A SURVEY OF SEATING PREFERENCES IN URBAN OPEN SPACES

by

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(ABSTRACT)

The design of urban open spaces often does not address the physical and psychological comfort needs of the users with regard to the type, location and orientation of the seating that is present within those spaces. In order for urban open spaces to be used by the urban population, it is important that the needs and preferences of the user population be identified and taken into account when designing and locating seating elements within those spaces.

This thesis was done to better understand how people who live and work in urban environments use seating in urban open spaces. This was accomplished through a series of observations and interviews in two open spaces in Philadelphia, Pennsylvania. The people who used the spaces were grouped into different user classes which were defined based on their age, behavior and mode of apparel. Data was collected with regard to the seating elements that they preferred to use. The data was analyzed to determine whether patterns of seating use existed within specific user classes based on the type, location and orientation of the seating elements.

The seating types that were studied included benches, walls, steps and grass areas. The location and orientation of the seating elements were described in terms of the microclimatic and contextual conditions in which they were located. These included sun/shade exposure, whether the seating was located on the interior or exterior portions of the space, proximity to a path or walkway, location in an open or secluded area, and whether or not the seating was located close to high or low traffic areas.

The findings of the research suggest that patterns of seating preference do exist within certain user classes based on the location and orientation of seating. The primary implication of these findings for landscape architects and urban open space designers is that providing a choice of seating options, in terms of seating type, location, and orientation, should be a fundamental goal when designing or redesigning spaces that are intended to be used by a diversity of people.
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CHAPTER 1: INTRODUCTION

The following research was done in order to better understand how people, particularly those who live and work in urban environments, use seating in urban open spaces. More specifically, the purpose of this research is to answer the following question: Based on the type, location, and orientation of seating in urban open spaces, do patterns of seating use exist within specific user classes who use those spaces? It is hoped that this research will provide insight as to the seating preferences of users of urban open spaces. In addition, it is possible that the methods used to conduct this research be modified and applied to the study of other urban open spaces so that landscape architects and urban planners can evaluate the seating opportunities in existing urban open spaces in terms of their use by the urban population. This information could then be used to improve existing spaces, and possibly to design new spaces.

Although research has been done that addresses the physical and psychological needs of people in indoor environments, very little research has been done regarding meeting their needs in outdoor environments, including urban open spaces. This, along with the lack of attention to design details such as microclimatic conditions and seating, has resulted in open spaces that are characterized by adverse conditions such as pollution and strong winds, as well as inadequate seating opportunities and conditions (Lang, 1994). According to Lang (1994), in order to avoid problems such as these, it is essential to consider user needs when designing public open spaces. Specifically relating to this study is the human need for comfort. It is assumed that when a person uses an open space, he or she will prefer a location or orientation that offers both physical and psychological comfort. Because of this, Lang (1994) states that, “...the urban designer has to deal with the way the elements of the built environment are to be structured to give access to sunlight, shade, and breezes within specific climatic zones, and with the way the furnishings of the public realm meet ergonomic needs so that they can be used safely and comfortably” (p. 221). Therefore, in order to design open spaces that will be used by the diverse urban population, there is a need to identify specific needs and preferences of those users with regard to the design of urban open spaces. One way that the needs and preferences of the user population can be addressed is through the design, location, and orientation of the seating elements in urban open spaces. It is because of the necessity to recognize and address user needs in the design of urban open spaces that research such as that presented in this thesis is so important.

Because of the diversity of people who live and work in urban environments, speculation regarding physical and psychological needs and preferences is unlikely to provide a sound basis for design decisions (Lennard and Lennard, 1987). Empirical research is required to provide insight as to the needs and preferences of the specific user population of an urban open space. In this research, the concern is with user needs and preferences in regard to seating in urban open spaces.
While this study focuses on seating preferences in public urban open spaces, it is important to recognize that there are other broader factors that may affect urban open space use. These factors include the accessibility, context and design of the spaces, as well as the physical and psychological needs of the user population. Each of these factors affects the general use of urban open spaces, and therefore may influence the more specific use of seating in these spaces. Therefore, in addressing the issue of seating use in urban open spaces, it is important to consider the characteristics of the spaces themselves in addition to the seating that is contained within them.

Context and access refer to the location of the space within the urban realm, and the access to the space from surrounding areas. Public urban open spaces are intended to provide urban dwellers with places to engage in some type of leisure, recreational or social activity (Lennard and Lennard, 1984). For this reason, it is important that these spaces be located within a context that allows for a diversity of users to access them. It has been suggested by researchers such as Lennard and Lennard, (1987), Lynch (1979), and Chidister (1986) that urban open spaces be located within areas that have a mix of land uses in order to be accessible to a diversity of users. An open space that is in close proximity to apartment buildings, offices, hotels, and retail stores, for example, would be a prime location to attract a diversity of users. The types of people who use urban open spaces are an important factor in the use patterns of those spaces. For this reason, in order to study particular use patterns in urban open spaces it is necessary to understand the characteristics of access that pertain to the spaces.

As previously stated, people’s needs can be described in terms of psychological needs and physical needs. Because the resident and user population in cities is extremely diverse, the needs and preferences of this population differ as much as their histories and lifestyles. Psychological needs include the need for such things as security, clarity, privacy, social interaction, convenience, and identity (Krupat, 1985). An open space that successfully satisfies these needs is a space that is inviting and psychologically comfortable for people to use. Through the design, location and orientation of seating elements, some or all of these psychological needs can be addressed (Krupat, 1985).

It has been suggested that through variations in the physical design of spaces, the physical needs and preferences of a diverse user population can be accommodated as well (Lennard and Lennard, 1987; Joardar and Neill, 1978). Physical needs and preferences vary within the user population based on characteristics such as age, mode of apparel and behavior (Marcus and Francis, 1990; Lennard and Lennard, 1987; Lynch and Carr, 1965; Gehl, 1990). Because of these different physical requirements and preferences, variations in the physical design of open spaces are needed to accommodate a diversity of users. One way that some variation can be achieved is through the design, location and orientation of seating.
The literature pertaining to urban open spaces suggests that seating is one of the most important elements that affects open space use. William Whyte (1974, 1972) has written extensively on the subject of use of urban open spaces. He has stated that, "...a place to sit, is far and away the most important element in plaza use" (p. 30), and the "key variable in plaza use is sit-ability" (p. 21). Chidister (1986) has suggested that spaces that contain comfortable places to sit will be used more frequently than spaces that do not provide comfortable seating. Lennard and Lennard (1987) have suggested that, "Seating is a basic requirement of every good space" (p. 31), and furthermore, that each seating type should be made available in a variety of locations. For example, a variety of seating elements should be made available in sun and in shade, in high use areas and low use areas, and where groups can sit and where individuals can sit. Beyond the location of the seating, Joardar and Neill (1978) suggest that the arrangement and orientation of seating elements in open spaces affect their use as well. They state that seating elements that provide more variety in seating position and orientation, such as corners of walls or clusters of seats, are used more than straight or linear seating arrangements. In addition to the type, location and orientation of the seating itself, it has been suggested by Leonard and Leonard (1987) that, "Not everyone needs or would choose the same kind of seating" (p. 31).

It is this last statement that forms the basis of this research. The focus of the work reported here is on how the type, location and orientation of available seating elements in urban open spaces affects their use by specific user groups. In addition, it is my intention to address questions such as: Do preferences for certain seating types or locations differ according to age? to mode of apparel? to user group size? Does the behavior of the users themselves, or the other occupants of the space, in any way affect choice of seating type? Are there discernible patterns in seating use by people from the same user classes?

It was determined that conducting case studies of two representative urban open spaces, using observations and interviews, would be an appropriate means of studying the issue of seating use in urban open spaces. Through observations, the researcher could watch how people use seating in urban open spaces on a day to day basis. Through interviews, the researcher could find out how users feel about particular seating elements and arrangements in open spaces.

The open spaces that were chosen are John F. Kennedy Plaza and Rittenhouse Square, both located in Philadelphia, Pennsylvania. These spaces were selected for two primary reasons. Firstly, it was assumed that because of their location within a major urban center, based upon their proximity to the downtown business district and the presence of nearby residential uses, both spaces would be accessible to a diversity of users including residents, workers and visitors. And secondly, each space contains a range of seating types that are designed or arranged in a variety of different locations and orientations.
In order to address the hypothesis and answer the questions posed above, it was necessary to classify the users of the two spaces according to certain criteria. Based on the hypothesis and questions, and referring to previous studies, available literature, and preliminary observations that were conducted on both J.F.K. Plaza and Rittenhouse Square, several criteria were used to derive user classes for this study. These criteria were age, behavior, and mode of apparel. Using these criteria, the user classes for this study were determined as: casual users, professional people, families, teenagers, couples, school groups, and street people.

Additionally, it was necessary to describe the range of available seating types within the two spaces in order to determine if and how the design, location and orientation of the seating affects use. Through preliminary site visits it was determined that both of the spaces contained similar seating options in terms of type and many different options in terms of location and orientation of that seating. Seating types include benches, both with and without backs; walls, including both seatwalls and fountain walls; steps; and grassed areas. The location and orientation of the seating types are described in terms of the microclimatic and contextual conditions in which they are located. These include sun/shade exposure, whether the seating was located on the interior or exterior portions of the space, proximity to a path or walkway, location in an open or secluded area, and whether or not the seating was located close to high or low traffic areas. Because of these characteristics, J.F.K. Plaza and Rittenhouse Square were deemed to be representative of spaces that contain a variety of seating options.

Based on both the information found in the literature review and the information gathered during the preliminary observations of the two sites, it was expected that patterns of use and preference would be found within each user class. In other words, each user class would have a preference for a particular seating option or options in terms of type, location and orientation. This resulted in the first goal of the study, to determine what characteristics of available seating types, in terms of type, location and orientation, affect use by particular user classes. A second goal is to determine if there are any consistencies or patterns within user classes regarding preference for certain available seating options. This information could then be applied to help designers create better spaces within the urban realm by taking into consideration the characteristics, needs and preferences of the user population of particular urban open spaces.

Because this study focuses on two specific urban open spaces, it is unknown whether the information that results from this research is generalizable to other urban open spaces in Philadelphia or elsewhere. Because of the wide variety of types and designs of urban open spaces, and the various contexts in which they can be located, it is not possible to find two spaces that are representative of all urban open spaces. However, the two spaces that were chosen do have characteristics in common with other open spaces located both in Philadelphia and across the United States. In order to determine if the findings of this research are
generalizable to other urban open spaces in Philadelphia or elsewhere, similar research could be conducted in those spaces.

The thesis is organized in a series of chapters, each addressing a phase of the research. This chapter, Chapter 1, addressed the reason for conducting this research and has defined the major goals and objectives of the study. The thesis hypothesis and questions were stated, and methods of answering these questions have been presented. Chapter 2 reviews pertinent literature that provides a basis for the research as well as a discussion of issues related to the subject. Chapter 3 presents the methodology that was used to perform the research. Chapter 4 is an analysis of the data collected in John F. Kennedy Plaza and Rittenhouse Square. Chapter 5 presents the findings of the research as they pertain to the research question and the goals and objectives of the study. Chapter 6 provides important information regarding the implications of this research for the design and/or renovation of urban open spaces. This chapter also includes a description of the limitations of this research approach, as well as recommendations for how this research could be applied to other urban open spaces.
CHAPTER 2: LITERATURE REVIEW

This literature review provides a summary of relevant research pertaining to the use of seating in urban open spaces and identifies relevant issues, methods and findings related to the topic.

When designing open spaces for people to use, it is important to determine the needs and preferences of those people and to take them into consideration when designing open spaces. Part 1 addresses the needs and preferences of people in terms of their use of urban open spaces. Part 2 presents information related to urban open spaces and the seating located within those spaces. Characteristics such as access, context, surrounding urban structure, and design are addressed. In addition, issues related specifically to seating are described. These issues include the importance of seating, activities of open space users, preferences in seating location, orientation of seating, types of seating, and styles of seating. Part 3 addresses the classes and types of people who use urban open spaces. They are described in terms of age and behavior. Part 4 is a review of literature related to research methodologies. This was done in order to determine what type or types of research strategies were most appropriate for conducting this research.

PART 1: MEETING THE NEEDS OF THE PUBLIC

According to researchers working in the design research field who have been studying social change in open spaces in terms of vandalism, non-use, crime, negative image and barriers to park use, open space design has generally not met the needs of the public over the past few decades. This is a problem because, according to Hayward (1989), “The vitality of urban spaces - plazas, ‘open-space’, streets and parks - is created through use, and use is encouraged by behavior-based design, allowing for sitting, viewing, informal socializing and eating” (p. 195). By behavior-based design, Hayward refers to designs that allow for a variety of behaviors to take place. For example, he would refer to the design of a space in terms of the availability of seating for both individual use and for use by groups of people for socializing. The vitality that Hayward describes, and therefore the success of urban open spaces, will be diminished if no one uses them. For this reason it is important to consider human needs, more specifically user needs, when designing urban open spaces.

“City dwellers everywhere seem to have a desire, indeed a basic need, for the diversity, sociability and communality made possible by being in public” (Lennard and Lennard, 1984, p. 11). Edward Krupat (1985) discusses the needs of people in terms of functionalist and aesthetic approaches to design. “Functionalist” designs are concerned with the most suitable way that tasks can be accomplished; they do not consider the “cognitive, affective or social aspects” of people (Krupat, 1985, p. 164). Purely functionalist designs are often described as “sterile, cold and lacking in complexity and variety” (Krupat, 1985, p. 164). Krupat considers social interaction to be a functional aspect of open spaces. Conversely,
purely aesthetic designs may be considered good works of art, but often neglect functional needs of the users. Therefore, Krupat (1985) suggests that by combining these approaches it is possible to design for a full range of human needs. Open space designs that incorporate both functional and aesthetic approaches will be used by a greater diversity of people than those that focus solely on either the functional or aesthetic components of human needs.

More specifically, Krupat (1985) refers to the works of John Zeisel (1975, 1981) to identify six psychological needs that are common to all people: security, clarity, privacy, social interaction, convenience and identity. Security refers to the need to feel safe and is associated with visual access, which will be discussed in the following section. Clarity, or legibility, is desired so that people can find their way to and through a space or place. Privacy and social interaction refer to the ability and desire to control contact with others. People like to have a choice regarding their separation from the mainstream or their participation in it; they do not like to be forced into one level of participation or the other. Convenience is the degree to which the place is perceived to be close and easy to access. Identity refers to the relationship of self to environment. A person identifies with a place through the "inspiration and stimulation" that they receive from their surroundings (p. 163).

Many of these psychological needs can be enhanced through the appropriate placement of the seating elements within an open space. In determining appropriate placement, the location of the seating, as well as the orientation of seating, should be taken into consideration. For example, areas that offer the opportunity for social interaction or privacy can be created through the placement of seating close to or away from heavily used pedestrian paths or sidewalks. Convenience can be addressed by placing seating elements where they are easily accessible, rather than far away from pedestrian pathways. In order to satisfy one or more of these psychological needs, a person may choose a particular seating type or arrangement. Therefore, psychological needs may affect where people sit within an open space.

In addition to psychological needs, physical needs may affect where a person chooses to sit. Mark Francis (1989) discusses the need of human beings to control their environment. One way for an individual to accomplish this control is through the ability to change or modify the environment. An example which applies to urban open spaces would be a person's ability to modify the environment through the use of movable chairs. According to Francis (1989) movable chairs "help people adapt plazas to their own needs such as sitting in the sun, being alone, or sitting in a group" (p. 167).

Lennard and Lennard (1987) and Mozingo (1989) address the differing needs of people based on age, ability and gender. Different people have different requirements for seating types and each will seek out the best type suited for him or her. For example, a teenager may accept sitting almost anywhere; on the grass, on a
wall, on stairs, but for an elderly person, a seating type such as a bench or chair may be more desirable. Some types of seating are selected and used by choice, as in the case of the teenager. Teenagers are generally not constrained by disabilities that would prevent them from choosing a non-traditional seating place. Elderly people, on the other hand, may have some physical disabilities that could prevent them from using these same seating elements. They may require a seat that is easy to sit down in and get up from, or one that is comfortable for longer periods of time (Lennard and Lennard, 1987).

Because of these individual needs and preferences, Lennard and Lennard (1987) emphasize that it is important to provide a variety of seating opportunities to accommodate the diversity of people who use urban open spaces. These seating opportunities include such elements as benches, seats, planters, walls, and steps. Lennard and Lennard (1987) state that,

Seating is the basic requirement of every good urban space, and there is often a correlation between the number of places to sit, and the popularity of the space. Not everyone needs or would choose the same kind of seating. Elderly people need more comfortable seats with backrests. Others, particularly the young, sometimes prefer to sit on ledges, walls, planters, or steps - places that seem to allow for more spontaneity in the decision to sit, to remain, or not to remain. An individual, briefly taking the weight off his legs while he rests a heavy package, may prefer a ledge two feet high. Another, bringing her lunch to the space, may prefer a comfortable chair with a backrest, and a low planter wall to prop up her feet (p. 31).

Therefore, by providing a variety of seating opportunities within urban open spaces, the diversity of people who are typically located in urban areas can be accommodated. In addition, variety in seating allows people who use the space for different activities to choose seating that accommodates their particular agendas.

