of people who mentioned play equipment (by type); including *variety of play equipment*.

Donated Toys

At Cooper Square there are moveable toys scattered throughout. One mother tells me that parents prefer to leave the toys, rather than carry them back and forth from home to the tot lot. Thus every child is able to play with these toys. If the family moves from the neighborhood they donate the toys to the tot lot. Children can manipulate these brightly colored toys and freely move them around. Maple Avenue also has scattered toys. However, one mother, who had brought a transportable basketball net, tells me she was afraid of leaving it behind, since older kids usually came to Maple Avenue at night.

Traditional Play: Swings, Slides and Sandboxes

Traditional play equipment is still widely used and appreciated in tot lots. I would disagree with some experts who suggest that traditional play equipment does not encourage creativity by children. Children can imagine they are flying away on a swing, racing on a slide, or arranging volumes of many sorts in a sandbox. During my observations I have seen boys who said they were building a mall with their trucks in the sandbox, girls yelling they were butterflies while swinging, and boys declaring to be the king of the castle while sliding down. Furthermore, the experience these toys provide is valuable for children's development; slides and swings can build confidence because the children have to deal with speed and height. I have also observed parents sliding, and hanging on monkey bars with their children; some equipment allows for adults to play as well.

Laminated Books

During the summer, Cooper Square has laminated children's books attached to benches. These enliven the mere act of sitting down (which for a toddler is quite difficult to do) and allow parents to read with their children and rest from the running around. It is also a great way of dissociating books from homework and school.



Cooper Square

On the whole, I observed that children like to experience as many attractions they can while in the tot lot. It is nearly impossible to track main circulation patterns because they are constantly taking new routes from one attraction to the next. The foot prints in the snow were helpful to confirm that there were no predominant circulation paths at Cooper Square.

Public Art

Art installations can be fun and engage community members from all ages. They usually give a unique character to public open spaces when play equipment tend to be standard throughout tot lots. Wilder/Lee Park is the only tot lot studied with an art installation: a huge throne sculpted from a tree trunk. This sculpture is quite an attraction as I have often observed passers by and pedestrians venturing to seat in it. The following is a clip from the Mid-Cambridge Neighborhood Association newsletter that announced the art installation on Lee Street.

Sculpted Lee Street Elm Is a Gift to the Street

A stately old elm tree, ravaged by Dutch Elm disease last year, was given a new life this summer by local sculptor Mitch Ryerson. Ryerson worked his magic as he sawed and carved away the dead stumps of the huge elm on Lee Street, plus a smaller maple across the street. The result is two handsome throne-like chairs that grace the perimeter of the newly remade playground at the corner of West Street. Ryerson, a furniture maker by profession, has been carving tree stumps in Cambridge for several years. His first project was on Oxford Street across from the Oxford Spa. Since then, an elm at Fresh Pond, a silver maple on Hurlbut Street and a maple on Clay Street have all inspired his carving skills. Keeping in contact with city arborist Larry Acosta, Ryerson searches for significant and appropriate possibilities around town. Tree stumps suitable for sculpting must be in good condition (i.e., not rotted), and in an appropriate location. After finding a good prospect, Ryerson talks to neighbors, presents his plan and listens to their concerns. He then applies to the Cambridge Arts Council to fund the project. Often he draws assistance from the high school or the Area 4 Youth Center, involving kids who help strip the bark, sand, and oil-finish the tree stumps.²⁷



Wilder/Lee Park Sculpture Chair.

²⁶ Mid-Cambridge Neighborhood Association. Website accessed April 2003. <http://www.mcna.org/news/oct00.pdf>

SUN AND WIND, LANDSCAPE AND GROUND SHAPING

Good weather was the most common answer to the question:

- *What brought you to this place today?*

I believe this question would have generated different answers during the summer; perhaps respondents would have mentioned favorite tot lot attractions rather than weather condition (See Fig.10). Nevertheless, this shows that people do pleasure being outdoors, enjoying the sun, the breeze and warm weather. It is interesting that the perception of warmth is relative during the winter. Cooper Square had the most number of users the first sunny and warmer day during the winter (which during the winter is around 50°F/10°C).

Respondents also mentioned that Cooper Square has a good balance between sunny and shaded areas, and I have observed that to be the case. Cooper Square has a variety of vegetation that contributes to a pleasant environment. Trees with bigger canopies filter the sunlight into the tot lot and do not block sunlight completely. Thus, Cooper Square appears light and airy. At one extreme, a large frond tree covers most of Wilder/Lee Park leaving the play areas dark and cold. At the other extreme, Maple Avenue Park is devoid of bigger trees which leaves the tot lot unprotected from the sun.

Aside from shallow drainage slopes all three tot lots have a flat surface. Only one respondent wished for more green space at Cooper Square. While half of Wilder/Lee Park is a green lawn and a landscaped area to be used by everyone, Cooper Square and Maple Avenue Park do not have grass areas.

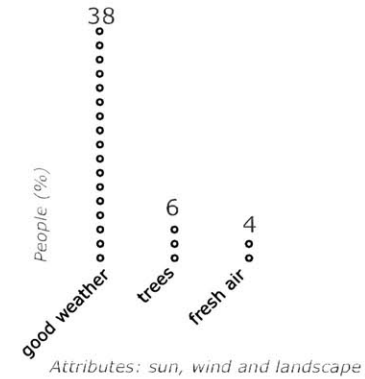


Figure 10. Percentage of people who mentioned elements related to the attributes sun, wind and/or landscape.