The difference in personal needs may be based on gender as well. Louise Mozingo (1989) conducted a study to determine what, if any, differences there were between men’s and women’s attitudes towards downtown open spaces in San Francisco, California. The two spaces that were studied were Crocker Plaza and Transamerica Redwood Park. Crocker Plaza is an octagonal-shaped sunken plaza surrounded by an arrangement of sitting steps which is located on a busy street corner with very little vegetation. The types of seating that are available there are steps that lead down into the sunken area and a few benches located around the perimeter of the plaza at street level. Transamerica Redwood Park, on the other hand, is a mid-block space that contains large trees and a fountain. It is surrounded by a fence with gates at the entrances. The types of seating that are available in this space are benches, steps, and a lawn. Mozingo’s study showed that men typically located themselves in the areas of each space that were closer to high traffic flows and were more open and exposed. Women, on the other hand, preferred to sit away from the heavy traffic in more secluded areas. Also, in Crocker Plaza it was found that women had a difficult time sitting on the
low steps because of their attire. Typically, they wore skirts that were not conducive to sitting on steps with six inch risers. Women were more likely to sit on the benches located at street level. Therefore, although the benches were located in a high traffic area, women would use them instead of the steps because of the comfort and propriety that the benches provided, in effect trading psychological comfort for the physical comfort of the benches. Mozingo states that,

Steps, sculptures, and sitting blocks of other than standard height will produce in many women an unsolvable conflict between standards of propriety, physical comfort, and the desire to be in open space. For whatever historical and cultural reasons, women wear skirts; therefore, considering a six-inch riser and a 14-inch tread as adequate seating space is an insult to them (p.47).

This study suggests that in order to accommodate all the users of open spaces, it is important to provide a variety of seating opportunities in terms of seating type.

It is important to remember that despite the recognition of common needs, different groups of people have different needs according to their individual characteristics. These characteristics include such things as age and gender. Before designing an urban open space, it is important to determine the characteristics of the potential user groups.

In summary, it has been suggested that over the past few decades, the needs of the general public have not been met in terms of open space design (Hayward, 1989). In order to address this problem, it was suggested that a combination of both function and aesthetics be the goal of designers, as previously mentioned (Krupat, 1985). It has also been suggested that despite the recognition of common needs (security, clarity, privacy, social interaction, convenience and identity), it is important to determine the characteristics of the particular user group for whom the design is being created (Krupat, 1985).

It has been documented throughout history that people need places for social interaction and recreation. Historically, urban plazas and squares have been used as community meeting spaces and spaces for social activity. The Greeks and Romans used these spaces for a diversity of activities. They were used as meeting places as well as for stages or settings for plays. They were generally located within close proximity of both work and living quarters. The use of plazas and squares as a social gathering place continued throughout the Renaissance and Baroque Period, when they were used by everyone; they were a “theater” for urban life (Kornblum, 1981). Olmsted and Kimball (1973) write, “...the public place or square has been for centuries the ground of the people...” (p. 4).

In America open spaces for public use were included in the design of planned cities as early as the seventeenth century. In 1682, William Penn’s design for Philadelphia, Pennsylvania incorporated five
open squares; in 1733, General James Oglethorpe’s plans for Savannah, Georgia incorporated twenty-four small squares and open spaces in addition to a public garden and a common. These places were used by people to gather socially, for recreation (Olmsted and Kimball, 1973), and as a means of providing an opportunity to encounter the natural environment within an urban location.

Therefore, these spaces served three main objectives all related to social aspects and to the natural environment (Olmsted and Kimball, 1973). This study focuses on the social aspects of urban open spaces and how these aspects affect the use of and the use patterns in urban open spaces today. Socially, urban open spaces provided a place for people to gather. In the past, these open spaces were fundamental to social life and life in general. They were used as civic spaces, entertainment centers and places for leisure activity. Although still important, open spaces are not fundamental to social life or life in general in the same way that they were in the past. By this it is meant that the same types of uses occur in urban open spaces today, but to a lesser extent. In open spaces such as parks, activities tend to be more segregated. Today, in general, there are specific open spaces provided for different activities, for example ball fields for recreation and outdoor amphitheaters for entertainment. In addition, it is not unusual today that civic meeting places and entertainment centers be located indoors. However, despite this segregation of activities, urban open spaces, particularly squares and plazas, are still important in that they support socializing and a variety of other activities.

In today’s society, urban open spaces are places for social interaction to occur within cities. In The Social Impact of Urban Design (The University of Chicago Center for Policy Study, 1971) it is stated that public space allows a place for social interaction to occur and is a channel for pedestrian traffic. And, according to Lennard and Lennard (1987), public places are used by people to meet with other people, to be alone, to watch others, to eat and to rest. These statements regarding types of activity are further reiterated by Hayward (1989) who states that, “[urban open spaces] provide a convenient setting for a broad variety of leisure and recreational activities” (p. 193). Therefore it is generally agreed upon that urban open spaces support the leisure, recreational, and social activities in the city.

These types of activities are engaged in by a variety of different people, not just one particular group. Basically, urban open spaces provide places for all urban dwellers, including young and old, male and female, groups or individuals, and people of all ethnic and cultural backgrounds, to engage in some type of leisure, recreational or social activity. Furthermore, it is noted that public places are often used as meeting places for co-workers, friends and family members (Lennard and Lennard, 1984). This statement supports the notion of urban open spaces being the social interaction hubs of the city. Along with the idea that urban open spaces provide places to interact with people with whom you are familiar, Lennard and Lennard
(1984) also point out that urban open spaces are places where people from all walks of life can interact with a diverse group of people whom they would usually not encounter.

In summary, urban public spaces provide places for people to satisfy their needs for social interaction within the city. Both acquaintances and strangers have opportunities to interact with each other in these places. Because of the high degree of social interaction that takes place in urban open spaces, there are social values attached to them.

Specific urban open spaces may be valued because they allow people to engage in many different types of behavior and allow for choice to do as one pleases. People can use these places to relax, eat, sleep, and play, along with a variety of other activities. Lynch and Carr (1965) suggest that the following values are important to people, and that they can be achieved or felt in urban open spaces: choice, mastery, stimulus, contrast, social experiment, orientation and flexibility.

Choice should be a primary objective when designing open space. People know what they want and it is important to allow people to make a choice of what they would like to do. This is particularly important to this research because the study is an inquiry as to where people choose to sit. One way to provide choice is through the placement and orientation of seating elements. By providing a number of different seating elements within a spaces and locating them in a variety of areas, for example in sun and in shade or close to pedestrian traffic and away from it, the designer allows the user to choose the conditions in which he or she spends time.

The concept of choice is also mentioned by Lennard and Lennard (1984) when they suggest that the individual has a wider range of opportunities and options in public places to interact with other people. They may choose to be alone or to engage in conversation. Urban open spaces should allow for different involvement levels in social activity and also allow for the user to choose this level of involvement.

Mastery refers to seeing the results of one’s efforts, making something one’s own, or leaving an individual mark. In open space environments, one or more of these can be accomplished by providing opportunities for users to create something of their own, for example through the incorporation of movable chairs. Users can manipulate the chairs and create their own individual spaces within the larger space.

In a city environment, the stimuli that are typically encountered are highly intense, structured and symbolic (Lynch and Carr, 1965). In an open space, however, it is desirable to create stimuli that are less intense and demanding. If this is done successfully, the individual can experience a sense of release and relaxation. This change in stimulus from city to open space should not be too abrupt, however. Lynch and Carr
(1965) suggest that the open space be designed “so that it exhibits continuities with the urban environment: perhaps it may have paved walks, or signs, or clipped and ordered trees” (p. 403).

By the term contrast, Lynch and Carr (1965) are referring to social contrast, or the intermingling of a diverse group of people in the same space. They suggest that open spaces can provide a place for these social contacts to take place free from constraint. In order for this to happen, they suggest that open spaces be located “between or equally accessible to different social groups” (p. 405).

Open spaces can also provide places for certain groups to participate in social experiments. People can participate in behaviors that they would not normally participate in; they can experiment with different social roles. For example, programs that create opportunities for minorities with isolated patterns of behavior to experiment with new activities can be held in open spaces. Also, open spaces can be places where children can try out new social roles without risking permanent commitment (Lynch and Carr, 1965).

Open spaces can provide a sense of orientation within cities. They may provide views and vistas of the surrounding city and therefore allow the observer to see important physical, visual, and symbolic relationships. Also, they may act as an element that gives a city unique character, such as Savannah, Georgia with its repeated pattern of open spaces.

Flexibility refers to “the value of spaces which can be actively used or manipulated, and which are amenable to change of function” (p. 409). An open space can be used as a place for individual enjoyment, social interactions, group events, or a number of different activities.

Since individual needs and preferences vary, it is important to allow for a range of possibilities. Lynch and Carr (1965) state that, “Special groups within the population should be specifically considered: ethnic minorities, teenagers, single men and women, the old. What would they prefer to do and what physical form will give them that opportunity?” (p. 399). This quote is important in that it states, in a more general sense, the purpose of my research; to determine if different classifications of users prefer or use different types of seating in urban open spaces.

Lennard and Lennard (1984) outline five characteristics that are valued in urban open spaces. In general, they are:

- They provide higher access and opportunities for behavior and activity than private or quasi-public spaces.
- They promote a wide range of social encounters.
• They are open to people from all walks of life and enable people to “encounter others different from them” (p. 18).
• They “tend to diminish the exclusion of, and the inattention to the physically or mentally disabled” (p. 19).
• They allow for a wide range of behaviors, emotions and relationships that become obvious to others around. In other words, they allow people to become “enriched in their view of others” (p. 19).

It is clear that urban open spaces are important for a number of reasons. They act as the center for social activity within the city, provide a place for leisure activity, provide channels for pedestrian traffic, serve as meeting places, and allow people to engage in a variety of behaviors. Additionally, if they are designed with the user in mind, they can address, through seating, the needs and desires of those users.

The diversity of people who live and work in urban environments have different psychological and physical needs. One way to address these needs in the realm of urban open space design is through the type, location and position of seating elements located in urban open spaces. Through providing a variety of seating options that address the needs of each specific type of user, be they young or old or male or female, an urban open space designer can create a space that can be used by this great diversity of people.

**PART 2: URBAN OPEN SPACES AND SEATING**

A review of the literature revealed that in order to design urban open spaces that meet the needs and preferences of a diversity of users, certain physical characteristics of the spaces must be recognized. These characteristics are accessibility, context, surrounding urban structure, and design.

**Section 1: Accessibility**

The issue of access is a key factor of open space use. In order to study the use of spaces based on different classifications of users, it is essential that the spaces be accessible to a diversity of users. McKenzie and McKenzie (1978) define public open spaces as those that are “usually open and have unrestricted access from all adjacent spaces” (p. 393). For a space to have unrestricted access, it must display certain characteristics in terms of physical access, visual access, and social access (Francis, 1989).

With regard to physical access, in order for people to use an urban open space, they must be able to get into that space. According to Lynch (1981) the basic premise behind open space use is: “for a space to be well-used it must be accessible.” If a public space is not near, or at least related in some way, to a pedestrian circulation system, or if the pattern of the entrance or exit paths is not evident or obvious, it will be underused. (Lynch and Carr, 1965). Since access to a space is highly dependent on its relation to a
circulation system, it follows that the entrances and the edges or borders of the space are one of its most important and useful parts: “Careful manipulation of the edge and access system is the key to design” (Lynch and Carr, 1965, p. 400).

Visual access, or the ability to see into a space, is important for the user in that it provides a sense of security. People will tend not to use a public urban open space that they cannot see into or out of because they feel that these places are unsafe and provide greater opportunity for criminal behavior or activity. This is particularly important for women and their use of urban open spaces. In their article “Women and Urban Public Space”, Franck and Paxton (1989) state that, “In the United States and Canada, women report significantly more fear of crime than men” (p. 128). For this reason, a female might be less inclined to use a space with inadequate visual access. Visual access is important for police officers as well. It allows surveillance from bordering streets, instead of surveillance solely from within the space (Newman, 1972).

The importance of both physical and visual access is supported by Lynch and Carr (1965) who state that “open spaces, particularly those for daily or weekly use, should be physically proximate to their users, and connected to them by visible easy paths” (p. 400). It is also stated that the access should be, or at least seem to be, short and direct. “Physically proximate” and “short and direct” refer to distances that people will travel, particularly when walking, to reach a destination. Generally, people will not travel on foot to reach destinations that are more than five to ten minutes away. Therefore, access becomes not just a physical element, but a psychological element as well. If people feel as though a place is easily reached, then it becomes accessible to them, despite the actual distance.

Lynch and Carr (1965) remark that “...access can be denied by social rather than physical barriers,...” (p. 401). Social access refers to the types of people who are “welcomed into” an urban open space. People of different gender, age, race, culture, etc., should all have access to public urban spaces and feel comfortable using them. However, this is not always the case: for example, certain places discriminate against use by children through the use of certain design elements. Places that do not contain elements that are conducive to childrens’ use such as jungle gyms, sand boxes, or sculptures for them to climb on, do not “welcome” children to use them. Franck and Paxton (1989) note that places that have a high degree of social access, those that attract or are used by a great diversity of people, have greater “publicness” (p. 131). The concept of publicness refers to the social and behavioral features of the space. Places with a high degree of publicness, where a range of diversity is “tolerated and encouraged” are more frequently used, and are used by a greater number of people (Lynch and Carr, 1965, p. 131). Lennard and Lennard (1987) stress that freedom of access gives the space the feeling that “these places belong to all” (p. 68).
Physical access, visual access and social access are all critical characteristics regarding the potential use of urban open spaces. In order for a space to attract users, it needs to be accessible both physically and visually; in order for it to attract a diversity of users, it needs to be socially accessible. The omission or misapplication of any one of the three can be detrimental to the overall potential success of the space.

Section 2: Context

In order for a diversity of people to be able to use a space, it must be located within a context that allows for a variety of people to access it (Lennard and Lennard, 1987; Lynch 1979; Chidister, 1986).

Lynch (1979) and Lennard and Lennard (1987) stress the importance of a space being located in a context where there is equal access by different, diverse social groups, including people of different genders, age, social status, culture, ethnicity, occupation, etc. If they are to be used successfully, urban spaces should be located in a place where the surrounding land uses include a mix of commercial, cultural, residential and business functions. This way, the spaces are “never a single-function space,” rather they are very diverse in their functions, acting as spaces that are open to commercial, residential and business-related activities all at the same time (Lennard and Lennard, 1987, p. 13). For example, an area that is in close proximity to apartment buildings, offices, hotels, and retail stores would be in a prime location for attracting a diversity of users, while an area that is in close proximity to single-use building types, such as industry, would not attract a diversity of users. In addition, Lennard and Lennard (1987) state that, “Livable urban spaces are located in the heart of the city or neighborhood,...” (p. 13).

These contentions are supported by Chidister (1986) in his study of five plazas in Minneapolis, Minnesota. In this study, Chidister set out to determine how the context of a plaza would affect its use. In addition, he wanted to see if plaza context or the physical characteristics of the plaza was more influential on plaza use. The results of the study showed that of the five spaces studied, “the most frequently used plaza was in the area of greatest land use diversity, where office and retail districts overlapped” (p. 18). In addition, in terms of physical characteristics, it was found that plazas with more seating and trees tended to have more users, but it was also found that the following contextual conditions were strongly linked with plaza use: proximity to high worker populations, offices, restaurants and bars, and parking. In conclusion, Chidister states that, “it does appear,..., that context is as strong an influence or even a stronger influence on plaza use than is plaza design [including plaza size, the amount of seating, and the number of trees]” (p. 124). Additionally, Chidister concludes that the land uses around a plaza strongly correlates to plaza use. Because of this Chidister states that “even a poorly designed plaza with appropriate context might be used more than a well-designed plaza without appropriate context” (p. 124). Basically, the study stresses that the location of the open space within the city has a significant effect on whether or not it will be used.
Therefore, the context in which a space is located greatly affects whether or not diverse people will use that space. Without the proper context, accessibility may be impeded and, as a result, use of the space may be diminished. If an open space is not accessible to a certain group of people, be they residents, business people or shoppers, then that space will most likely not attract that group.

**Section 3: Urban Structure**

Urban structure refers to the characteristics of the built environment, including buildings, streets, and other structures, that are present within the urban realm. The urban structure that surrounds urban open spaces can have significant effects on the use of those spaces. These effects are typically related to the access, including physical, visual and social access, that the surrounding structures permit the space to have.

Cooper-Marcus and Francis (1990) define types of urban open spaces whose surroundings affect their accessibility, and therefore, their use by the urban public. Their typology of urban plazas is based on the characteristics of size, form and use. These classifications, which are listed from smallest to largest in size, are: the street plaza, the corporate foyer, the urban oasis, the transit foyer and the grand public place. Most of these spaces, although they are intended to be open to the public, are surrounded by urban structures that make them appear to be inaccessible to the public. Physical or visual access to them may be blocked by buildings or other structures.

Two exceptions, the street plaza and the transit foyer, are highly accessible, but are not intended for stays of any duration. Street plazas are located adjacent to sidewalks and are often nothing more than a widening of the sidewalk that provides people with a place to step out of the main flow of traffic and sit, wait, or watch for a short period of time. Transit foyers are created as access into and out of busy public transit terminals. They are often designed for people to pass through rather than to linger. Although both of these types of spaces are highly accessible both visually and physically, their surroundings act to limit their use. This is particularly evident in the case of the transit foyer where the user population is typically limited to those who use the transit terminal.