When a man sits with a pretty girl for an hour, it seems like a minute. But let him sit on a hot stove for a minute, and it's longer than an hour. That's relativity.

Albert Einstein

Although experts encourage landscaped berms and undulations, I have observed that these would be nearly impossible to design within 0.1 acre spaces and still have the variety of play equipment found at Cooper Square. The water feature would make grass areas harder to maintain, and children would bring dirt to other areas of the tot lot.

Low vegetation such as shrubs and flower beds can be a nice amenity for children in addition to creating buffer zones from the street. One mother tells me that once a week an old woman comes in and takes care of the plants and flowers.

SCALE AND SURROUNDINGS

There are two factors observed in this study that contribute to an appropriate scale for tot lots. The first is the relation between play structures and the size of the tot lot; and the second is the relation between the tot lot and immediate surroundings. A quiet residential neighborhood is the preferred location for tot lots. Questions that triggered survey respondents to comment about the nice, charming or cozy scale of Cooper Square (9 times) and the quiet neighborhood (6 times) were:

- *What brought you to this place today? How did you find out about this place originally?*
- *What do you find SPECIAL about this place? What do you think your child finds SPECIAL about this place?*

While Cooper Square, Maple Avenue, and Wilder/Lee Park occupy an area of 0.1 acres (4,356 sq. ft. or 405m²) each; Cooper Square feels cozier. Why?

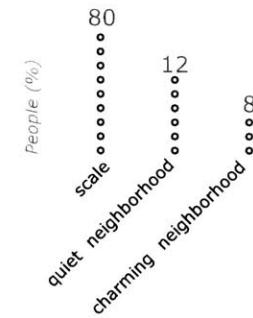


On the way to Maple Avenue Park.

At Cooper Square, vertical elements are layered to create transition and filter light, as well as define circulation and play areas. Shrubs safeguard children from the street while hiding the perimeter metal fence. Tall deciduous trees filter sun light without overshadowing the tot lot with dark areas or falling leaves. Furthermore, the biggest element in the tot is a castle like structure with a variety of play possibilities, from monkey bars, to slides, stairs and bridges. Despite its size, it does not block any views of the tot lot because it sits at the farthest corner, away from the street. Swings and bright blue metal arches contribute to framing the space and creating a well balanced play area.

Conversely, at Maple Avenue, the main play structure is an abstract version of a fire truck. One mother tells me that shortly after it was installed, the children received a visit from fire fighters who parked their truck at the edge of the tot lot for a demonstration of the real thing. Although its rusted metal frame structure does not block any views, it does not contribute to creating a hierarchy among the existing smaller play structures. In addition, the existing trees are not large enough to filter sun light into the tot lot; leaving it exposed most of the day. There are no hiding places for the children. In addition, no vegetation buffers noise from the street or disguises the perimeter metal fence. As a result, Maple Avenue feels bare and too open to the street.

The scale at Wilder/Lee Park seems unbalanced. On the one hand, the space feels dark and small. A frond tree covers almost 70% of the tot lot and the main play structure seems oversized for the area. On the other hand, the space feels too open as the remaining 30% of the play area relies on the perimeter fence to create transition despite the setback from Lee Street (see plans).



Attribute: scale and surroundings

Figure 11. Percentage of people who mentioned qualities related to the attributes scale and surroundings.

The three tot lots are located in similar settings (see Fig.11). They are bounded by a half street, a secondary road which leads to major roads and residences on two sides. Cooper Square and Maple Avenue are surrounded by two story residences, triple-deckers and four story apartment buildings. However, Wilder/Lee Park is bounded by a ten story apartment building that blocks the southern light and has a garage entrance and garbage area facing the tot lot.

A quiet and charming residential neighborhood is the ideal setting for tot lots, but most important are the elements that create a harmonious transition between the tot lot and its surroundings.

SAFETY AND MANAGEMENT

Parent Supervision

Parent supervision plays an important role in avoiding accidents in tot lots. All three tot lots have signage advising parental supervision. No child was left unsupervised at any time during observations. However, I observed a couple of close calls at Cooper Square mainly in the swing area where there is no protection bar to prevent children from running into a flying swing. Three respondents noted the lack of protection bars around the swings at Cooper Square. However, no other safety concerns related to play equipment were mentioned. At Cooper Square and Wilder/Lee Park metal, leather, or plastic play structures, as well as metal benches, table and plastic trash cans provide a safer and more durable material than wood. Conversely, Maple Avenue still has wooden and metal toys, which are in bad condition.



Sign at Wilder/Lee Park.

Soft Ground Surface

Cooper Square and Wilder/Lee Park both have a low impact surface covering main play areas. These are available in various colors: Cooper Squares uses blue, black and red while Wilder/Lee Park uses only black. Maple Avenue, on the other hand, has asphalt and compacted soil.

Maintenance

Maintenance plays an important role in providing a safe and clean play environment. Frequent sand changing, better trash pick up, and broken toy replacement were among items respondents listed when asked:

-- Perhaps, name a few things you would improve in this place, if anything.

I have observed overflowing trashcans at Cooper Square during most of my visits to the tot lot. Overflowing trashcans suggest that parents bring food and beverages to prolong their stay in the tot lot, or that perhaps Cooper Square has a large number of users, and trash pick-ups need to be intensified (now, they are every three days). The possibility of people depositing household trash in the tot lot seems unlikely, for the garbage consisted mainly of soda cans, plastic and paper cups, and empty boxes of fast-food.

FURNITURE

Seating

Cooper Square has the most seating among the three tot lots studied. There are long benches along the perimeter of the tot lot; semi-circular benches under a tree and benches around the water sprays. Parents have the option to sit while being close to their children, or to be spectators along the benches on the perimeter of the tot lot. The long benches are nice because they can accommodate a large number of people without splitting groups into different benches. In addition, moveable plastic chairs allow parents more flexibility in choosing a rest area and in being closer to the attraction their child is playing with. These chairs have also been donated by parents to the tot lot.

Conversely, there are only four benches at Maple Avenue. These are isolated from the children's main play zones and are not protected from the sun, in addition to only being big enough to accommodate two adults each. The few parents I have seen in this tot lot were standing at all times during observations. At the extreme, Wilder/Lee Park has only one bench that fits two adults in the play area.

Tables

Cooper Square has a small round table that sits approximately four adults. This table was used at all times during observations. Parents gathered to eat with their children and friends. One time a parent had ordered pizza and shared it with other families. It seems that a hot dog, soda vendor or ice cream stand could increase the time children spend in the tot lot. As lunch time approaches most of the children were called to leave the tot lot by their parents. While Maple Avenue has a bigger rectangular wooden table; it sits unprotected from the sun.



Long metal benches at Cooper Square.

Bathrooms, Drinking Fountain and Food

None of the tot lots studied have bathrooms, drinking fountains or any sort of food venue (at least during the winter). Few respondents wished Cooper Square could provide any of these conveniences when asked:

- Perhaps, name a few things you would improve in this place, if anything.

Respondents that lived more than 10 minutes away from the tot lot usually requested bathrooms and drinking fountains. The lack of these amenities might explain why these tot lots are only five minutes away from each other; they are indeed intended to serve their immediate neighbors as if they were people's back yards. One would think that eating is less of an issue for respondents who live close by; however, the two respondents, who mentioned food, lived no more than 10 minutes away from the park.

Optimal Capacity

The uneven distribution of users during the winter suggests that Cooper Square is a popular tot lot in Mid-Cambridge. The number of users probably increases during the summer due to the water sprays. Survey respondents complained Cooper Square is overcrowded during the summer. A parent even suggested that the water be removed as he had even seen summer camp and day-care excursions to the tot lot. An overcrowded tot lot increases the probability of accidents, placing a greater burden on parents who have to be more attentive. Furthermore, it throws off pre established trash collection and cleaning schedules.

SOCIAL FUNCTION

Mid-Cambridge has quite a few events during the summer. The *Mid-Cambridge Neighborhood Association (MCNA)* organizes magician's shows, book readings and even jazz concerts in the tot lots. However, these events are not consistent every year; they seem to depend highly on volunteers and available funding. The ice-cream festival seems to be the most consistent festival of all planned events in Mid-Cambridge.²⁸

Cooper Square has a bulletin board where strollers are advertised, and nanny sharing requests and general announcements are posted. Mid-Cambridge has red stands scattered in the neighborhood for the advertisement of events and official notices. In addition, the neighborhood maintains a website that provides information on events and public meetings. However there is no information on tot lots on the web site. While the design of the new public library has gotten much attention, there is no information about the new design of Maple Avenue Park.

Aside from contributing to the development of young children, tot lots can bring people with common interests together. Tot lots can foster new interactions amongst parents that are new to the neighborhood or parents with common interests. One mother tells me that she referred one couple to a school as they tried to matriculate their son in kindergarten. Many respondents answered that they were at Cooper Square *to meet friends and their children's friends*, when asked:

- *What brought you to this place today? How did you find out about this place originally?*

Surprisingly, no one noted *play* as a reason for being there. I observed families visiting family members, girlfriends and friends with no children. One mother tells me that parents used to celebrate birthday parties, organize barbecues and Easter egg hunts at Maple Avenue. However, according to her, these no longer happen as the majority of them moved. Another mom tells me her two boys treat Maple Avenue as if it were their back yard; they think they own the park.

²⁸ Over 100 neighbors enjoyed the Mid-Cambridge Ice Cream Social in Joan Lorentz Park on June 28, thanks to Toscanini's (for the donation of ice cream), the volunteers (who scooped it), and the weather (which didn't melt it too fast). MCNA news letter, October 2000.



Signage board at Cooper Square.

ACCESSIBILITY, PROXIMITY AND FREQUENCY OF USE

Tot lot accessibility is important in dense neighborhoods because children need to play outdoors at least once a day.

- How often do you come here? Is this playground the one your child(ren) use the most? Explain why or why not.

- How far away do you live from here? Give time estimates; for example: 5 min. walking or 10 min. driving etc....

- What brought you to this place today?