The corporate foyer and the urban oasis, although they are intended to be accessible to the public, may seem inaccessible for a number of different reasons. Corporate foyers typically function as the entrances to high-rise building structures and are usually privately owned. They may appear to be inaccessible for the following reasons: they are typically not built at the street-level which impedes visual access and therefore reduces use; since they act as the entrance space to a building structure, they are seen as socially inaccessible to anyone who does not either work or have business in that building; they are often designed
as spaces to pass through rather than to sit in, and therefore often do not contain comfortable seating elements, if any at all.

The urban oasis, although not designed to be associated with any single building, may appear inaccessible as well. This is because, typically, the urban oasis is located away from the street which not only impedes physical access, but visual access as well. The urban oasis can be located at street level or at a different level, sometimes to the extent of a roof garden. Also, because these spaces sometimes incorporate a restaurant or cafe, the context is such that they are seen as more private spaces for the patrons of the eating establishment.

Grand public places, unlike the previously mentioned urban open spaces, are highly accessible to a variety of users. This may be attributable to their surrounding urban structure which is described by Cooper-Marcus and Francis (1990) as a place that,

... comes closest to our image of the old-world town square or piazza. When located near a variety of land uses (office, retail, warehouse, transit) it tends to attract users from a greater distance and in greater variety (by age, gender, ethnicity) than do other plazas. Such an area is often big and flexible enough to ‘host’ brown-bag lunch crowds; outdoor cafes; passers through; and occasional concerts, art shows, exhibits, and rallies. It is usually publicly owned and is often considered the ‘heart’ of the city - the place where an annual Christmas tree might be erected or guests are taken for a visit (p. 18).

Because of the location of grand public places in areas of high land use diversity, they are highly accessible to a diversity of users. This use by a diversity of people is further motivated by the variety of activities that these types of spaces are able to accommodate. Cooper-Marcus and Francis (1990) define two types of grand public places; the city plaza and the city square. Both of these types of spaces are intended to be accessible to the public, but city plazas are typically more restrictive than city squares.

The city plaza is an extension of the building forecourt of a high-rise building. It is usually centrally located and highly visible (Cooper-Marcus and Francis, 1990). Such places are often privately owned and managed, but are intended to be accessible to the public. This accessibility is impeded, however, by the fact that these spaces are developed as an extension of a building. Although they are intended for public use, they are often designed in such a way that makes them inaccessible or unwelcoming. They are often built either above or below street level, which obstructs visual access from surrounding areas. Additionally, they are typically physically accessible only on two or three sides, with the building bordering the other sides or side. Therefore, their context and surrounding urban structure affects the use, or lack of use, of these quasi-public spaces.
City squares are designed to be part of the street structure and typically encompass one or more complete blocks (Cooper-Marcus and Francis, 1990). Because of their central location, the fact that they are surrounded by streets, and their independence from a single building structure, these spaces are typically the most highly accessible of all of the spaces described previously. They are seen and used as places to walk through, often from corner to corner. In addition, visual access is not impeded by surrounding buildings. The central locations of these spaces typically places them in areas which are often surrounded by a variety of land-uses such as offices, retail businesses and residential areas. This allows for a diversity of people to be able to access these spaces. In addition, the central location often makes them the focus of the area or neighborhood in which they are located.

Contrary to quasi-public spaces or privately owned spaces, city squares typically do not overtly exclude anyone from using them. Many quasi-public spaces, such as corporate foyers which are privately owned but open to the public, are designed to discourage use by certain members of the population, particularly vagrants or street people. This is also evident in privately owned spaces where use by all but employees is typically discouraged.

As suggested by Cooper-Marcus and Francis (1990), city squares are used by people, “...for strolling, sitting, eating, and watching the world go by” (p. 10). In addition, they are often used as places where events are held, such as rallies and concerts. Although it is important to recognize that there is an abundance of different types of open spaces available within cities, in this literature review, and ultimately in this thesis, I will be addressing city squares in particular because they are among the most accessible of the open space types based on their context and surrounding urban structure. Their high accessibility attracts many different types of people to urban squares.

Therefore, it is clear that the ease of access to open spaces, their context within the city, and their surrounding urban structure all have considerable effects on whether or not the spaces are used. Proximity to a variety of building types and uses, and therefore to a diversity of people, can have a positive effect on open space use. Where possible, open spaces should be located in areas with high land-use diversity and ease of access physically, visually and socially.

Section 4: Physical Design and Programming

Although the potential use of urban open spaces can be affected by such things as access, context and surrounding urban structure, it has been found that physical design characteristics and programming, affect use as well. Physical design elements include such things as sunlight/shade, the size of the space; the floor textures used in the space; the focal point or points located in the space; the size, type, location and number of trees, shrubs and water; the type, location and number of tables, play equipment, level changes, services
and amenities that support sitting, eating, reading, writing and playing games (Franck and Paxon, 1989). Programmatic elements include such things as the presence of vendors. For the purposes of this thesis, seating will be the focus of the discussion of the physical design of open spaces, however, sunlight and shade characteristics are also pertinent.

The amount of sun and/or shade that an open space receives can have an impact on the usability of the space. In the summer, shade is an important element because people seek out places that will allow them to get out of the sun on hot days. In the fall through early spring, however, sun exposure is important because it provides warmth for the users of the space. In The Death and Life of Great American Cities, Jane Jacobs (1961) explains that in a particular open space that she studied, on a “good October afternoon...almost a third of the square lies completely empty; the great building shadow across from it from a new apartment house is a great eraser of human beings within its pall” (p. 106). This quote illustrates the importance of sun exposure in times of cool temperatures.

The amount of sun and shade influences the temperature of the space as well. In regions that tend to have hot summers, it is important to provide adequate shade which will lower the temperature, while in cooler climates sun exposure is important to raise the temperature within the space.

Whyte (1974) suggests that outdoor eating is increasing in cities, particularly during the lunch hour. Because of this, there is an increased demand for food vendors in the city. According to Cooper-Marcus and Francis (1990), “Vending certain types of goods in particular locations can increase the popularity of retail areas, enliven the environment of a plaza or sidewalk, and provide security” (p. 45). As a result of the vendors attracting people, they may actually discourage use by undesirables by leaving little room for them to congregate. It is this last item, food, that Whyte (1980) stresses as an important amenity to urban open spaces.

**Section 5: Seating**

The literature suggests that seating is one of the most important elements that influences the use of urban open spaces. The availability, location, type, style, arrangement and orientation of seating affect who uses open spaces and how.

Chidister (1986) has found that seating affects the use of urban open spaces. There is a positive correlation between plaza use and seating. He states that although the findings show that context and surrounding land use are important, “Without an adequate number of comfortable places to sit, whether on turf or benches, it is unlikely that the plaza will be well used relative to other plazas in the city. This suggests that future
plazas, in which high levels of daily use are desired, must be designed predominantly to have adequate seating. ...” (p. 125).

William Whyte (1972) states that the “key variable in plaza use is sit-ability” (p. 21). He justifies this statement by noting that through his studies he has found people sitting in places that have undesirable characteristics such as noise, drafts and car fumes. From this, he deduced that the people were sitting in these places simply because they provided a place to sit. Through these and similar studies, Whyte (1980) has found that the “most popular plazas tend to have considerably more sitting space than less well-used ones” (p. 27). Along with this, Miles, Cook and Roberts (1978) state that “…seating is the primary determinant of plaza activity” (p. 20). Furthermore, Gehl (1987) suggests that, “Only when opportunities for sitting exist can there be stays of any duration” (p. 157). Seating, therefore, can obviously affect plaza use in the sense that if there are no places to sit, people will likely not stay in the space; they will just walk through it.

In addition, without available seating, there is a loss of opportunity for people to participate in the activities that are considered by both Gehl (1987) and Cooper-Marcus and Francis (1990) to be the most common activities in public outdoor open spaces: sitting, standing, walking, eating, reading, sleeping, knitting, playing chess, sunbathing, watching people, talking, listening, and so on. Gehl notes that this is important because activity within a public space is vital to the quality of the public space.

- Where people sit depends a great deal on the external conditions of the place, for example the weather: sunny or shady, windy or calm, rain or sun, hot or cold. Other considerations are the location of the seating in relation to the rest of the space and/or the street. Gehl (1987) points out that perimeter seating areas are generally preferred over interior areas and that beyond this, well-defined sitting places such as those located in niches or at the ends of benches, are popular. Places where a person’s back is protected, for example against a tree or somewhere with a wall behind it, are popular spots as well. This idea is supported through the findings of research done by the sociologist Derk de Jonge who studied seating preferences in restaurants. He found that people preferred to sit around the perimeter of the room (when tables were available there), and that they preferred to sit with either their back or side to a wall where they could get a good view of their surroundings. Gehl (1987) suggests that this phenomenon is applicable to open outdoor spaces as well. In general, “Well-protected places to sit, with an unobstructed view of the surrounding activities, are always more popular than the places offering fewer advantages and more disadvantages” (Gehl, 1987, p. 161).

In addition, both Gehl (1987) and Lennard and Lennard (1989) suggest that the placement of seating affects its use. According to Gehl (1987), “Placement of seating must be guided by a thorough analysis of the
spatial and functional qualities of the location” (p. 159). It is important to determine what types of activities occur within the space, as well as the availability of space within the open space. The location and placement of seating opportunities should reflect the results of these types of analyses. For example, the same types of seating should be available in both sun and shade; close to action and away from action; where an individual can sit and where a group can sit; or where there is high visibility and seclusion. One way that this can be accomplished is through the incorporation of movable chairs. Movable chairs can be set up in a variety of positions as well as in a variety of locations. Many designers believe that the use of movable chairs is more suitable than the use of fixed seating in urban open spaces because of their potential to be manipulated to serve each individual’s needs or preferences (Lennard and Lennard, 1989).

Both Lennard and Lennard (1987) and Joardar and Neill (1978) address the type, location and amount of seating and how they affect use. In addition, they discuss the arrangement and orientation of seating, and how these factors might affect use.

Lennard and Lennard (1987) address the physical characteristics of open spaces in terms of level changes and focal points, and how they affect people’s perceptions and use of urban open spaces. They suggest that through the use of level changes and the placement and orientation of objects, the creation of different spaces within the open space can be accomplished. This adds a sense of variety to the space which, in turn, allows for a diversity of people to use the space. For example, people who like to be inconspicuous and watch other people can sit in areas away from the main traffic or focal point, while people who like to be the center of attention can sit in a more highly visible space or near a focal point of the space. In addition to providing a variety of spaces, level changes and focal points such as fountains or planters can provide places for people to sit. By arranging and orienting level changes, “tables, back and arm rests, alcoves for small groups or amphitheaters for large crowds to watch entertainment” can be created (Lennard and Lennard, 1987, p. 30). This is supported by the findings of Joardar and Neill (1978) in their study of open spaces in Vancouver.

Joardar and Neill (1978) found that those spaces that contained “dense furnishings, attractive focal elements and defined edges” (p. 489) were used most frequently and most effectively. For the purposes of this thesis, I will focus on the role of the furnishings. It was found that the use potential of the spaces was affected by differences in the shape, size and arrangement of the seating or leaning elements within each space. In terms of the types of seating elements that were utilized, pool edges, planter edges, benches and railings were used frequently. The corners of pool and planter edges, and the corners of railings were used more frequently than the straight middle sections. Benches, even those designed to accommodate several people were generally used by one or two people, usually occupying the end spaces. In terms of arrangement it was found that clusters of seats or benches located at angles to one another “held a greater density of
population and a wider mix of age, sex, posture or activity than typical linear configurations” (Joardač and Neill, 1978, p. 489). It was suggested that this occurred because these arrangements provided orientational variety while linear arrangements did not. Joardač and Neill state that,

The keynote for designing furniture elements appears to be the provision of personal space, orientational freedom and postural choice for small-group users. Such provisions may be made through angular variety, small size and physical division in the forms and arrangements of facilities rather than extensive monolithic structures of neat geometrical shapes that make up much of our plaza landscapes (p. 490).

Lennard and Lennard (1987) state that, “In the most successful public spaces one finds that, ... seating has been designed to create settings that enhance a variety of interactions” (p. 35). Seating can be arranged to accommodate both individuals and small or large groups. Individuals might use single benches or straight sections of walls while groups may choose benches that are at right angles to each other or corners of walls, planters or fountains. In addition, the arrangement and orientation of seating can create spaces that are highly visible or secluded. By creating both of these types of spaces, the designer is accommodating for a variety of user types.

Therefore, not only is the type of seating important in terms of its design, but the location, arrangement and orientation of that seating is important as well. By providing variations in seating type, location, arrangement and orientation in urban open spaces, the diversity of people who live in, work in or visit the urban environment can be accommodated.

Cooper-Marcus and Francis (1990) address the arrangement and orientation of elements, particularly seating, not in terms of their individual use, but in terms of the subspaces which they create. These subspaces provide more enclosure, shelter and seclusion which can make them more inviting to many people who prefer less open and exposed spaces. Subspaces can be created through changes in level, placement of plantings, construction configurations and placement of seating. Basically, these subspaces provide niches for people to occupy while they are using the space.

This concept is also described by Lennard and Lennard (1984) when they note that seating areas that are arranged a certain way can provide niches or “territories” for users (p. 27). Good designs allow for different types of seating elements such as benches, seats, planters, walls and steps to provide different “territories” for people to occupy. In other words, with the proper placement of these seating elements, numerous seating possibilities are made available to accommodate the diversity of people using the open space. There are places for both groups and individuals, old and young, people searching for privacy or sociability, and so on. Therefore, the placement and arrangement of the seating elements makes it
“possible for people to select specific locations that will support their personal agenda and the level of social involvement that they desire” (p. 28).

In addition, Lennard and Lennard (1987) use the term “taking possession” to describe how these different seating arrangements can affect people’s perceptions of the space (p. 31). “Taking possession” basically refers to a person being able to occupy and temporarily “own” a certain part of the space that they are using. It is suggested that, “people take possession in different ways - children climb on sculptures, young people lean on walls or lounge on steps” (p. 31).

Ways in which territories are created or people take possession of spaces do not necessarily have to be inherent in the location and arrangement of seating. Francis (1989) suggests that by providing movable chairs, the designer allows the individual user to manipulate the space and create their own territories or take possession in their own way. Movable chairs allow the user to be more in control of the environment.

In summary, by making available a variety of sitting spaces through the location and arrangement of seating elements or the provision of movable chairs, it is possible to accommodate practically every user with regard to their comfort needs as well as their functional requirements.

Along with location and arrangement, the type of seating that is available will also affect open space use. Gehl (1987) recognizes two categories of seating types: primary seating and secondary seating. Primary seating consists of benches and chairs while secondary seating consists of “stairways, pedestals, steps, low walls, boxes, and so on” (p. 163). It is suggested that primary seating is essential both for the “more demanding categories of users” as well as “where the need for seating is limited” (p. 161). Secondary seating becomes important when the “demand for seating is particularly great” (p. 163). This is not to say that secondary seating is used only when there is a high demand for seating. Gehl states, “A spatial design based on an interplay between a relatively limited number of primary seating opportunities and a large number of secondary places to sit also has the advantage of appearing to function reasonably well in periods when there is only a modest number of users” (p. 163). Accordingly, Cooper-Marcus and Francis (1990) state that, “...secondary seating...can appear as part of the sculptural effect of the design and need not look lonely when devoid of people” (p. 33). Therefore, if an open space is designed with a great number of primary seating types and very few secondary seating types, it will appear abandoned and empty when it is not being heavily used. Through the implementation of secondary seating types, adequate seating can be provided, but the space will not look deserted during low-use times.

Related to secondary seating types mentioned above, Gehl (1987) advises that “sitting landscapes” - “multipurpose elements in city spaces such as a grand stairway arrangement that doubles as a lookout
point, a monument, a fountain with a wide, terraced base..." are a type of secondary seating that can be very successful in urban open spaces (p. 164). These elements can add to the interest and diversity of the spaces in which they are located.

In addition to types of seating, styles of seating also affect use. Studies have shown that the most popular style of seating is the bench (Cooper-Marcus and Francis, 1990 and Whyte, 1980). In addition, Whyte (1980) has found that benches with backrests are the most popular seating style and that wooden benches are most preferred because of their level of comfort. However, backless benches tend to allow for more variety of use and different sitting combinations. If they are deep enough, people can sit with their backs to one another and still feel the same level of privacy that they would if they were sitting by themselves. Functionally, benches can be used by people who are alone or in groups. They can be used as a seat and table combined in the sense that two people can sit on them with their lunches between them and still have plenty of room.

The step or ledge is another seating style that offers a greater variety of sitting combinations than do benches. This is because stairs, and sometimes ledges, offer a variety of different levels. Linear ledges may not be conducive to use by groups, however, because they do not provide an opportunity for conversation to take place very easily. For this reason, it has been found that the corners of ledges, stairs and fountain walls are used more frequently by groups than the straight middle sections (Cooper-Marcus and Francis, 1990).

Typically, materials such as concrete, metal, tile and stone are used to construct the seating areas in urban open spaces. Although wood is considered to be more comfortable both because of its softness and reaction to temperature (it generally remains at a constant temperature as opposed to concrete which gets cold or hot when located in the shade or sun, respectively), it is often not used because it is quite easy to deface in comparison to other materials. It is much more difficult to destroy a concrete bench than a wooden one. Another reason for the use of concrete is, ironically, discomfort. It is believed that by providing concrete benches, undesirables, or street people, will be less likely to sleep on them.

In summary, the characteristics of urban open spaces that affect their use are accessibility, context, surrounding urban structure, design characteristics and seating. In order for a diversity of users to use an urban open space, it must be highly accessible physically, visually, and socially. This accessibility is related to both the context and the surrounding urban structure of the space. A space that is located in an area of high land use diversity, is surrounded by streets, and is not associated with any one building will attract a diversity of users. Cooper-Marcus and Francis (1990) refer to these highly accessible spaces as city squares.
Regarding seating, it has been found that different people require and prefer different types of seating elements. The type, location, orientation and style of the seating can affect its use. By providing a variety of seating options in a variety of different places, the differing needs and desires of the diverse user population can be accommodated. It has been found that most people prefer benches to other types of seating. Additionally, seating that is located in groups or at angles to each other is popular because it offers a place for groups to congregate, unlike single seats and benches that are typically conducive to couple or individual use.

PART 3: THE USERS OF URBAN OPEN SPACES

As previously mentioned, it is essential to determine what the needs and preferences of the users of urban open spaces are in order to be able to design those spaces so that they will be used. It is also important, particularly for the purposes of this study, to determine the physical and social characteristics of the people who use urban open spaces. Cooper-Marcus and Francis (1990), Lennard and Lennard (1987), Lynch and Carr (1965) and Gehl (1990) all provide classification schemes that can be used to categorize people according to age and behavior.

In describing the users of open spaces, Cooper-Marcus and Francis (1990) base their user classifications primarily on the behaviors and/or activities of those people or the locations in which they sit. It is these behaviors and/or activities that influence not only where people locate themselves within the spaces, but also what seating elements they may use within the spaces. Following are the five types of sitters that Cooper-Marcus and Francis (1990) define, with regard to where they choose to sit:

- Those waiting briefly for a bus or taxi.
- Passersby who want to sit on the ledge of the plaza looking out at the passing traffic and sidewalk action.
- Users who want only to dip their toes in and to sit just inside the plaza looking in. All of these three categories are more likely to be single users rather than groups, and therefore seating should be arranged so that people can sit side by side, instead of in more intimate arrangements, such as opposite to or at right angles.
- Most of the users (if this is a well-used plaza) tend to sit not too close to traffic and sidewalk and not too close to building entries. These can be both groups of people and alone. Both types tend to gravitate first to edge or island seating...
• A small but important group of users is likely to be couples and lovers seeking out secluded, intimate places to be alone, and pairs or groups of women, who tend to favor the inner, less exposed locations. An unheralded but significant use of plazas and downtown parks is a setting for courtship and secluded liaisons. Seating for this group might be in the back of the plaza (if it has a back) or in a deadened space, where intrusions from passersby are at a minimum. At the opposite extreme, those who fall into the category of “young love on display” tend to sit in the most exposed locations.  
  (Cooper-Marcus and Francis, 1990, p. 32-33)

Lennard and Lennard (1987) base their user classifications on both the age of the user and the behavior and/or activity that he or she participates in. Regarding age, they state that, “Not everyone needs or would choose the same type of seating” (p. 31). Elderly people need to sit on, or would choose to sit on, comfortable seats with backs while young people might choose other places to sit such as ledges, walls, planters or steps. In terms of behavior, Lennard and Lennard (1987) differentiate between people who stop to rest briefly as opposed to people who use spaces to eat lunch. Someone who is briefly resting might choose a two foot high ledge; while someone who is eating, and would therefore probably be spending more time in the space, might choose a bench with a back or a place where he or she could put up their feet and relax.

When addressing individual preferences for different physical forms, including seating, in open spaces, Lynch and Carr (1965) classify users according to age. Specifically, they say that people of different ages, such as the elderly versus teenagers, prefer and use different elements within open spaces. Gehl (1990) also classifies users according to age regarding their need for places to sit. He states that the elderly are more likely than other groups to need places to sit and rest as they walk through the city.

Therefore, according to three of the four aforementioned classification schemes, age seemed to be the most typical criterion used to classify open space users. Behaviors and/or activities of those users were the next most typical criteria. By using these types of classifications, it is possible to determine who are the users of a particular open space. For example, it can be determined whether the open space users are predominantly young or older, or whether they participate in active recreational activities or passive activities. This is important because it is not only necessary to determine what user groups are using the space, but what user groups are not using the space. In doing this, it then becomes possible to evaluate the existing design and see what changes could be made to attract other user groups, while still retaining the current user group.
PART 4: LITERATURE ON RESEARCH METHODOLOGIES

Before conducting the type of research that is presented in this thesis, it was necessary to conduct an exploration of the literature on research methodologies. Researching the information found in general sources such as *Qualitative Evaluation Methods* by Michael Quinn Patton (1990) and *A Practical Guide to Behavioral Research* by Barbara and Robert Sommer (1991) helped to determine what types of research methodologies would be appropriate for conducting this study. In addition, review of previous research done on similar subjects provided more specific information or appropriate methodologies.

Patton (1990) addresses research strategies in terms of whether quantitative or qualitative methods of research are more appropriate for the particular research that is proposed. Quantitative methods require the use of standardized measures. The different perspectives and experiences of people are fit into a limited number of pre-determined response categories. This allows the researcher to be able to measure and statistically compare data collected on a large number of people. The results are broad, generalizable findings. Qualitative methods, on the other hand, allow the researcher to study certain issues in depth and detail. Using qualitative methods, there are no pre-determined categories. Qualitative methods are useful because they allow the researcher to collect a great deal of data about a smaller group of people or cases, thus increasing his or her understanding of this smaller group. Typically, the use of qualitative methods reduces the generalizability of the results.

Once the researcher determines which method is appropriate, Patton presents an outline of the issues that need to be addressed when using that particular strategy. This outline is what Patton calls “a plan for data collection and analysis.” In order to determine whether quantitative or qualitative methods are more appropriate for a particular research study, Patton lists a series of questions which determines whether qualitative evaluation methods are more applicable than quantitative methods. This list, which Patton calls a “Checklist of Evaluation Situations for Which Qualitative Methods are Appropriate,” is presented in Appendix A, along with its application to the current research.

After the researcher determines which of the evaluation methods are appropriate, Patton presents an outline of nine “Technical Design Issues” that help the researcher to plan the data collection and analysis stages of their research. The technical design issues that Patton suggests the researcher address are methods of inquiry, primary units of analysis, sampling strategies, comparisons to be made, data to be collected and instruments to be used, insuring the quality and accuracy of the data, addressing concerns about validity and reliability, analysis to be conducted, and statements and findings that are to result from the analysis. Patton presents alternatives regarding each of these issues which the researcher must choose that will help to determine the most useful way to collect the appropriate data and perform a meaningful analysis.
Sommer and Sommer (1991) present more specific information regarding types of research methodologies. In particular, they discuss four typical research techniques: observation, experiment, questionnaire, and interview. Within each of these four technique categories, Sommer and Sommer provide several methodological options that the researcher can choose from when applying these techniques to the specific study. For example, there are three different kinds of observation: casual observation, systematic observation, and participant observation. Once the researcher determines that observations methods are appropriate, a choice can be made regarding which specific type of observation would provide the most useful results for the study. Sommer and Sommer present both the advantages and limitations of each of the methods and techniques, enabling the researcher to determine the best research approach.

Through the use of books outlining research methodologies and techniques, researchers can determine both the type of research that is appropriate to their work, as well as more detailed information regarding data collection and evaluation techniques.

**PART 5: CONCLUSION**

Review of pertinent literature suggests that public urban open spaces are places that urban dwellers can use to participate in a variety of leisure, recreational, and social activities. Many of these activities include such things as sitting, eating, reading, and watching people. Because these spaces are intended to be open to all people, it is essential that they be highly accessible to the diverse urban population. In order to be highly accessible, urban open spaces should be located in a context that contains high land-use diversity.

Because of the diversity of people who use urban open spaces, and their different psychological and physical preferences and requirements, it is important that the design, location and placement of seating elements in urban open spaces address the preferences and needs of that diverse user population. Preferences for seating differ according to the individual characteristics of age, gender, and activity. In addition, the type, location and orientation of seating, as well as the style of seating, affects its use.

Physical needs differ according to age. Elderly people require more comfortable seating while young people will typically use a variety of seating types. Needs also differ according to gender. Typically, men tend to sit in areas of high traffic where they are more exposed to the people around them, while women tend to sit in lower traffic areas that are more removed or secluded. Men typically sit anywhere; on steps, walls or benches, while women typically sit on benches. This behavior can be attributed to the differences in apparel that the men and women wear. Men typically wear pants while women typically wear skirts and dresses that make it difficult to sit on stairs and walls comfortably. In addition, intended activities or
behaviors of people have an effect on where they choose to sit. A person who is briefly stopping may just want to lean or sit on a ledge, while a person eating lunch may want to sit down on a bench with a back.

Perimeter seating is generally more popular than interior seating. Additionally, places that are well-protected, particularly from behind, are preferred over more open, exposed places. People like to sit in places where they have a clear view of their surroundings and the surrounding activities.

Pool edges, planter edges, benches and railings are the most frequently used seating elements. More specifically, the corners of these walls and planters, and seats and benches that are located at angles to each other, are used more frequently than the straight, middle sections or single seats or benches.

Benches with backrests are the most popular seating style. Additionally, the most used benches are typically constructed of wood, which may be attributable to their comfort in comparison to concrete benches.

Steps and ledges are a popular type of seating because of the variety of seating options that they offer the user. These elements, because of their configuration and level changes, allow the user to choose how he or she wants to use the seating element; to sit on, to lie down on, or to lean on.

In conclusion, review of previous research reveals several conclusions regarding the use of urban open spaces and, in particular, the seating within these spaces. In order for urban open spaces to be used by a diverse urban population, they must be highly accessible. This can be accomplished primarily through their location in a context that contains high land-use diversity. In addition, it has been suggested that through the design, location and orientation of various seating elements, the needs and preferences of the diverse user population of urban open spaces can be accommodated. It has been found that certain seating types and styles are preferred over others, and that certain locations in terms of microclimate and context are preferred over others.

Through this study, it is the author’s intention to further research these findings and, more specifically, to introduce methods that could be utilized to study the use of, and seating use in, urban open spaces.
CHAPTER 3: METHODOLOGY

PART 1: DETERMINING AN APPROPRIATE RESEARCH STRATEGY

Because this study focuses on collecting detailed information about a relatively small group of people who are the users of two urban open spaces, it was determined that qualitative methods of evaluation would be appropriate. In addition, it was determined that ethnographic research, which combines several research techniques including observations, interviews, and physical trace measures, would provide the most useful and detailed information about the user groups. Systematic observations and open-ended interviews were employed.

Following are more detailed descriptions of the reasons why these particular research methodologies and techniques were chosen to conduct this research.

In order to determine if qualitative methods of evaluation would be an appropriate way to conduct this particular study Patton’s “Checklist of Evaluation Situations for Which Qualitative Methods are Appropriate” was utilized. The questions in the checklist refer to the expected outcomes and information that will be found through conducting the research, as well as the goals of the research. Through answering Patton’s questions, while at the same time bearing in mind several requirements of this research such as the need and desire to evaluate the open space users individually; the interest in focusing on the diversity among, and unique characteristics of, individual people; and the need and desire to collect detailed, descriptive information about the use patterns of individual user classes, it was determined that qualitative methods of evaluation were appropriate. The specific questions and how they relate to this research can be found in Appendix A.

After applying Patton’s “checklist” to this research and subsequently answering each question, it became apparent that qualitative research and evaluation methods were appropriate for conducting and evaluating this research.

Since it was determined that qualitative research methods were appropriate, a plan to conduct the research was needed. Patton outlines nine “Technical Design Issues” that are basically “a plan for data collection and analysis.” By answering the questions put forth in the outline and applying additional information provided by Sommer and Sommer (1991) in their book A Practical Guide to Behavioral Research, the basic plan for the research could be defined.
• Methods of Inquiry

The type of inquiry that was used was naturalistic inquiry. In using naturalistic inquiry, the researcher(s) study naturally occurring activities within spaces and attempt to remain anonymous and non-manipulative during the study process. This is important because if the subjects know that they are being studied, they may act differently than they would in a natural situation. In order to accomplish this, the researcher(s) positioned themselves at a distance from the subjects being studied and engaged in an activity that was inconspicuous to the subjects. Inconspicuous behaviors included reading a book or newspaper. During the observation, the researcher(s) recorded the activities of the subjects, particularly as they related to the seating elements within the spaces. By not predetermining activities, it was possible to observe a variety of behaviors that occurred within the spaces.

In addition to this, Sommer and Sommer (1991) present two types of qualitative research: participant observation and ethnography. Since it was not desirable, or necessary for the researchers to become part of the events being studied (as is the case in participant observation), it seemed appropriate to use an ethnographic approach. An ethnography is: “the description and study of specific peoples and places” (Sommer and Sommer, 1991, p. 56). Ethnographic research combines several research techniques including observations, interviews, and physical trace measures. Both observations and interviews were employed in this study.

Sommer and Sommer state that, “Observation is the ideal method for studying commonplace nonverbal behaviors, such as gestures, postures, or seating arrangements, in which people may not be consciously aware of how they are acting” (p. 48). This statement justifies the use of observations to conduct this research because a goal was to find out where people sit on an everyday basis. Three types of observational procedures are presented by Sommer and Sommer: casual, which is done without pre-arranged categories or a scoring system; systematic, which is done with pre-arranged categories and a scoring system; and participant, which is when the observer becomes part of the events being studied. Systematic research was deemed to be most appropriate.

In systematic observation, there are pre-arranged categories that are applied consistently throughout the study. Oftentimes, as was the case in this research, casual observation is used to develop the categories to be utilized in systematic research. Two sets of categories were developed through casual observation of the case study spaces; these categories were user classifications and seating types.

Patton states that an issue that must be dealt with is the breadth, which is the gathering of a lot of data on a variety of issues, versus depth, which is the gathering of more detailed data on more specific issues, question. The breadth of this research was limited so that the focus could be on user classifications and
seating types. The discussion of other aspects of urban open space, such as the behaviors of the people not using the seating, were limited. In this sense, the breadth was limited so that the issue of seating could be addressed in more depth.

- **Primary Units of Analysis**
  The primary units of analysis are both the users of the seating in urban open spaces and the seating itself. The reason for this is that the users of the seating and the seating are the main concentrations of this study: what user classifications use the seating in urban open spaces? why or why not? what are their seating preferences? do they believe that there is enough seating available? what types of seating are utilized most often or by the largest number of users? by which user classifications? Basically, at the end of the study, conclusions will be drawn specifically regarding both the users of the seating and the characteristics of the seating itself.

- **Sampling Strategy**
  It was determined that random sampling would be the most appropriate sampling strategy. By choosing to study subjects as they used the seating elements in the space, it was assumed that a sample which is representative of seating element users in the urban open spaces that are to be studied, could be obtained.

- **Comparisons Made**
  In order to answer the research questions and accomplish the goals and objectives of the project, the following comparisons were critical:
  - User classifications vs. Seating types
  - Seating types vs. Context and location of seating types (i.e. microclimate, proximity to activities)
  - User classifications vs. Perceptions of seating and seating availability

- **Data Collected and Instruments Used**
  Data was collected concerning the use of seating elements within two urban open spaces. Observations and interviews were conducted on subjects using the two urban open spaces to determine what types of seating are utilized most often by particular user classifications. In addition, through interviews, insight was gained as to how people perceive the seating opportunities that are available in the spaces.

- **Ensuring the Quality and Accuracy of the Data**
  By utilizing standardized matrices and questionnaires, the data collection was controlled. In order to make comparisons between user classifications and seating types, a relatively high level of accuracy was needed.
during the data collection phase. Through the incorporation of standardized formats for the observation and interviews, a high level of accuracy was accomplished (refer to Appendix B and Appendix C).

- Addressing Concerns about Validity and Reliability
  Validity and reliability were accomplished through triangulation. In this study, both investigator triangulation and methodological triangulation were utilized. Investigator triangulation is the use of several different researchers or evaluators. In addition to the author, there was always one other researcher conducting observations at the same time. Regarding methodological validity and reliability, methodological triangulation is the use of multiple methods to study the same topic. Limitations and the reliability of using a single method such as observational research methods are discussed by Sommer and Sommer, who state that, “Observation deals with behavior, not with attitudes and beliefs....If you want to find out what people do, you can observe them. If you want to find out what they think, you should ask them directly” (p. 59). In order to accomplish the research goals and answer the research questions, it was necessary to conduct a second type of research, the interview.

Sommer and Sommer describe an interview as a “conversation with a purpose” (p. 108). Through interviews, it is possible to assess people’s beliefs and opinions about certain topics. There are two types of interviews: structured and unstructured. For the purpose of this research, structured, standard interviews were chosen. In a structured interview the questions are created beforehand, and asked during the interviews in a set order and in a specified manner. This is done so that each interview is consistent with the previous one, and so that it is easier to compare the responses of those being interviewed. In recording the information, the researchers paraphrased what the respondents said, but, where relevant, wrote certain comments down verbatim. Sommer and Sommer give some limitations of conducting interviews. One of the primary limitations is that, “What people say is not always what they do” (p. 126). The interviewer basically has to believe whatever the respondent tells him or her. By conducting both observations and interviews, however, validity and reliability in the data were greatly increased.

- Analysis Conducted
  Inductive analysis was utilized in order to discover patterns, themes and categories that emerged out of the data. In conducting inductive analysis, the researcher looks for variations in the data. For example, in this study, it was expected that a variation would occur between the user classifications who use benches and the user classifications who use seatswalls. Additionally, inductive analysis allows for patterns to be discovered in the data. Coding was used to analyze the data collected during the interviews. Coding is “the process by which categories of responses are established for open-ended questions...It is the means by which lengthy statements are reduced and sorted into specific response categories” (Sommer and Sommer,
The categories that were created in coding the interview information for this research can be found in Appendix D.