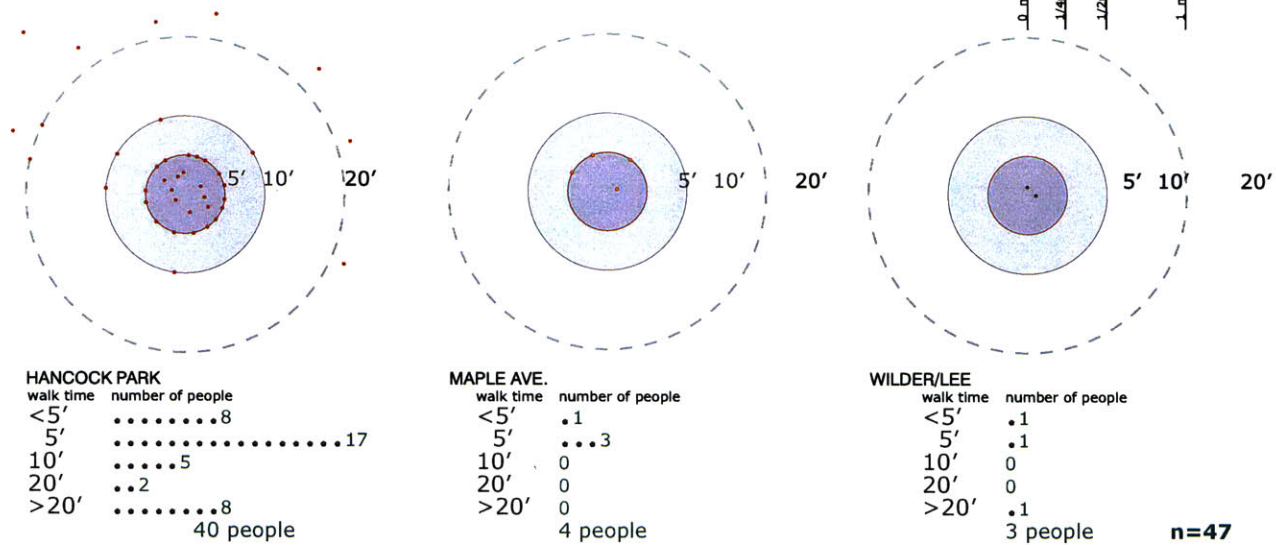
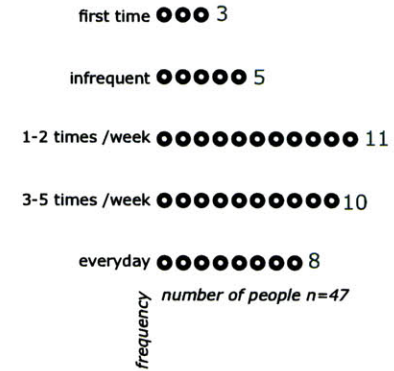


Figure 12. Walking times (min.) from home to tot lots reported by survey respondents.

When asked, respondents usually said "*I live nearby*".

Easy access to neighborhood tot lots influences the number of users. Frequency of use seems to be directly related to the distance between home and tot lot. Although most respondents lived less than 10 minutes away from Cooper Square (See Fig.12), I have the impression that this tot lot is so popular during the summer that it reaches a greater population of users. Research conducted during the summer could confirm this.

- *How did you find out about this place originally?*

Responses varied from "*word of mouth*", and "*I happened to walk by*", to "*my son's friends comes here*", so I come here. Although events are advertised, the Mid-Cambridge Neighborhood Associations' website does not include general information on tot lots or on any other open space. Therefore it seems plausible that no one mentioned the internet as a source for finding about these tot lots. The *Mid-Cambridge Neighborhood Study* mentions the need for a better source of information, but does not provide recommendations as to how improve it. Neither the City's nor the Longfellow Schools' websites have a link to information for parents pertaining to tot lots in the neighborhood.

General Demographics – Survey Respondents

General demographics are useful as they might point to a predominant user profile in the tot lots. The variables used in this study were *age, gender, nationality and their children's ages*, (if any). Unfortunately, generalizations from these data are not possible due to the small sample of respondents. Nevertheless, this data confirm that the tot lots are indeed being used by small children, and they seem to conform with Mid-Cambridge general demographics.

Age

The predominant age range of respondents who reported their age was in the range of 31-40 years old, 38%. Of all respondents who reported their age, 72% were less than 51 years old. This is helpful because age indicates how active respondents are. The majority of younger parents and guardians were not only watching but they were also actively playing with their children. I often saw parents inside the sandbox, sliding, hanging on monkey bars and swing next to their children. Active parents require strong play equipment. Conversely, older respondents were more likely to sit and observe the children playing. For them, the location of sitting areas is important; the closer to playground equipment the better they can monitor and quickly respond to their children. Interestingly enough, there was no relation between the *age* of respondents and the *mode of transportation* used to come to the tot lot; older respondents walked as much as younger respondents.

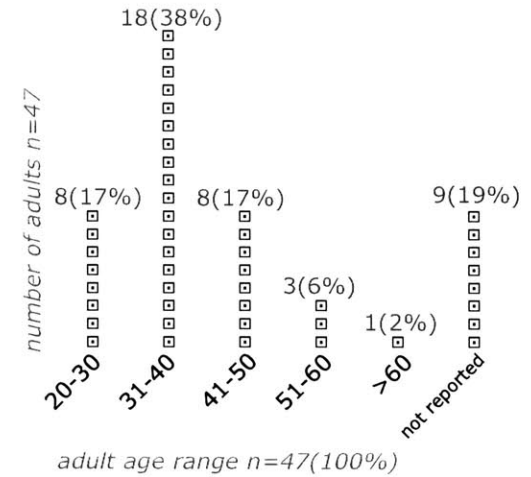


Figure 13. Percentage and counts of respondents who (did or did not) report their age.

Adult's Gender

On the whole, there was a relatively even distribution between females and male respondents. *Traditionally*, females would be predominant in tot lots because mothers tend to take *maternity leave*, or tend to not work until the children go to kindergarten. This held to be true; there were 43% (18) males and 56% (23) females respondents.

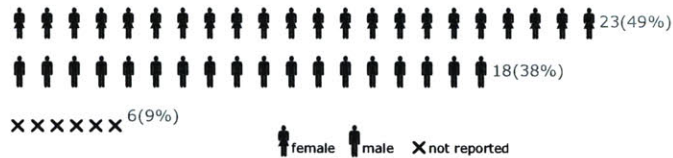


Figure 14. Percentage and counts of males and females reported.

Nationality: Culture Differences

40% (17) of respondents who reported their nationality were foreign citizens and 60% (25) were U.S. citizens. Almost all international respondents were in Cooper Square, only one international respondent was in Wilder/Lee Park when this survey took place. I observed that South American families (there were 3 days different families were in the tot lot) let their children play more freely than North Americans did; and they concentrated around a table or in groups of two around the park, always talking among themselves or with other people. They always had brought food with them.



Figure 15. Percentage and counts of reported nationality.

Children's age: The Running Age

49%(20) of the children whose age was reported in the survey were 2 to 4 years old and the highest reported children's age was 7 years old. This is interesting because the tot lots were designed for children under 12 years old. This is important because it impacts the design of play areas and the type of play equipment.

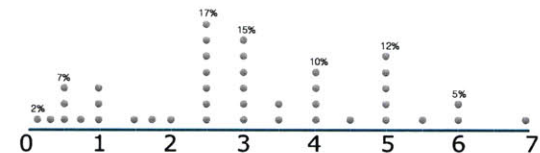


Figure 16. Percentage and counts of reported children's age diagram n=41 (100%)

V. CONCLUSION

"In the middle of a sprawling city this park exists. It is a moment of silence in a body of noise. It is a chance to feel what life is."

survey respondent profile:
male 20-30

no children

Lee/Wilder Park

April, 2003

Ultimately, what makes a good tot lot is the harmonious integration of all the attributes discussed in this study. Tot lots, like cities, are complex entities, for their success and well-being depend on the existence and good performance of several factors simultaneously. So, *what are the indicators that signal good tot lots?*

This study found a large overlay between the attributes identified in the literature reviewed, and those that people perceived as being good qualities in the three tot lots studied. These attributes are: *play equipment, scale, sun and shade, safety and management.*

However, the literature on playgrounds does not reveal attributes other than the ones directly related to play equipment and child development. For the attributes not covered by the literature, I have relied on my own set of observations to reveal the ones that contribute to the quality of the tot lots studied. These attributes are: *furniture, surroundings, landscaping, optimal capacity, social function, accessibility, proximity and frequency of use .*

This study concludes that each method used in the three-step research process, (a literature review of small urban spaces and the program of public playgrounds for small children, a survey from the point of view of tot lot users: parents and guardians who responded to a written questionnaire, and *in situ* observations of the tot lots surveyed) is insufficient *on its own* to explain all the attributes of goodness identified in this study.

Most of the attributes of goodness identified held to be true in Cooper Square, the tot lot with the most number of respondents. This indicates that my methodology has proven to be effective in identifying most attributes of goodness in Cooper Square. However, these might vary from community to community, as well as from time to time.

I have found the literature on playgrounds and small urban spaces to be complementary to each other, rather than redundant. While the literature on small urban spaces addressed general qualities of urban spaces, the literature on the design of playgrounds focuses primarily on the programming and equipment of tot lots. Therefore, this study highlights the importance of both literatures in identifying the attributes of goodness in public playgrounds.

This study has also indicated that quality of space impacts usage. The uneven distribution of tot lot users found in this study sets precedent for future research. While further research is necessary to identify possible causes for this pattern, an uneven distribution can overcrowd some tot lots and underutilize others. Whether people would have concentrated on one tot lot if all three had similar play attractions is uncertain at this point.

With this thesis, I hope to encourage designers, planners and city officials to incorporate long-term observations as a part of the design process to redesign and monitor public playgrounds. In addition, I hope to increase awareness about tot lots, and the attributes that contribute to their success. I believe that this thesis has proven to be effective in identifying and confirming the attributes that signal good tot lot design and in depicting the importance of these tot lots, small urban spaces in dense urban neighborhoods.