- Statements and Findings that Resulted from the Analysis

The following are examples of the types of questions that were answered as a result of the analysis:

- Are there differences in seating preferences among user classifications that utilize the seating elements in urban open spaces? For example, what user classification(s) prefers to use benches in urban open spaces? ("Bench" may be substituted by any of the seating types defined in the study).
- Are certain seating types used more often than others?
- Do urban open space users believe that there are enough seating opportunities available in those spaces?
- What suggestions do urban open space users have regarding seating type and availability?

In order to assist with the actual methods that were used to conduct the research, several magazine articles and books were consulted. The following briefly describes some of the ideas and guidelines that were derived from previous studies and publications.

Many ideas regarding both the format and content of my study were derived from Louise Mozingo's (1989) study entitled "Women and Downtown Open Spaces" (Places, vol. 6, no. 1). In this study, Mozingo (1989) conducted a detailed behavior observation of people occupying two urban parks located in California. The observations took place at 15 minute intervals and included such information as behavior mapping, sex of the subjects, location of the subjects, and activities of the subjects. A questionnaire was also distributed in this study which included open-ended preference questions. By combining the information collected from both the observations and the questionnaires, Mozingo was able to formulate conclusions as to how women and men occupy urban parks in different manners. It was determined that because of the similarities in the research (i.e.: to determine how different people occupy and use urban open spaces), this study could be conducted in a similar fashion. Behavior mapping was essential to determine the locations of both the seating elements and the people who used them, and questionnaires in the form of interviews were essential to find out the reasons that people used particular seating elements.

Ideas on the basic format of the methodology and the research paper were taken from an article by Talbot, Bardwell and Kaplan (1987). After reading through this study and noticing the similarities to my research methods, it was determined that the format that they used to conduct their study would be logical to use for my study. In particular, the methods in Talbot, Bardwell and Kaplan's study are broken down into two categories: survey instruments, which I call preparation; and procedure. Subsequently, the results are
listed using visual aids such as charts, tables and photographs, which are used to help illustrate the areas and elements in the study. Finally, conclusions and implications are given. Since it was determined that my study would require the use of charts, tables and illustrations, it seemed logical to use Talbot, Bardwell and Kapian's study as an organizational model.

PART 2: PREPARATION

Before the research could be started, several issues needed to be addressed. First, study sites needed to be identified. Second, preliminary site visits were necessary in order to record the contextual and physical characteristics of those sites. Third, the locations of the different seating elements located within those sites needed to be described. And fourth, user classifications needed to be described.

In order to determine where the study would take place, one primary characteristic was required; the study sites needed to be within an urban environment that contained urban open spaces. In addition, it was imperative that the spaces within this environment contain a variety of seating types and be accessible to a diverse group of users. Philadelphia, Pennsylvania was chosen as the urban environment because it contains numerous urban open spaces which accommodate a variety of seating types, as well as a suitable range of user groups.

Within the city of Philadelphia several open spaces were chosen as possible study sites. These were narrowed down according to the following criteria. The sites had to:

- be located within the center city district where there are a variety of land and building uses.
  
  This was important because with a variety of land and building uses there is the likelihood that the space will be used by a greater number and diversity of people throughout the day. These concepts are supported by several studies. According to Joardar and Neill (1978), "Mixed land uses, shopping and commercial, assured continuous use of the plazas throughout the day" (p. 488). Also, according to Chidister's study of five plazas in Minneapolis, Minnesota, "the best used plaza was in the area of greatest land-use diversity" (p. 125).

- be within close proximity to surrounding streets and among a diversity of land uses, in order to be both highly accessible and to attract a diversity of users.
  
  It was necessary that the study sites chosen be located in a place that would allow for a diversity of users to access the space. This diversity is related to land and building uses. Lynch (1979) suggests that if a space is to be used by many people of different genders, age, social status, culture, ethnicity, etc., then that space must be located within a context that makes it accessible to all of these people. For this reason, the open space type that was
chosen was a square. Squares are highly accessible in that they are bordered on all sides by streets. In addition, they typically attract a diversity of users because of their characteristic centralized location within the city.

- contain a variety of seating types.
  
  Because the focus of this study is on the relationship between user classifications and their use of seating types, it was essential that the study sites contain a diverse assortment of seating types.

- be a suitable size so that the researcher(s) were able to see all of the space from one or two vantage points, but large enough to contain a variety of seating types and attract a diversity of users.
  
  If a space is too small, then some user groups may be discouraged from using the space. For example, a small space that is frequented by street people will most likely not be used by other groups, such as families or the elderly.

These criteria omit certain types of open spaces based on information discovered through a review of the literature on open spaces. It was discovered that certain open spaces such as neighborhood parks, campus outdoor spaces, elderly housing open spaces, day care open spaces, and hospital outdoor open spaces display characteristics that, by definition, limit their access by a diverse group of users or place them in a context that is outside of the urban realm (Cooper-Marcus and Francis, 1990). In addition, other open spaces such as street plazas, corporate foyers, urban oasis and transit foyers are omitted from the possible study site list based on the definitions presented in the literature review. The same situation occurred in courtyards and forecourts, and, in addition, it was found that these spaces were typically quasi-public spaces. Therefore, these criteria describe what Cooper-Marcus and Francis (1990) characterize as the city square.

As a result of this selection process, J.F.K. Plaza and Rittenhouse Square were chosen as the two study sites. These spaces are characteristic of the city square in that they are bordered by streets on all sides, they are centrally located within specific areas, and they are not related to any one building in particular. Two spaces were chosen to provide a comparative basis for analysis and to increase the validity of the conclusions derived from the study in terms of applying the findings to other similar open spaces.

Several preliminary site visits were made in order to determine the characteristics of each site, the seating types that are available in each site, the microclimatic and contextual conditions that exist in each site, and the user classifications who use the sites.
The characteristics of each of the sites were recorded in the form of field notes, by referencing site plans and zoning maps, and photographically. Characteristics that were recorded were the context of each site and the physical characteristics of each site, including such factors as seating type and style, and their locations within each site.

Section 1: J.F.K. Plaza

J.F.K. Plaza is bordered on all four sides by streets and therefore encompasses an entire city block. The characteristics that J.F.K. Plaza displays make it not only physically accessible, but highly accessible to a great diversity of users. It is physically accessible mainly because it is surrounded by streets. Its context allows it to be accessible to a diversity of users.

Context

J.F.K. Plaza is located in the Center City section of the city of Philadelphia. It is located within a distance of two blocks from Philadelphia City Hall.

The land use zoning surrounding and including J.F.K. Plaza is shown in Figure 3.1. This area of the city is designated predominantly for commercial uses. This commercial use designation allows for a wide variety of land uses to exist in the area surrounding J.F.K. Plaza, and therefore supports a diversity of users. The only exception to this designation is beyond the northwest corner of the plaza, where the designation on either side of Benjamin Franklin Parkway is zoned as a Recreational Special District.
Arch Street lies along the north side of the plaza. Along this street across from J.F.K. Plaza there is a Bell Atlantic Office Building and a pay-by-the-hour parking lot. In addition, the entrance and exit to the underground parking garage located beneath J.F.K. Plaza are located between Arch Street and the plaza itself. This provides high visual access into the space by anyone using the parking garage. As suggested in the literature review, this visual access is important to use; people tend to use spaces that are visually accessible both because they appear easily accessible and they provide a perceived level of safety (Francis, 1989). Therefore, the location of the entrance and exit of the parking garage may serve to increase the use of J.F.K. Plaza.
On 15th Street, which is located along the east of the space, there is a large office building called the Municipal Services Building that encompasses the entire block. There are no street level uses on this side, just the wall of the high rise building. Through preliminary observations it was found that 15th Street was rarely used by pedestrian traffic, probably because of the lack of street-level activity. Although it seems that this might affect use of J.F.K. Plaza, this does not seem to be the case. There are entrances to the space located at each corner on this particular side, but not mid-block. Therefore, it seems as though the designers of the space took the lack of pedestrian traffic into account, and designed it in such a way that access is available at the busy corners instead of along the underused mid-block.

John F. Kennedy Boulevard borders the south side of the plaza. Along the side of the street opposite J.F.K. Plaza there are a variety of shops and businesses present at street level. A bank, TWA Travel Agency, bakery and American Express Office are all located toward the 15th Street end of the block. A courtyard which serves as the entrance to the underground transit system is located on the other half of the block. Just as the entrance and exit to the parking garage provided visual access into the space from the north side, the entrance to the underground transit system makes the space visually accessible to a large number of people throughout the day from the south side. This visual accessibility not only increases the perception of safety, but it may serve to increase the use of the space as well. Additionally, the location of street-level businesses across the street from the space serve to increase its use. In particular, people who patronize the bakery may use the space to eat the food that they have purchased.

Along 16th Street on the west side of the plaza lies the Pennsylvania Railroad Suburban Station and the Insurance Company of North America. With Suburban Station in such close proximity to J.F.K. Plaza, use of the space is increased simply because of the great numbers of people who are in the area throughout the day.

The surrounding blocks beyond the immediate bordering streets contain a mix of land uses. Some of those uses include law offices, restaurants, and banks. Additionally, there is a YMCA located beyond the northeast corner of the plaza. Because of this variety in surrounding land uses, J.F.K. Plaza is accessible to a diversity of people with different agendas.

**Physical Characteristics**

J.F.K. Plaza is approximately 2.2 acres in size, encompassing an entire city block. It is a multi-level space that has an upper level located along the south and west sides of the plaza and a lower level located in the center of the site and toward the northwest corner of the plaza (Illustration 3.1 and 3.2).
Being a multi-level plaza, J.F.K. Plaza’s lower level is accessible from ground level at the northwest corner, the northeast corner and the west side of the plaza. Conversely, the upper level is not accessible from ground level. To enter the plaza from the southeast corner into the upper level, one is required to climb two stairs (Illustration 3.3). To enter the upper level at the northwest corner, one must climb ten stairs (Illustration 3.4). In order to enter the park from the southwest corner, where the Visitor’s Center is located, one must ascend three stairs to access the upper level and descend eight stairs to access the lower level (Illustration 3.5). Therefore the only portion of the plaza that is accessible at street level is its lower level. The walkway that surrounds the fountain, with its series of stepped terraces, provides the transition space from the upper level to the lower level and vice versa (Illustration 3.6).

The fountain itself, with its surrounding pool, is located in the lower level of the plaza. The area where this fountain is located is distinctly circular, which visually separates it from the other parts of the space. I have considered the space contained within this circular area to be the interior J.F.K. Plaza, and the other areas to collectively be considered as the exterior. The interior and exterior spaces will be further defined later in this section. Because of its elevation changes, J.F.K. Plaza is most likely perceived as being more
accessible from the northwest and west. It is in these places that there are visually accessible, ground level entrances to the space. It is likely that the southeast corner entrance of the space, with its two steps, is perceived as easily accessible as well.

J.F.K. Plaza is visually disconnected from 15th Street along the east side of the plaza by a retaining wall, until one reaches the southeast corner, where the wall gets lower and a set of two stairs separate the sidewalk and upper level of the plaza (Illustration 3.7). The edge of the plaza along John F. Kennedy Boulevard is formed by a low retaining wall which separates the plaza from the sidewalk until the southwest corner is reached. This is where the entrance to the Visitor’s Center is located and the low retaining wall ends (Illustration 3.8).

ILLUSTRATION 3.7 (left)
Edge of space along 15th Street

ILLUSTRATION 3.8
(right) - Edge of space along J.F.K. Boulevard

Along the west side of the plaza bordering 16th street, there is a low retaining wall that separates the sidewalk from the plaza (Illustration 3.9). This wall is ended about halfway down the block where an entrance to the plaza has been created. To the north of this entrance, the sidewalk is separated from the plaza by a curb-height planting bed until one reaches the corner where there is access to the lower level of the plaza (Illustration 3.10).

ILLUSTRATION 3.9 (left)
Edge of space along 16th Street

ILLUSTRATION 3.10
(right) - Entrance at Northwest corner of space

Although many of the mid-block edges of the space are not accessible, the size and location of the entrances, typically located at the corners of the space, are sufficient to make the space highly accessible both physically and visually.
Key: Arrows denote entranceways.

FIGURE 3.2 - Physical Access to J.F.K. Plaza

Located at the top of the stairway in the upper level of the plaza is a sculpture that simply displays the word "LOVE" (Illustration 3.11, at right) This sculpture is a strong element when viewing or entering the plaza from the southeast corner. The fountain is the prominent element when entering from the northwest corner.

J.F.K. Plaza is a predominantly hard-scape plaza. The only landscaped surfaces present are grassed beds that contain shade trees and annual planting beds. The trees provide shade in most of the upper portion of the plaza, except in the center of the large terrace area toward the southeast corner. Most of the lower portions of the plaza, except along the north edge of the path located on the west side of the plaza,
are not protected from sun exposure. This is important in that it may affect where people choose to sit within the space.

The Philadelphia Visitors Center, a one story circular building, is located on the southwest corner of the plaza, and sits at a higher elevation than any other part of the plaza (Illustration 3.12, at right). It is disconnected from the plaza by stairs and a raised grass area. It is further disconnected from the plaza through its orientation toward the street. The front of the building, and therefore the entrance, faces the intersection of John F. Kennedy Boulevard and 16th Street. Because of the presence of the visitors center, it is expected that a good number of tourists would use J.F.K. Plaza, which would add to the diversity of users.

Located beneath the J.F.K. Plaza is a parking garage that is accessed by vehicles along the north edge of the space (Illustration 3.13). Pedestrian access to the parking garage is located on both the west and east sides of the plaza through the use of stairways that emerge at its perimeter (Illustration 3.14). The locations of these stairways adjacent to J.F.K. Plaza probably have a positive affect on its use. Many of the people who emerge from the stairways walk through the space on the way to their destination.

Street vendors selling food and beverages, and occasionally flowers, are typically found along 16th Street to the west of the plaza, as well as on the southeast corner adjacent to the intersection of John F. Kennedy Boulevard and 15th Street (Illustrations 3.15 and 3.16).
There are a variety of seating types located in J.F.K. Plaza. These types include different styles of benches, walls, steps, and a grassed area. The locations of these seating types are illustrated in Figure 3.3.

Benches are located in both the interior and exterior portions of the site, as defined later in this chapter (Figure 3.4). Generally, benches without backs (Seating 3.1 and 3.2) are located in both the interior and exterior, while benches with backs (Seating 3.3) are located only in the interior. Benches without backs can be found both individually or grouped with one another (Seating 3.4), while benches with backs were either individual or grouped with a bench without a back. There were no benches with backs grouped with other benches with backs.
Therefore, the interior of the space consists of a more diverse seating configuration than the exterior because it contains the following arrangement options: individual benches with backs, individual benches without backs, and grouped benches without backs. The exterior contains only individual benches without backs or grouped benches without backs. All of the benches located in J.F.K. Plaza are constructed of concrete. Figure 3.4 shows the distinctions between the interior and exterior portions of J.F.K. Plaza.
FIGURE 3.4 - Interior and Exterior Portions of J.F.K. Plaza

There are two types of walls located in J.F.K. Plaza, seatwalls/retaining walls and fountain walls. The seatwalls/retaining walls in J.F.K Plaza are generally retaining walls that range in height from about one to eight feet. The taller walls surround the interior of the space (Seating 3.5). Some of the lower walls are located along entrance and exit paths, while others are around the exterior of the space (Seating 3.6).
Still other low walls, particularly those that are around one foot high, are located around the bases of some of the trees in J.F.K. Plaza (Seating 3.7). Where walls meet and/or turn, inside and outside corners are created (Seating 3.8, 3.9, and 3.10). These areas are generally located where paths intersect the interior and exterior portions of the space. Center walls are defined as those that have no turns or corners.

Fountain Walls in J.F.K Plaza consist of both the walls containing the water and fountain (Seating 3.11), as well as the stepped wall leading down to the fountain (Seating 3.12). This stepped wall has risers which are too high, approximately one foot, and treads which are too wide, approximately two feet, to be
considered as steps. There are no corner fountain walls in J.F.K Plaza due to the fact that the fountain is circular. The stepped walls that lead down toward the fountain are curved as well.

Stairs are located between the interior and exterior portions of the space and at every entrance to the upper level of the space. The groups of stairs that are located between the interior and exterior portions of the space consist of three risers each. They are located on the paths that run around either side of the fountain on the interior of the space (Seating 3.13).

The grassed area is located to the rear of the Philadelphia Visitor’s Center in the exterior of the space (Seating 3.14). Since it is located to the rear of the Visitor’s Center, is connected to the sidewalk by narrow paths that are not visually obvious, and is flush with the top of a seatwall, it is not easily accessible.

During the observations, records were taken regarding the locations of the seating types in relation to the microclimatic and contextual conditions of sun/shade exposure, adjacency to a path or walkway, whether the area was open or secluded, and whether the seating was located in an area of high or low traffic.

The amount of sun and shade exposure was determined by whether or not the seating element that was chosen was in the shade or the sun at the time it was selected. Time of day was not taken into account.
when looking at sun/shade exposure. In other words, if a bench was located in the sun in the morning and in the shade in the afternoon, this was not recorded. The only data that was recorded was the sun/shade exposure at the time of use. Elements located in filtered sun, such as those located beneath a tree, were considered to be in the shade.

Path and no path elements were designated based on their adjacency to a path and their direct accessibility from a path. A seating element was considered to be located next to a path if it was directly adjacent to, and therefore accessible from, a path. A seating element that was not physically adjacent to a path, either horizontally and vertically, and was therefore not directly accessible from a path, was categorized as "no path". Examples of no path elements include the circular seatwall where it became too high for a person to sit on by accessing it directly from the path, the stepped fountain walls that are located to the southeast of the fountain, and the low planter walls located beneath the trees. Please refer to Figure 3.5 for an illustration of these places.

**FIGURE 3.5 - Path vs. No Path Seating Elements**
The designation of open or secluded seating was a factor of the location of the seating in terms of its visual and physical accessibility. Open areas are defined as those that are easily accessible both visually and physically. This included most of the interior of the space as well as the entrance/exit paths and the perimeter of the space. Secluded areas, on the other hand, are those areas that are not easily accessible either visually or physically. Seating elements located beneath low-branched trees, including the sections of the high seatwall that are located high above the path and under trees, were considered to be secluded. In addition, high traffic areas were those that had a frequency of pedestrian traffic flow throughout the day. Conversely, those areas that were located away from pathways were considered low traffic areas. The areas of high and low traffic coincide with the areas of open and secluded areas, respectively. These areas are illustrated in Figure 3.6.
Section 2: Rittenhouse Square

Rittenhouse Square is a space that is bordered on all four sides by streets and encompasses an area that is slightly larger than an entire city block. Rittenhouse Square is historically significant because it is one of the five squares laid out by William Penn’s surveyor in 1682 as part of William Penn’s original design of the city of Philadelphia. These squares were intended to be used by the public for recreation and events. As was typical of many historical city squares, Rittenhouse Square was laid out prior to the construction of the neighborhood that currently surrounds it (Vaux, 1985).

Context

Rittenhouse Square is located a few blocks away from J.F.K. Plaza, in a mixed residential and commercial section of Philadelphia. Although Rittenhouse Square was originally designed to be the center of a residential district, the influx of commercial uses into the surrounding areas have made it accessible to a diversity of users, in addition to local residents. Because of its location between residential and commercial districts, and its proximity to office buildings, it attracts a diversity of users; office workers, small business employees, shoppers and residents all have access to the space and use it for a variety of activities.

Rittenhouse Square itself is zoned as a Recreational Special District. The blocks surrounding the park are mixed use areas, as can be seen in Figure 3.7. Furthermore, the blocks beyond those that border Rittenhouse Square follow a pattern of zoning designation: typically the blocks to south and west of the park are predominantly residential areas, while the blocks to the north and east are predominantly commercial areas.
Referring to surrounding street and building uses, Walnut Street lies to the north of Rittenhouse Square. Along this street lies the Rittenhouse Plaza apartment building, a coffee shop, and several clothes stores and banks. Additionally, there is a parking structure and office building located above the stores at the west end of the block.

Along 18th Street to the east of the park there are three apartment or hotel buildings. The ground floors of these buildings house other uses such as a bank, a men’s clothing store, a wine store and a restaurant. Another type of building use which is located beyond the southeast corner of the space is the Curtis Institute of Music.

The presence of ground-floor commercial businesses along both Walnut Street and 18th Street cause a high flow of pedestrian traffic along those two edges of the space. Because of this, the use of Rittenhouse Square is increased; patrons of the coffee shop and restaurant may use it as a place to eat or drink, while shoppers may use it as a place to stop and rest.
To the south of the park, along Rittenhouse Square Street, there are two apartment buildings, a high-rise condo, a bank, and a doctor’s office. Toward the southwest corner of the space lies more apartment buildings and a row of townhouses.

The west side of the space, along Rittenhouse Square West, is predominantly apartment buildings. The only other two building uses on this side of the space are a church and a library, which has apartments located above it.

With these apartments and condominiums located along Rittenhouse Square, there is a lot of use of the space by the residents. Although there is not a great deal of pedestrian traffic along these two sides, there are sufficient numbers of residents people who use the space that the absence of ground-level businesses does not negatively affect the use of the space.

In terms of access, Rittenhouse Square has entrances at each corner, and at several mid-block locations on each of its four sides. All of these entrances are at ground level, making the space easily accessible both physically and visually to all users (Illustrations 3.17 and 3.18).

Figure 3.8 shows the physical access routes to Rittenhouse Square.
Key: Arrows denote entranceways.

FIGURE 3.8 - Physical Access to Rittenhouse Square

Physical Characteristics
In terms of physical characteristics, Rittenhouse Square is a 8.3 acre space that incorporates an area larger than a typical city block. Although there are streets that run into the sides of the park, such as Locust Street and 19th Street, there are no through streets bisecting it. The park is made up of two distinct areas, which I have defined as the interior and exterior portions of the park, as illustrated in Figure 3.9. The interior and exterior parts of the space were defined based on physical and visual factors. A wall surrounds the interior of the space, which is at a slightly higher elevation than the rest of the space. In addition, the interior and exterior parts of the space differ greatly in their design. The exterior is typically landscaped, while the interior is typically hardscaped with cobblestones.
Figure 3.9 - Interior and Exterior Portions of Rittenhouse Square

The interior is oval in shape and contains a low planting bed located in the northwest end of the space with a statue of a lion within it (Illustration 3.19 and 3.20). The southeast end of the space contains a pool with a small fountain. The interior is bisected by a double walkway that is the main pedestrian path connecting the northeast and southwest corners of the park. Access to this interior space is possible by using either the double pedestrian path or the secondary paths at either end of the space. The double pedestrian path entrances are at ground level. Additionally, the northwest corner of the space is accessible at ground level, while the southeast corner is accessible by climbing four stairs (Illustration 3.19, at right).
The exterior of the park consists of soft landscaping with large grassed areas that contain large shade trees. Furthermore, there are a few annual planting beds located between the paths of the double walkway (Illustration 3.21). In addition to the walkways that transverse the park, there is a walkway located in the exterior that encircles the interior portion of the space (Illustration 3.22). Several secondary walkways emanate from the intersections of the paths that cross the park from corner to corner and from the circular path.

There are entrances and exits to the park at every corner, as well as in some mid block locations. Visual access is limited, however, because of a fence and a shrub border that line the perimeter of the park (Illustration 3.23).

The same types of seating that are located in J.F.K. Plaza are located in Rittenhouse Square. These types include benches, walls, stairs, and grassed areas. The locations of these seating types are illustrated in Figure 3.10.
The benches in Rittenhouse Square are located throughout the entire space. Benches without backs (Seating 3.15) are located in the interior portion of the space, while benches with backs (Seating 3.16 and 3.17) are located in the exterior portion and along entrance paths. Because of these locational differences, the benches with backs are more accessible than the benches without backs. Generally, the benches with backs are located directly adjacent to the circulation routes within the space. Conversely, in order to use a bench without a back, a person would have to deviate from the main circulation system. Another characteristic typical of the benches in Rittenhouse is that they are all individual benches; none are close enough together to be considered as grouped.
There is one wall in Rittenhouse Square that acts as the boundary between the interior and exterior portions of the space (Seating 3.18 and 3.19). It is continuous around the entire interior, except for in six distinct locations where the circulation paths intersect the interior. There are shrubs planted on the exterior side of the wall.

The fountain in Rittenhouse Square is located in the interior of the space, to the southeast side of the main pedestrian circulation axis that traverses through the space (Seating 3.20 and 3.21). The water feature acts as a pool with just a small jet of water emanating from a statue at one end. The water in the pool, as well as the pool surface itself, was filled with debris and appeared to be somewhat polluted.
The only set of stairs found in Rittenhouse Square are located to the southeast end of the interior portion of the space, behind the fountain (Seating 3.22).

A large portion of Rittenhouse Square consists of grassed areas (Seating 3.23). These areas are located on the exterior of the park both between the perimeter of the park and the main path, as well as between the main path and the wall. Some of the grassed areas are shady, while others are sunny.

The same microclimatic and contextual conditions that were recorded in J.F.K. Plaza were recorded in Rittenhouse Square regarding the locations of the seating types in terms of sun/shade exposure, adjacency to a path or walkway, whether the area was open or secluded, and whether the seating was located in an area of high or low traffic.

The amount of sun and shade exposure was determined by whether or not the seating element that was chosen was in the shade or the sun. Elements located in filtered sun, such as those located beneath a tree, were considered to be in the shade.

A seating element was considered to be located next to a path if it was directly adjacent to a path. A seating element that was not directly adjacent to a path was categorized as no path. Examples of no path elements were the benches located in the interior of the park, excluding those immediately to either side of the path, the grassed areas, and the seatwall, excluding the sections that were between the double main path. Figure 3.11 shows the locations of path and no path elements.
The open areas of the space were defined to be those that were easy to access both visually and physically. For this reason, one would expect the elements located in the interior of the space to be secluded. However, there were certain sections of the interior of the space that were considered to be in the open. For example, the section of wall located between the double pathway and the fountain wall were both considered to be in open areas. Secluded areas, on the other hand, were those areas that are not easily accessible either visually or physically. Visually, these were the places that were located beneath low- branched trees or the grassed areas that were closer to the interior portion of the space, as shown in Figure 3.12. Physically, these were areas where a person would have to venture off of the pathway to reach. This included many of the benches and wall sections located in the interior of the space, as well as the grassed areas previously mentioned.
High traffic areas were those that had a high frequency of pedestrian traffic flow throughout the day. These areas include seating elements that are located along the double path that bisects the space; the interior benches and wall sections that are adjacent to the path and the wooden benches that line the path. Intersections are also included in the high traffic category. Low traffic areas are those that are located away from the paths, including those seating elements located on or near the path that runs from southwest to northeast through the space and those that are located in the interior of the space, excluding those defined above as being in high traffic areas. The grassed areas are all considered to be low traffic areas. Refer to Figure 3.13 for a visual representation of the high and low traffic areas.
PART 3: USER CLASSIFICATIONS

In addition to the observations done to determine the physical characteristics of J.F.K. Plaza and Rittenhouse Square during the preliminary site visits, observations were done to determine who the users of the two spaces were. Once these observations were completed, the users were categorized into several classes. These classes were derived from review of literature and previous studies, as well as through the preliminary observations of the study sites.

Using the classification schemes of Cooper-Marcus and Francis (1990), Lennard and Lennard (1987), Lynch and Carr (1965), and Gehl (1990) that are presented in Part 3 of the literature review as a basis, user
observations were conducted on both J.F.K. Plaza and Rittenhouse Square in order to devise a classification scheme that was relevant to this research. Where a user class was questionable, the observers would collaborate to determine to what class the user belonged. The methods used to devise the classification scheme are described in Appendix E.

The use of these methods resulted in seven categories of users: groups of children who were accompanied by and adult(s), teenagers, adults with children, adults in intimate situations, casual adults, business adults and street adults.

Therefore, through the use of preexistent classification schemes and observations of users, a classification scheme for this research could be devised. The user classifications and their descriptions are as follows:

- **Casual Users**
  - members of the casual adult category
  - age range of 18 years old and older
  - dressed in attire such as shorts, jeans, cotton pants, T-shirts, sport shirts or sweatshirts, sneakers, loafers
  - participated in behaviors such as eating or drinking; smoking a cigarette; talking with other people; watching people; resting, relaxing or simply hanging out; or wading in the fountain

- **Professional People**
  - members of the business adult category
  - age range of 18 years old and older
  - dressed in attire such as business suits, ties, skirts, blazers, high heels, dress shoes
  - participated in behaviors such as eating or drinking; smoking a cigarette; reading a book, magazine or newspaper; talking with other people; watching people; resting, relaxing or simply hanging out; or passing through

- **Families**
  - members of the adults with children category
  - age range including a child or children approximately 12 years and younger and an adult or adults 18 years and older
  - dressed in attire such as shorts, jeans, cotton pants, T-shirts, sport shirts or sweatshirts, sneakers, loafers
  - participated in behaviors such as eating or drinking; talking; resting, relaxing or simply hanging out; passing through; or wading in the fountain
• Teenagers
  - members of the teenager category
  - age range of approximately 12 to 18 years of age
  - dressed in attire such as shorts, jeans, cotton pants, T-shirts, sport shirts or sweatshirts, sneakers, loafers
  - participated in behaviors such as eating or drinking; smoking a cigarette; talking with other people; watching people; resting, relaxing or simply hanging out; or wading in the fountain

• Couples
  - members of the adults in intimate situations category
  - age range of 18 years old and older
  - dressed in attire such as business suits, ties, skirts, blazers, high heels, dress shoes or shorts, jeans, cotton pants, T-shirts, sport shirts or sweatshirts, sneakers, loafers
  - participated in behaviors such as talking intimately with their arms around each other or holding hands (typically these people did not participate in any other behavior)
  - According to Robert Sommer, there are different envelopes of personal space that people leave around them in social situations. He defines intimate distance as the distance that two people who were familiar with each other would sit apart from each other. This distance, according to Sommer, is 1 to 1.5 feet. This guideline, along with the information mentioned above, was used to assist in determining who was a couple and who was not.

• School Groups
  - members of the groups of children who are accompanied by an adult(s) category
  - age range including children approximately 12 years and younger and an adult or adults 18 years and older
  - dressed in attire such as shorts, jeans, cotton pants, T-shirts, sport shirts or sweatshirts, sneakers, loafers
  - participated in behaviors such as relaxing or simply hanging out; or passing through
  - the children in this group were all of approximately the same age

• Street People
  - members of the street adult category
  - age range of 18 years and older
  - dressed in attire such as clothes that were dirty and torn
  - participated in behaviors such as eating or drinking; smoking a cigarette; talking with other people; watching people; resting, relaxing or simply hanging out

64
- Often, these people were present in the spaces when the researcher(s) arrived each morning, and remained there until after the research period was completed each day.

**PART 4: CONDUCTING THE STUDY - PROCEDURES**

After the preliminary site visits were made and the study sites, seating elements and user classes were identified, the procedures for conducting the study could be defined and described. First, a description of how the researchers would conduct the study was identified; second, observation procedures were outlined; and third, interview procedures were delineated.

In order to conduct the research, three researchers, including the author, were employed. In order to prepare these researchers for the study, the following was done:

- Pre-designed data sheets were supplied to account for the data that was to be collected during the study. In addition, the researchers were told to record supplementary observations in a supplied notebook about other things that were occurring in the spaces throughout the day. These supplementary observations were to be based on the user classes and seating types, but were not limited to this type of information.

- In order to make the observations more accurate, the researchers would observe together for the first hour of the first day of the study period in each space. This way, the researchers could more uniformly identify user classes and seating types.

Both observations and interviews were used to conduct the research. In each space, two separate samples were taken: one for the observation, and one for the interview. Fifty observations and 50 interviews were conducted in each park according to the following schedule:

<table>
<thead>
<tr>
<th>TABLE 3.1 - Observation and interview schedule.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>JOHN F. KENNEDY PLAZA</strong></td>
</tr>
<tr>
<td>Monday July 17</td>
</tr>
<tr>
<td>Tuesday July 18</td>
</tr>
<tr>
<td>Wednesday July 19</td>
</tr>
<tr>
<td>Thursday July 20</td>
</tr>
<tr>
<td>Observe (20)</td>
</tr>
<tr>
<td>Observe (20)</td>
</tr>
<tr>
<td>Observe/Interview (10/25)</td>
</tr>
<tr>
<td>Interview (25)</td>
</tr>
</tbody>
</table>

On each of the days during the study, the research would start at approximately 8:30 A.M. and continue until approximately 1:30 P.M. The only exceptions to this time frame were on Wednesdays if the observations were completed early, or on Thursdays if the interviews were completed early. If observations and interviews were completed early, based on the number of observations and interviews per day listed above and the allotted study times, the research was finished for the day.
After the observation and interview schedule was devised, more specific information about the observation and interview procedures to be used to conduct this research could be described.

The purposes of the observations were to:

1. Determine what classifications of people used what types of seating in J.F.K. Plaza and Rittenhouse Square during a limited weekday time period.
2. Gain an understanding of the range of available seating that was most used in both of these spaces.

During the study periods in both J.F.K. Plaza and Rittenhouse Square, two types of observations were recorded. First, official observations were recorded using prepared observation sheets. In addition to this, however, supplemental observations in the form of field notes were recorded in order to gain a more generalized understanding of the seating and behavior patterns within each open space. For clarity, the term “observation period” or the phrase “during the observations” will refer exclusively to those observations that were part of the 50 officially recorded observations. Observations that were not part of this 50 will be referred to using the term “supplemental observations” or the phrase “during the study period.”

When considering where the different user classes sit, individual couples, families and school groups were considered as a single observation. For instance, although each school group consisted of 18 individual people, they were each counted as one observation. By counting them as one observation each, the results of the analysis were more accurate. This is because, as observed during the study, the members of school groups, couples and families all sat in the same place and used the same type of seating. Furthermore, groups of casual users, professional people, teenagers, and street people were each counted as one observation. The reason for this is that, with the exception of one professional group, all of the members of these groups used the same type of seating. The one group that did not all use the same type of seating used both a bench and a wall. This exception was taken into account when proportion calculations were done.

The following segment outlines the observation procedure that was followed in both J.F.K. Plaza and Rittenhouse Square during the study period, as presented in the table above.

- At approximately 8:20 A.M. on the designated mornings, the researcher(s) positioned themselves within the space so that they were able to see the entire space.

- Beginning at 8:30 A.M. the researchers watched for people who entered the space and used a seating element within the space. When a person began using the seating element he/she became a subject.
At the time that the subject began to use the seating element, the researcher recorded the time of day and began to measure the duration of use using a stop-watch.