Appendix A

Cooper Square	DAY/ TIME/ TEMP	PLAY EQUIPMENT	FURNITURE	SCALE/ SURROUNDINGS	LANDSCAPING, SUN and WIND	SAFETY/ MANAGEMENT	ACCESSIBILITY	FREQUENCY OF USE	ACTIVITIES	SOCIAL FUNCTION	PROXIMITY	PROBLEMS and WISH LIST	AGE	CHILDREN'S AGE	GENDER	NATIONALITY
1	03.20.03 (THR) / 4: 26pm / 55F	swing, slide, water, monkey bars	lots of places to sit		good weather		closest to us	everyday in SU and SP		meet people in the neighborhood	1 min. walk	can't think of anything	31-40	4 AND 5	male	US
2	03.20.03 (THR) / 4: 26pm / 55F	great used toys and water sprinkler			beautiful weather			a few times a month	play, swings, toys, climb, slide VARIETY	the families that come	15-20 min. walk	nothing really	31-40	2 1/2	female	US
3	03.20.03 (THR) / 4: 26pm / 55F				shade - trees			3 to 4 times a year	swing and climb	friends	10 min. drive	place for kids to pee	41-50	5	male	US
4	03.20.03 (THR) / 4: 26pm / 55F	good monkey bars					live in neighborhood		all activities	best playground in the area	5 min. walk	food, drinks, cinema	not reported	4	female	chinese
5	03.20.03 (THR) / 4: 26pm / 55F	swings and water- challenging climbing structure			love the trees, warm weather and fresh air		far from home	1 to 2 times a month	watch my daughter	word of mouth - through friends.it depends on how many kids are here	15-20 min. walk	too crowed in the summer	31-40	2.5	male	puerto rican
6	03.20.03 (THR) / 4: 26pm / 55F	a lot of toys, water		quiet and nice streets				once or more a week			5 min. walk	crowd could be more diverse - socio-economic and racially	20-30	1 and 4	female	american/german
7	03.20.03 (THR) / 4: 26pm / 55F	water play areas			nice sunny day		live around the corner	often	swings, sandbox, slides, ball-playing	my daughter meets all her friends here	3 min. walk	newer toys, bathroom	41-50	3.5	female	US
8	03.20.03 (THR) / 4: 26pm / 55F	lots of toys		comfortable			live nearby	everyday in SU and SP	read or play with my daugther, organized activities e.g. Halloween		< 5 min. walk	bigger, more trees, more planned activities	not reported	not reported	not reported	not reported
9	03.20.03 (THR) / 4: 26pm / 55F				good weather		live nearby		play, run, climb	meet parents from all over the world	5 min. walk	having a gate around the swings	not reported	not reported	not reported	not reported
10	03.20.03 (THR) / 4: 26pm / 55F	good facilities, extra toys, water sprinklers		nice atmosphere	good weather		close by	several times a week	play with toys, sandbox	from neighbors, socialize with others	5 min. walk	restrict use of the park by daycare centers	20-30	2.5 and .5	male	israeli
Cooper Square	DAY/ TIME/ TEMP	PLAY EQUIPMENT	FURNITURE	SCALE/ SURROUNDINGS	LANDSCAPING, SUN and WIND	SAFETY/ MANAGEMENT	ACCESSIBILITY	FREQUENCY OF USE	ACTIVITIES	SOCIAL FUNCTION	PROXIMITY	PROBLEMS and WISH LIST	AGE	CHILDREN'S AGE	GENDER	NATIONALITY

Cooper Square	DAY/ TIME/ TEMP	PLAY EQUIPMENT	FURNITURE	SCALE/ SURROUNDINGS	LANDSCAPING, SUN and WIND	SAFETY/ MANAGEMENT	ACCESSIBILITY	FREQUENCY OF USE	ACTIVITIES	SOCIAL FUNCTION	PROXIMITY	PROBLEMS and WISH LIST	AGE	CHILDREN'S AGE	GENDER	NATIONALITY
11	03.14.03 (FRI) / 5: 30pm / 35F	water works in the Summer, the modern structures					live nearby	at least once a week	he also goes to another park next to his school		1.5 blocks	too many dangerous toys	not reported	not reported	male	US
12	03.14.03 (FRI) / 5: 30pm / 35F	water sprinkler					live across the street	once a week		international set of parents, diverse languages, skin colors	1 min. walk	numbers are too great for square footage	>60	not reported	female	US
13	03.14.03 (FRI) / 5: 30pm / 35F	water works, books for children to read attached to the benches		sheltered feeling, quiet neighborhood				4 times a week		nice kids	10 min. walk	bathrooms, food vending	31-40	not reported	male	US
14	03.16.03 (SUN) / 11: 20am / 40F	water			nice weather		my daughter wanted to play with her friend from school,	once a week	knit ad talk with the other mothers	my daughter plays with friends	5 min. walk	fence around the swings, better trash pick-up	31-40	7	female	not reported
15	03.16.03 (SUN) / 11: 20am / 40F	sprinkler, variety of play equipment		sized for toddlers, charming neighborhood, quiet street	good weather		moved into the neighborhood	3 times a week	chating with friends or playing with my child		5 min. walk	more plants to cover up chain like fence or a nicer fence, cleaning up trash	31-40	not reported	n/a	US
16	03.16.03 (SUN) / 11: 20am / 40F	lots of fun toys people have left behind			good weather		my friend lives nearby	2 to 3 times a month	swing; sandbox for kids. Great variety	friendly atmosphere, community at the park	15 min. driving	clear out broken toys regularly	31-40	3.5 and 7 months	female	US
17	03.16.03 (SUN) / 11: 20am / 40F			spacious, great neighborhood	good weather	supervised children	we live in the neighborhood	daily	active play, free play; whatever the children want		1.5 blocks	get rid of sprinkler, too many people. Daycare, Sommerville, all Cambridge, summer camps, families from Belmont, Arlington.	31-40	1,3,6	female	US
18	03.16.03 (SUN) / 11: 20am / 40F						happened to walk by; I used to bring my son before it was remodeled	first time			10 min. Walk	shovels for the sandbox perhaps	41-50	2.5	female	not reported
19	03.16.03 (SUN) / 11: 20am / 40F						live nearby; activities	often	play	the other moms, diverse group, lots of Europeans	40 min., walk 10 min. by car	more green space	not reported	19 months	female	british
20	03.16.03 (SUN) / 11: 20am / 40F	books on the benches, toys and the whole experience; water					near my sister in law	not often	read and talk		20 min. walking		31-40	6 months and 3 years	female	canadian

Cooper Square	DAY/ TIME/ TEMP	PLAY EQUIPMENT	FURNITURE	SCALE/ SURROUNDINGS	LANDSCAPING, SUN and WIND	SAFETY/ MANAGEMENT	ACCESSIBILITY	FREQUENCY OF USE	ACTIVITIES	SOCIAL FUNCTION	PROXIMITY	PROBLEMS and WISH LIST	AGE	CHILDREN'S AGE	GENDER	NATIONALITY
21	03.18.03 (TUE) / 9:20am / 40F	variety of toys					by chance walking	as much as possible	sand, swing, slides and cars	good atmosphere	5 min. walk	bigger	41-50	not reported	female	british
22	03.18.03 (TUE) / 9:20am / 40F	water, sandpit, slides					dragged by my sister-in-law	daily		talk to friends and moms, special community	1 min. walk	get rid of junky, abandoned toys	not reported	not reported	not reported	not reported
23	03.18.03 (TUE) / 9:20am / 40F	toys left by people, water			nice and warm weather, good balance between sun and shade	soft ground texture		2 times a day	swing, slide, walk on the rock, play with the toys park	very international park, there are kids coming from all over the world	5 min. walk	replace sand more often, clean surroundings, put a bathroom house	20-30	1 and 3	female	french
24	03.18.03 (TUE) / 9:20am / 40F	toys that have been donated to the park			beautiful day			3 times a week	swing, sandbox, slide	see friends and play	5 min. walk	can't think of anything at the moment	20-30	2	male	spanish
25	03.18.03 (TUE) / 9:20am / 40F	waterplay in the summer				easy to supervise the children because there is only one exit				word of mouth-meeting a friend; community	15 min. walk	swings are dangerous because there is no protection	31-40	3 and 5	female	US
27	03.23.03 (SUN) / noon / 50F			the atmosphere brought by the neighbors			live nearby; I am here for my son	2 times a week	watch the kids play	my child likes this playground mainly because he can play with his friend who comes here	5 min. walk	it should be cleaned	not reported	5	female	argentine
28	03.23.03 (SUN) / noon / 50F	toys not found in parks where we live, sandbox, rollerslide, climbing tower and playing with trucks, water VARIETY		atmosphere, good size	good shade during the summer	fencing around the perimeter	used to live here but moved to Belmont	weekends	run around and play, talk with other parents	the character the park has, the other parents	30 min. drive	replace some of the broken toys, more books, more toddler swings	41-50	2.5 and 6 mon	female	US
29	03.23.03 (SUN) / noon / 50F	good toys, nice variety		quiet		soft ground, perimeter fence	came with a friend who has a 2 year old	first time			10 miles	some toys need repair	41-50	no children	female	US
30	03.23.03 (SUN) / noon / 50F	the color of the equipment					close to my house	every day	play with slide and running around	interaction with other children and people	5 min. walk	I would like to see no people smoking in the park in front of the children	31-40	2	not reported	US
31	03.23.03 (SUN) / noon / 50F	water, toys, infrastructure					friends reference	very often		people and friends	4 blocks	make it cleaner	31-40	4.5	not reported	argentine
32	03.23.03 (SUN) / noon / 50F	sprinkler, variety, roller slide, nice sandbox, good climbing structures, modern equipment	lots of seating for adults	large	nice spring weather			couple of times a month			5 min. walk	more swings, more shade	not reported	3.5 and 5.5	male	US