- Each subject was observed for 15 minutes beginning when the subject started to use a seating element. If the subject left the seating element before the 15 minute period was concluded, then that observation was over and the next observation would begin using the same methods. The subject for the next observation was the next person that was seen entering the space.

The 15 minute time limit was imposed because it was assumed that the user would select and use the seating type that he or she most preferred within the first 15 minutes that he or she was in the space. In addition, the 15 minute time limit allowed the researchers enough time to conduct an adequate number of observations during the limited study period.

- For each subject, the researcher recorded information on three pre-designed data sheets; a Demographics Sheet and Activity Chart, a People Classifications matrix, and a Locations of Seating Types matrix. These data sheets are illustrated in Appendix B. Each of the data sheets were completed for each subject. By placing a mark in the appropriate boxes on both the User Classifications matrix and the Locations of Seating Types matrix, it could be determined what person classification used which seating type and in what context or location.

- In addition to the data collected on the pre-designed data sheets, supplementary observations of user activity within the space were made throughout the day. These observations were recorded in the form of field notes and helped the researchers to better understand the dynamics in each space.

- These methods continued until the observation period was done for that day. On each day that was designated for observations, the observations were conducted in the same manner.

Interviews were conducted separately from the observations. There are three main purposes for conducting the interviews:

1. To determine if the users of the urban open spaces believe that there were enough seating opportunities available.
2. To determine what, if any, changes urban open space users would like to see in the spaces.
3. To determine what factors influence people in their choice of seating in urban open spaces.

The interviews took place in both J.F.K. Plaza and Rittenhouse Square according to the aforementioned schedule. The following segment outlines the procedures that were followed in conducting the interviews.
• Beginning at 8:30 A.M. on the Wednesdays during the study period, one researcher conducted the remaining observations, while the other began conducting interviews.

• Based on user class information gathered in the preliminary observations, subjects were chosen with the goal of balancing the convenient sample, and therefore representing the user classes who used each space.

• The researcher who conducted the interviews identified herself as a researcher who was conducting a study for a Master of Landscape Architecture thesis on seating types and their use in urban open spaces. If the person agreed to participate in the interview, he/she became a subject and was asked a series of open-ended questions. The pre-designed data sheet used in the interview process is illustrated in Appendix C. If the person did not agree to the interview, the researcher would move on to the next potential subject.

• After each interview was completed, the researcher would approach another potential subject and the process would be repeated. The next potential respondent was chosen based on the seating type that he or she was using. For example, if several people using benches were already interviewed, the researcher would choose someone sitting on a wall to interview next.

After completing both the observations and the interviews, the data was organized and analyzed to determine whether or not there were any seating use patterns evident across the designated user classes. In addition, data was analyzed to determine if the users of the spaces thought that there were enough seating opportunities available, and what other types or styles of seating they would like to see implemented.
CHAPTER 4: ANALYSIS

Part 1 and Part 2 of this chapter present an analysis of the data collected in J.F.K. Plaza and Rittenhouse Square, respectively.

PART 1: J.F.K. PLAZA

Section 1: Observation Analysis

A total of 50 observations were made in J.F.K. Plaza beginning at approximately 8:30 A.M. and ending at approximately 1:30 P.M. on three consecutive days during the month of July, 1995. The observations consisted of watching both individuals and groups of people as they used the seating elements within the space. The following table describes the demographics of the observation group. The age of each of the subjects is an approximation which was determined based on the researcher’s knowledge and previous experience.

TABLE 4.1 - Demographics of the Observation Group in J.F.K. Plaza

<table>
<thead>
<tr>
<th>SEX</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; or = 17</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>18 to 24</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>25 to 50</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>&gt; 50</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td></td>
</tr>
</tbody>
</table>

On all four days that were spent in J.F.K. Plaza, the weather conditions remained consistent. The mornings were cool and breezy until approximately 10:00 A.M. Thereafter, the early morning clouds would break and the breeze would die down. The late mornings and afternoons were sunny and generally hot. Temperatures ranged from 76 degrees in the early mornings up to 92 degrees in the late mornings and afternoons. It did not rain on any of the study days.

In the mornings, there were always a few street people sleeping on the benches. They were typically awake and walking around by 9:00 or 9:30 A.M. The fountain was turned on between 8:30 and 8:45 A.M. every morning by a member of the maintenance crew. After turning the fountain on, the maintenance man began to clean the space by picking up trash and soaping down and sweeping all of the concrete walking surfaces within the interior of the space.

Occasionally, when there was a wind gust, the fountain spray would create a mist that was carried toward the southeast corner of the space. For this reason, the stepped fountain walls remained damp throughout most of the days. The fountain makes a good deal of noise that helps to block the sounds of the
surrounding city. In the late afternoon heat, people were seen wading in the fountain, or, in the case of some teenagers and children, swimming in the fountain.

The space seemed to be very well-used as a through route from the northwest corner to the southeast corner. Many professional people, particularly in the morning hours, traveled this route. At approximately 10:00 to 10:15 A.M. every morning, the space seemed to become more "alive"; people were using the space for such things as eating, resting, and smoking cigarettes. The lunch hour, which runs from about 11:00 AM to 1:30 PM, was the busiest time in the space. When a walk-through was done during this time, 80 people were sitting in the space as opposed to the 27 people who were present during an earlier walk-through. It appears that J.F.K. Plaza is more of a destination or a throughway than a place that people simply encounter and decide to sit in. Most people did not take long to find a seat, or they had their lunch or a book with them and were using the space for a specific reason. It was evident after only a few hours of observations that the walkway on the south/southwest side of the fountain is used much more than the walkway on the opposite side, as shown in Figure 4.1.

FIGURE 4.1 - Typical Pedestrian Use Patterns in J.F.K. Plaza
All seven user classes, defined in Chapter 3, were represented in the space at some time during the observation period. It was observed that individuals within each user class did not intermix with individuals from other user classes. For example, professional people were observed in groups with other professional people, casual users were in groups with other casual users, and so on. No groups that were observed were a mixed group of professional people and casual users, for example.

The following table summarizes the observations in terms of the number and percentage of people observed from each user class. Individual observations are those that were done on single, individual people, while group observations are those that were done on groups of people, for example casual groups or professional groups of more than one person.

<table>
<thead>
<tr>
<th>USER CLASSIFICATION</th>
<th># OF OBSERVATIONS (out of 50)</th>
<th>PERCENTAGE (%)</th>
<th># OF INDIVIDUAL OBSERVATIONS</th>
<th># OF GROUP OBSERVATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casual Users</td>
<td>26</td>
<td>52</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>Professional People</td>
<td>10</td>
<td>20</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Families</td>
<td>4</td>
<td>8</td>
<td>---</td>
<td>4</td>
</tr>
<tr>
<td>Teenagers</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Couples</td>
<td>3</td>
<td>6</td>
<td>---</td>
<td>3</td>
</tr>
<tr>
<td>School Groups</td>
<td>2</td>
<td>4</td>
<td>---</td>
<td>2</td>
</tr>
<tr>
<td>Street People</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>---</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>33</td>
<td>17</td>
</tr>
</tbody>
</table>

Generally, about half of the users observed in J.F.K. Plaza were casual users, and about twenty percent were professional people. The remaining users were members of the other five user classes.

In order to determine which user classes used which seating types, a calculation had to be made to make the total percentage of each user class using the space comparable to the percentage of each user class using each different seating type. Simply using the percentage of each user class utilizing each seating type was not acceptable because the total number of each user class utilizing the space was different. For example, since casual users made up 52% of the total observation population, it is expected that they would account for the highest number of sitters using any of the seating types simply because there were more members of this user class present in the space than members of any other user class. If this happened, the results would show that casual users used benches, for example, most because most of the people observed sitting on the benches were casual users. For this reason, the number of different user classes that used the space and the number of different user classes using each different type of seating in the space were made proportional to each other. This was accomplished by utilizing the following method, which is illustrated utilizing the casual and professional user classes, and benches as the seating type:
1. The total number of each user class during the observation period was calculated:
   - 26 out of 50 of the observations were of casual users while
   - 10 out of 50 of the observations were of professional people users.

2. The number of each type of user using each type of seating was calculated:
   - 15 of the 24.5 people who used benches were casual users
   - 5.5 of the 24.5 people who used benches were professional people users (as previously noted, the .5 is a result of one of the professional groups being divided in the seating type that they used).

3. The total number of each user type was then compared to the total number of each user type in each of the other people type categories:
   - 26 of the total users were casual users compared to 10 of the total users being professional users.
   - This means that for every 1 professional type user, there was 2.6 casual type users.

4. The total number of each user type in each seating category was then compared to the total number of each user type in each of the other user categories for that same seating:
   - 15 of the total bench users were casual users compared to 5.5 of the total bench users being professional users.
   - This means that for every 1 professional type user, there was 2.7 casual type users.

5. By doing this for each person type in each seating category, it is possible to make the two categories proportionate. Then, the final step is to compare the results of these last two steps:
   - Since the ratio of casual users to professional users is 2.6:1 for the total number of users, and the ratio of casual users is 2.7:1 for benches in particular, it can be deduced that casual users and professional type users used benches at approximately the same frequency.

This method was applied to all of the user classes and all of the seating types. Subsequently, it could be determined which of the user classes utilized which of the seating types most frequently.

The different seating types that are present in J.F.K. Plaza and that were utilized by people during the observations are as follows: benches, both with and without backs, and grouped and individual; walls, including inside and outside corner walls, and center walls; center fountain walls; and stairs. Another seating type that was present were individual chairs. Although no group was observed as using these chairs during the observation period, the supplementary observations revealed that these seats were used by street people exclusively. Railings, statues and grass were not used as seating elements during the observation period in J.F.K. Plaza.
Under each seating type heading, the seating will be described in a number of ways. First, the locations of the particular type of seating within the space will be described. Second, the use of the type of seating will be presented. In this subdivision, all different styles of each type of seating will be considered as one type of seating. For example, benches with backs, benches without backs, grouped benches and individual benches will all be combined under the broad category “benches.” The same holds true for the walls; inside corner walls, outside corner walls, and center walls will all be considered “walls.” Third, each style of seating will be described individually in order to discover which styles of each seating type are most preferred. This means that styles of each seating type such as benches with backs as opposed to benches without backs will be analyzed regarding their frequency of use. Fourth, observations that were made outside of the official observations will be provided to supplement that data.

The following table provides the percentages of observations that used each seating type. Subsequent to this table, more detailed information regarding the seating types that were used most by each of the user classes will be presented. For each seating type category the styles of that type of seating that were utilized most will be presented as well. In addition, information accrued from the supplementary observations will be presented.

<table>
<thead>
<tr>
<th>SEATING TYPE</th>
<th>PERCENTAGE (% OF USE)</th>
<th>USER CLASSIFICATION USED BY (in order of used most to used least)</th>
<th>NOT USED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benches</td>
<td>49</td>
<td>street people, couples, casual users &amp; professional people, families</td>
<td>teenagers, school groups</td>
</tr>
<tr>
<td>Walls</td>
<td>33</td>
<td>family groups &amp; teenagers, casual users &amp; professional people</td>
<td>couples, street people, school groups</td>
</tr>
<tr>
<td>Fountain Walls</td>
<td>16</td>
<td>school groups, couples, families, teenagers, casual users</td>
<td>professional people, street people</td>
</tr>
<tr>
<td>Stairs</td>
<td>2</td>
<td>teenagers</td>
<td>all other user classifications</td>
</tr>
</tbody>
</table>

Generally, benches were the most frequently used seating type, followed by walls, fountain walls, and stairs.

Benches were used most by street people followed by couples, then casual users and professional people, who used them with the same frequency. Families were the only other user class to use benches; teenagers and school groups did not use them at all. Benches with backs were utilized more than benches without backs. Grouped benches were much less popular than individual benches.
Family groups and teenagers were the most frequent users of walls, whether they were corner or center walls. Casual users and professional people frequented walls equally, but less than families and teenagers. Couples, street people and school groups were not observed using walls at all during the observation period. Center walls seemed to be the most popular wall style to sit on. Outside corner walls were utilized less than center walls, and were generally utilized by individuals rather than groups. During the observation period, inside corner walls were used by only one individual. The seatwalls that seem to be utilized most are the high walls that surround the interior of the space.

School groups used fountain walls most, followed by couples, families, teenagers, and casual users. Professional people and street people did not use the fountain walls at all. Only one group was observed as using the stepped walls, while the others all sat directly on the actual fountain wall. Furthermore, only two people were seen interacting with the water; the others just watched it.

The only person who used the stairs as a seating element was a teenager. The only set of stairs used as a seating element is located on one of the paths surrounding the fountain.

During the observations, records were taken regarding the locations of the seating types with regard to sun/shade exposure, location in the interior or exterior of the space, adjacency to a path or walkway, whether the area was open or secluded, and whether the seating was located in an area of high or low traffic. In addition to this data, locations of users were recorded in the supplementary observations. An analysis was performed using both of these sources of data.

The records were analyzed in order to determine which user classes preferred which physical setting that may have influenced their seating choice. For example, within each user class, the number of people who sat in the sun was compared to the number of people who sat in the shade. If the majority of the people in that group sat in the shade, then it was determined that that group preferred to sit in the shade. Since all individuals are different in their preferences, however, this was done simply to provide the reader with insight as to the behaviors that took place during this research.
TABLE 4.4 - User preference for particular microclimatic or contextual conditions.

<table>
<thead>
<tr>
<th>MICROCLIMATIC OR CONTEXTUAL CONDITION</th>
<th>CONDITION</th>
<th>USER CLASSIFICATIONS WHO PREFER THIS CONDITION (in order of preferred most to preferred least)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun/Shade Exposure</td>
<td>Sun</td>
<td>couples, school groups</td>
</tr>
<tr>
<td></td>
<td>Shade</td>
<td>casual users, professional people, teenagers</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>families, street people</td>
</tr>
<tr>
<td>Interior vs. Exterior</td>
<td>Interior</td>
<td>casual users, professional people, couples, school groups, teenagers</td>
</tr>
<tr>
<td></td>
<td>Exterior</td>
<td>street people</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>families</td>
</tr>
<tr>
<td>Path vs. No Path</td>
<td>Path</td>
<td>casual users, professional people, couples, school groups, teenagers</td>
</tr>
<tr>
<td></td>
<td>No Path</td>
<td>families</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>-----</td>
</tr>
<tr>
<td>Open vs. Secluded</td>
<td>Open</td>
<td>casual users, professional people, couples, school groups, teenagers</td>
</tr>
<tr>
<td></td>
<td>Secluded</td>
<td>families</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>-----</td>
</tr>
<tr>
<td>High Traffic vs. Low Traffic</td>
<td>High Traffic</td>
<td>casual users, professional people, couples, school groups, teenagers</td>
</tr>
<tr>
<td></td>
<td>Low Traffic</td>
<td>families</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>-----</td>
</tr>
</tbody>
</table>

This data seems to indicate that families preferred areas that are secluded, away from high traffic areas, and away from paths. All other groups seemed to prefer more exposed, high use areas.

More specifically, casual users, professional people and teenagers all seemed to prefer the shady places in J.F.K. Plaza, while couples and school groups seemed to prefer the sunny areas. Families and street people did not have a preference either way, although this was difficult to discern for the street people because of the mobility of this user class. Street people did not stay in one place for long periods of time. When they moved, there was little consistency in the microclimatic conditions that were present, but some consistency in the contextual conditions. They typically moved about the exterior portion of the space, but did not seem to prefer any particular microclimatic condition. Therefore, it is unknown what influenced the street people to move about the exterior of the space.

Casual users, professional people, couples, school groups and teenagers all seemed to prefer to sit in the interior of the space. Families used both the interior and the exterior, while the only group that preferred the exterior was the street people. The families that did use the exterior, however, positioned themselves along the wall surrounding the interior of the space. It was within the exterior, primarily in the upper level, that street people were located throughout each day of the study.
All groups in J.F.K. Plaza preferred to be adjacent to paths except for family groups. The family groups were not next to paths because they often positioned themselves along the exterior side of the high seatwalls. In this location, they were separated from the paths by a planting bed on the exterior side and by the height of the wall above the path on the interior side. Members of the other user classes tended to sit on elements that were easily accessible, and therefore adjacent to, the paths.

Since the open and secluded sections of J.F.K. Plaza coincide with the path and no path areas respectively, the user classes that used these areas were the same. One behavior worth mentioning, however, was the tendency of professional people to sit on the planter walls beneath the trees toward the west side of the space. This seating element in this particular area, which was used by professional people exclusively, is considered a secluded space away from a path.

Since the high and low traffic areas in J.F.K. Plaza, coincide with the path and no path areas, respectively, the family groups were the only ones who seemed to prefer low traffic areas. They used such places as the high sections of the seatwall and the stepped fountain walls.

Section 2: Interview Analysis

A total of 50 interviews were conducted in J.F.K Plaza. The interviews were done on the last two days of the observation period. The following table describes the demographics of the interview group.

<table>
<thead>
<tr>
<th>USER CLASS</th>
<th>SEX</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>&lt; or = 17</td>
</tr>
<tr>
<td>Professional People</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Casual Users</td>
<td></td>
<td>18 to 24</td>
</tr>
<tr>
<td>Teenagers</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>Families</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Couples</td>
<td></td>
<td>&gt; 50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Questions asked:
- In your opinion, are there enough seating opportunities available in this space?
- If not, then what changes do you think should be made?
- Why did you choose this particular type of seating?