Cooper Square	DAY/ TIME/ TEMP	PLAY EQUIPMENT	FURNITURE	SCALE/ SURROUNDINGS	LANDSCAPING, SUN and WIND	SAFETY/ MANAGEMENT	ACCESSIBILITY	FREQUENCY OF USE	ACTIVITIES	SOCIAL FUNCTION	PROXIMITY	PROBLEMS and WISH LIST	AGE	CHILDREN'S AGE	GENDER	NATIONALITY
33	03.23.03 (SUN) / noon / 50F	ideal: toys, sand, no splinters					word of mouth, children	3-5 times a week			10 min. walk from CambridgePort		not reported	3 and 5	male	Chinese/ german/scotch
34	03.23.03 (SUN) / noon / 50F	extra donated toys		location, proximity to restaurants but in a quiet neighborhood			fresh air, word of mouth	as often as possible, we use another park on our street	let my son indulge his active nature	special because it is where we meet our friends every Friday	10 min. drive	replace broken toys, wheels on some cars are broken, new sand in sand box	31-40	1.5	female	british/american
35	03.23.03 (SUN) / noon / 50F	variety of activities, laminated books		very comfortable		comfortable and safe	Cambridge's best playgrounds, located near our friends, play outside	not very frequent	I help the children on the monkey bar, swing, windy stairs	we bump into many people here	10 min. drive 45 min. walk	bathrooms needed	31-40	5 3/4	female	US
37	04.06.03 (SUN) / noon / 38F	sand					we live in the neighborhood	once or twice a week we go to the Peaboy, it is closer to our house	swing, slide, sand lots of activities	nice friendly people	5 min. walk	too many toys that are not in good condition	31-40	not reported	female	taiwanese
38	04.06.03 (SUN) / noon / 38F	very well equipped			very nice day to be outside	very well kept	by chance		I let my child play whatever is OK for his age; swing, slide, sand box		5 min. walk		31-40	not reported	female	italian
39	04.06.03 (SUN) / noon / 38F						to see and visit the children+parents who live in the neighborhood	infrequently		just visit and talk with people; antidote for war crisis	5 min. walk	nothing in particular	51-60	no children	male	US
40	04.06.03 (SUN) / noon / 38F	swing, sandbox, slides, water		size	trees		kids demand a park; neighborhood park	5 to 10 times a month			10 min. walk - but came driving	too crowded	31-40	not reported	male	US
41	04.06.03 (SUN) / noon / 38F	sandbox, swing, climbing, water, tower		little and slow traffic	good shade during Summer		my son needed to play after his nap. We discovered strolling around when he was a baby	3 to 4 times a week			2 min. walk	better garbage pick up in Summer; fix drinking fountain. It took a long time to get sand last year.	41-50	not reported	male	US

Appendix A - Matrix Cooper Square (cont.)

Maple Ave.	DAY/TIME	PLAY EQUIPMENT	FURNITURE	SCALE/ SURROUNDINGS	LANDSCAPING, SUN and WIND	SAFETY/ MANAGEMENT	ACCESSIBILITY	FREQUENCY OF USE	ACTIVITIES	SOCIAL FUNCTION	PROXIMITY	PROBLEMS and WISH LIST	AGE	CHILDREN'S AGE	GENDER	NATIONALITY
1	03.23.03 (SUN) / noon / 50F	water feature, general play			good weather	soft surfaces	lives on the same street				live on the street	water drain does not work,sand makes children fall, hard surfaces	41-50	4 AND 6	male	US
2	03.23.03 (SUN) / noon / 50F	big wheel; nice park with toys					I came with my children who live nearby	first time, lives out of state			grandchildren live 5 min. walk		51-60	2 years; 2 months	female	US
3	03.23.03 (SUN) / noon / 50F					dangerous objects, too much concrete	near our house	1 to 2 times a day	swing, hide and seek, slide, watch kids play		1 min. walk	dangerous objects, too much concrete	31-40	2 and 5	male	US
4	03.23.03 (SUN) / noon / 50F	swing, slide, see saw, sand box, big wheel trucks			depending on the weather	fairly run down; lead paint, sand with neighborhood fecal matters, dangerous play equipment, out of date with code and regulations	we come nearly every day to get fresh air	almost everyday	read and talk with other parents	the fact that is not crowded we see the same few families each week; and it feels like our private yard; talk with other parents, he considers this place "his park" because of how often he comes	1 min. walk	lead paint, sand with neighborhood fecal matters, dangerous play equipment, out of date with code and regulations	20-30	2 and 7 weeks	female	US
5	03.23.03 (SUN) / noon / 50F				enjoy weather		I come to the park to spend time with my brother and sister-in-law	not regularly		talk with family	we all live down the street 3 min. walk		20-30	no children	female	US
Wilder/Lee	DAY/TIME	PLAY EQUIPMENT	FURNITURE	SCALE/ SURROUNDINGS	LANDSCAPING, SUN and WIND	SAFETY/ MANAGEMENT	ACCESSIBILITY	FREQUENCY OF USE	ACTIVITIES	SOCIAL FUNCTION	PROXIMITY	PROBLEMS and WISH LIST	AGE	CHILDREN'S AGE	GENDER	NATIONALITY
1	03.18.03 (TUE) / 9:20am / 40F						work around the corner; my boss told me about it	first time in the park	eat, relax, daydream	in the middle of a sprawling city this park exists. It is a moment of silence in a body of noise. It is a chance to feel what life is	30 min. with the T or bike	stone table with a chessboard, more trees to serve as dividers between the park and the road	20-30	no children	male	US
2	03.23.03 (SUN) / noon / 50F						dog walk	twice a day	let the dog run and play; exercise them		building across the street- 2 min. walk	fence would be great; benches too; tittle more space	20-30	no children, just dog	female	russian

Maple Avenue and Wilder/Lee Park (cont.)

Appendix A - Matrix

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