In the following sections, the responses to these questions will be discussed. In all but the first question it was typical for a respondent to give more than one answer to the question asked. In order to acquire more accurate results, all of these responses were recorded. For this reason, the number of responses to question
one will be represented as a percentage, while the number of responses to questions two and three will be represented as a number.

**In your opinion, are there enough seating opportunities in this space?**

**TABLE 4.6 - Responses to question #1.**

<table>
<thead>
<tr>
<th>ANSWERS GIVEN</th>
<th># OF PEOPLE WHO RESPONDED WITH THAT ANSWER</th>
<th>% OF PEOPLE WHO RESPONDED WITH THAT ANSWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>No</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Don’t know</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>No, not during the lunch hour</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

There was no clear consensus regarding whether or not there was enough seating available in J.F.K. Plaza. Half of the respondents answered positively, and half answered negatively. Concerning the fourth response given by the interview subjects, it was perceived that during the lunch period, which was defined as beginning at approximately 11:00 A.M. and ending at 1:30 P.M., there were not enough places available for both the lunch users and the “every day” users who occupied the space at different times throughout the day. Basically, the seating in the space was seen as inadequate to support the combined crowd during the lunch hour.

It seems as though there is a discrepancy in the perceptions of what constitutes an adequate amount of seating in J.F.K. Plaza. This is due in part to the characteristics of the people who were interviewed. For example, a professional person may perceive inadequate seating if there are not enough benches or walls in the space, while a teenager may perceive inadequate seating if there are not enough walls and stairs in the space.

**If not, then what changes do you think should be made?**

This question was asked of all those who responded negatively to question one; 25 of the 50 respondents. Every one of the respondents answers were recorded, and therefore the number of answers is greater than the number of respondents. In addition, the twenty-five “nothing” responses reflect the opinions of the people who thought that there were enough seating opportunities available in the space. This question was formatted to allow the respondents to express their perceptions and opinions about the seating in J.F.K. Plaza.
TABLE 4.7 - Responses to question #2.

<table>
<thead>
<tr>
<th>ANSWERS GIVEN</th>
<th># OF TIMES EACH RESPONSE WAS GIVEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing</td>
<td>25</td>
</tr>
<tr>
<td>More benches during lunch</td>
<td>2</td>
</tr>
<tr>
<td>More seating in general</td>
<td>10</td>
</tr>
<tr>
<td>Cleaner</td>
<td>1</td>
</tr>
<tr>
<td>More benches with backs</td>
<td>4</td>
</tr>
<tr>
<td>Don't know</td>
<td>3</td>
</tr>
<tr>
<td>More comfortable seating</td>
<td>5</td>
</tr>
<tr>
<td>More walls</td>
<td>1</td>
</tr>
<tr>
<td>More seating in the shade</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
</tr>
</tbody>
</table>

Generally, about half of the respondents suggest that more seating be placed in the space, while the other half suggest that changes be made in the quality, comfort and location of the seating.

Suggestions were made regarding the amount of seating, the styles of seating, and the location of seating. There were ten people who believed that more seating is necessary, although they did not specify what type of seating. Five people wanted more comfortable seating, but did not suggest how this comfort could be achieved. Related to this need for comfort, four people specifically suggested that more benches with backs are needed. They said that benches without backs are simply not comfortable because there is nothing for them to lean on or prop themselves up against. Two people suggested that more seating was necessary during the lunch hour. They did not specify how this seating could be implemented, but it is assumed that they meant that the space needs more seating to accommodate the large crowds that use it during the lunch hour. None suggested that more seating actually be placed in the space just during the lunch hour.

Although the addition of benches to the space was mentioned most often by the interviewees, one suggested that more walls be constructed in the space. He mentioned that walls provide a greater variety of seating opportunities, in terms of positioning, than do benches. With regard to the location of seating within the space, two people mentioned that more seating is needed in the shade. They were concerned that during the hot summer months when people wanted to be outside, there were not enough places available for them to sit in the shade.

In terms of other aspects of the space that the interviewees thought needed to be changed, the two most common answers were maintenance and aesthetics. Some people said that the space was dirty and dingy, and that it needed to be “cleaned” more often. Others stated that the space needs more vegetation and flowers. Basically, they wanted to see more “green” within the space. Presently, it is described as being too hard-scaped and “dreary.”
Why did you choose this particular type of seating?

Although the question that was asked was intended to yield information on the particular types of seating, many of the responses were given in terms of the location of the seating that the subject used. This seems to suggest that location of seating, rather than the design of the seating, is more important to the users of J.F.K. Plaza. This finding may have important implications for designers of urban open spaces. Instead of concentrating on the design of the seating elements themselves, designers may need to be more concerned with the placement of the seating elements within the spaces.

In response to this question, the subjects responded with answers related to the following factors: climate, availability of seating, contextual location, views, avoidance of a specific circumstance, or comfort.

<table>
<thead>
<tr>
<th>TABLE 4.8 - Responses to question #3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSWERS GIVEN</td>
</tr>
<tr>
<td>Available</td>
</tr>
<tr>
<td>All benches full</td>
</tr>
<tr>
<td>Shade</td>
</tr>
<tr>
<td>Breeze from fountain</td>
</tr>
<tr>
<td>Close to entry/exit</td>
</tr>
<tr>
<td>Watch water</td>
</tr>
<tr>
<td>Easy to see because waiting for someone</td>
</tr>
<tr>
<td>Seating has back</td>
</tr>
<tr>
<td>Private/away from people</td>
</tr>
<tr>
<td>Comfort of bench</td>
</tr>
<tr>
<td>Away from street people</td>
</tr>
<tr>
<td>Near grass</td>
</tr>
<tr>
<td>Sun</td>
</tr>
<tr>
<td>Away from fountain spray</td>
</tr>
<tr>
<td>See other people (people watch)</td>
</tr>
<tr>
<td>Back protection</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Generally, most of the respondents were primarily concerned with physical and psychological comfort, availability, and the location and orientation of the seating. To a lesser extent, they were concerned with the type and/or style of the seating itself.

Concerning climatic conditions, the amount of sun and shade exposure, as well as wind exposure, had an effect on where people sat within the space. Many of the people interviewed, particularly casual users and professional people, said that they chose to sit where they did because it was located in the shade. This answer was given by 18 of the 50 people interviewed. Sun, on the other hand, was given as a reason by
only five of the interviewees, four of whom were professional people. So it was apparent that, given the weather conditions on these particular days, in the summer when the temperatures were in the upper 80’s to mid 90’s, shade was a more desirable characteristic than sun, and that the location of the shady areas in the space helped to determine where a person chose to sit. Furthermore, five people mentioned that they were sitting where they were because of the breeze created by the fountain. Two of these were casual users while the other three were a professional person, a family and a teenager. These people said that elsewhere in the space there was little or no breeze which made it very uncomfortable for sitting, especially on hot summer days. A problem with this seating that was mentioned was that occasionally the breeze was too strong and mist from the fountain would hit the person sitting there. This aspect only seemed to be considered a problem by professional people, presumably because of the clothes that they were wearing and the fact that they had to return to work.

After climate, availability seemed to dictate where people sat in J.F.K. Plaza. Nine people, most of whom were either casual users or professional people, sat where they did because it was the first available seating element that they saw. Others, particularly professional people not seated on benches, said that they were sitting where they were because all of the benches were full.

Context, or relationship to a desired area or element, governed where some people sat. Some people, particularly professional people, stated that they sat where they did because it was “close to an exit,” while one casual user mentioned that he wanted to be “near the grass.”

With regard to views, people tended to sit where they could get a good view of a desired element. Some people said that they wanted to be able to see the water while others said that they wanted to be able to see other people. This type of behavior is referred to as “people watching” according to researchers such as William Whyte (1981). Professionals were the people who wanted a good view of the water, while both casual users and professional people wanted a view of other people. From the locations that they had chosen, they believed that they could get the best views of the elements that they wanted to see. Another view that was mentioned was not the view that the interviewees had, but rather the view that other people had of them. This was true in one particular case of a female casual user who was sitting on the fountain wall. She was waiting for a friend and the fountain wall, being located in the center of the space and adjacent to the most obvious feature in the space, was a place of very high visibility. In this location, her friend would be able to find her more easily.

Avoidance can be related to a variety of circumstances. For example, the avoidance of a particular object or behavior can dictate where a person chooses to sit. In the interviews, it was discovered that some people, particularly casual users and professional people, preferred to sit away from other people. The subjects did
not suggest that they felt uncomfortable around other people or that they were afraid of them, but rather that they just liked to be alone. Therefore it was deduced that these people preferred to sit away from other people simply because they enjoy being more secluded and detached from the crowds of people. One particular type of person who was avoided was the street person. One person, a female professional person, said that she did not want to sit anywhere near street people. Avoidance did not always refer to people, however. A few professional people stated that they sat where they did to avoid the spray from the fountain. To them, staying dry was an important factor that affected their seating choice.

In terms of comfort, both physical comfort and psychological comfort were factors that determined seating choice. Regarding physical comfort and in response to the question asked, both professional people and casual users chose benches because, in general, they were more comfortable than walls or other seating elements. In addition, one casual user said that she chose a bench with a back because it was more comfortable than the benches without backs. Psychologically, one respondent mentioned that back protection was a factor that influenced his decision of where to sit. In this particular case, the respondent pointed out that a “back” was formed by a tree that separated him from the pathway that was behind where he was sitting. This suggests that the perception of a “back” is important because for many people it is uncomfortable to have people walking behind them where they are unable to see the actions and behaviors that are taking place. Therefore, by positioning themselves so that there is an element separating them from these activities, their psychological comfort can be greatly increased.

PART 2: RITTENHOUSE SQUARE

Section 1: Observation Analysis

In Rittenhouse Square a total of 51 observations were conducted consisting of watching both individuals and groups of people as they used the seating elements within the space. Observations began at approximately 8:30 A.M. and ended at approximately 1:30 P.M. on three consecutive days in the month of July, 1995.

TABLE 4.9 - Demographics of the Observation Group in Rittenhouse Square.

<table>
<thead>
<tr>
<th>SEX</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>&lt; or = 17</td>
</tr>
<tr>
<td>Female</td>
<td>18 to 24</td>
</tr>
<tr>
<td></td>
<td>25 to 50</td>
</tr>
<tr>
<td></td>
<td>&gt; 50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
</tr>
</tbody>
</table>
The weather conditions in Rittenhouse Square closely resembled those that had occurred in J.F.K. Plaza during the previous week. Generally, the mornings were cool and breezy, but by late morning into the afternoons, the emergence of the sun made the temperature rise and it became hot. On all four days that were spent in Rittenhouse Square, the weather conditions remained consistent. The temperature each day ranged from 82 degrees to 95 degrees and it did not rain on any of the study days.

Very few people were present in the space in the mornings. Most of the people who were there were elderly people or people walking their dogs. It was not until mid-morning, around 10:00 A.M., that the space started to become filled with people.

Most of the morning pedestrian traffic in the space occurred from the southwest corner to the northeast corner, as shown in Figure 4.2. This was probably because many of the residences are located to the south and west of the space, while the business offices and retail stores are generally located to the north and east. Both professional people and casual users were seen traversing the space, especially in the early morning. This pedestrian traffic flow happened again at the beginning and the end of the lunch hour. During the lunch hour, nearly every bench and seatwall was utilized. When a walk-through was done during this time, 139 people were sitting in the space as opposed to the 32 people who were present during an earlier walk-through. Additionally, the interior of the space was utilized much more than the exterior during the lunch hour. At all other times, there were more people located in the exterior portion of the space.
FIGURE 4.2 - Typical Pedestrian Use Patterns in Rittenhouse Square

The northwest corner of Rittenhouse Square has a breeze that blows through it for most of the day. This breeze is not present in any other part of the space. It is probably caused by the arrangement of the buildings and streets bordering that corner of the space. It was in this corner where the families with children tended to gather, and will henceforth be referred to as the “children’s play area” (Illustration 4.1).

All user classes, except school groups, were represented during the observation period in Rittenhouse Square. It was discovered that, as in J.F.K. Plaza, the user class within each of the groups that were observed were the same. For instance, no group contained one casual user and one professional person; the group either contained two professional people or two casual users, not both.
The same method that was used on the J.F.K. Plaza data was applied on data collected in Rittenhouse Square to make proportional total user classes to total user classes utilizing each seating type. As with the J.F.K. Plaza data, this method was applied to all of the user classes and all of the seating types. Subsequently, it could be determined which of the user classes utilized which of the seating types most frequently.

**TABLE 4.10 - Number and percentage of each user classification observed.**

<table>
<thead>
<tr>
<th>USER CLASSIFICATION</th>
<th># OF OBSERVATIONS</th>
<th>PERCENTAGE (%)</th>
<th># OF INDIVIDUAL OBSERVATIONS</th>
<th># OF GROUP OBSERVATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casual Users</td>
<td>27</td>
<td>52.9</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>Professional People</td>
<td>14</td>
<td>27.5</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Families</td>
<td>3</td>
<td>5.9</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Teenagers</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Couples</td>
<td>4</td>
<td>7.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>School Groups</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Street People</td>
<td>2</td>
<td>3.9</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100</td>
<td>37</td>
<td>14</td>
</tr>
</tbody>
</table>

Approximately one-half of the users of Rittenhouse Square were casual users, while approximately one-quarter were professional people. The remainder of the users of the space were couples families, street people and teenagers.

The different seating types that are present in Rittenhouse Square and that were utilized by people during the observations are as follows: individual benches, both with and without backs; walls, including inside corner walls and center walls; center fountain walls; and grass. Grouped benches, outside corner walls, and corner fountain walls, along with railings, statues, stairs, were not used as seating elements during the observation period in Rittenhouse Square.

The following table provides the percentages of observations that used each seating type. Subsequent to this table, more detailed information regarding the seating types that were used most by each of the user classes is presented. For each seating type category the styles of that type of seating that were utilized most are presented as well. In addition, information accrued from the supplementary observations is presented.
### TABLE 4.11 - Percentage of use and user preference of seating types.

<table>
<thead>
<tr>
<th>SEATING TYPE</th>
<th>PERCENTAGE (% OF USE)</th>
<th>USER CLASSIFICATION USED BY (in order of used most to used least)</th>
<th>NOT USED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benches</td>
<td>66</td>
<td>families, teenagers, &amp; street people, couples &amp; professional people, casual users</td>
<td>-----</td>
</tr>
<tr>
<td>Walls</td>
<td>20</td>
<td>professional people, couples, casual users</td>
<td>families, teenagers, street people</td>
</tr>
<tr>
<td>Fountain Walls</td>
<td>4</td>
<td>casual users</td>
<td>all other user classifications</td>
</tr>
<tr>
<td>Grass</td>
<td>10</td>
<td>casual users</td>
<td>all other user classifications</td>
</tr>
</tbody>
</table>

Generally, benches were used by two-thirds of the users observed. Walls were the next most frequently used seating element, followed by grass and then fountain walls.

Families, teenagers and street people use the benches most frequently in Rittenhouse Square. Couples and professional people were the next most frequent users, followed by casual users. Both individual benches with backs and individual benches without backs were used by the same number of people.

Of the three groups who used walls as a seating element, professional people were found to sit on walls more often than couples and casual users. Furthermore, the couples used the walls more often than casual users. Most of the wall users sat on center walls while the remaining sat on inside corner walls.

The fountain wall and grass were used only by members of the casual user class.

The same microclimatic and contextual conditions that were recorded in J.F.K. Plaza were recorded in Rittenhouse Square regarding the locations of the seating types in terms of sun/shade exposure, location in the interior or exterior of the space, adjacency to a path or walkway, whether the area was open or secluded, and whether the seating was located in an area of high or low traffic. In addition to this data, locations of users were recorded in the supplementary observations. An analysis was performed using both of these sources of data.

Just as in the analysis of J.F.K. Plaza, the records were analyzed in order to determine which user class preferred which physical setting. Since it is recognized that all individuals are different in their preferences, this was done simply to provide the reader with insight as to the behaviors that took place during this research.
TABLE 4.12 - User preference for particular microclimatic or contextual conditions.

<table>
<thead>
<tr>
<th>MICROCLIMATIC OR CONTEXTUAL CONDITION</th>
<th>CONDITION</th>
<th>USER CLASSIFICATIONS WHO PREFER THIS CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(in order of preferred most to preferred least)</td>
</tr>
<tr>
<td>Sun/Shade Exposure</td>
<td>Sun</td>
<td>——</td>
</tr>
<tr>
<td></td>
<td>Shade</td>
<td>casual users, professional people, families, teenagers, couples</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>street people</td>
</tr>
<tr>
<td>Interior vs. Exterior</td>
<td>Interior</td>
<td>professional people, couples, teenagers</td>
</tr>
<tr>
<td></td>
<td>Exterior</td>
<td>families, casual users</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>street people</td>
</tr>
<tr>
<td>Path vs. No Path</td>
<td>Path</td>
<td>families</td>
</tr>
<tr>
<td></td>
<td>No Path</td>
<td>professional people, teenagers</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>casual users, couples, street people</td>
</tr>
<tr>
<td>Open vs. Secluded</td>
<td>Open</td>
<td>casual users, families, couples</td>
</tr>
<tr>
<td></td>
<td>Secluded</td>
<td>professional people, teenagers</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>street people</td>
</tr>
<tr>
<td>High Traffic vs. Low Traffic</td>
<td>High Traffic</td>
<td>families, teenagers</td>
</tr>
<tr>
<td></td>
<td>Low Traffic</td>
<td>professional people</td>
</tr>
<tr>
<td></td>
<td>No Preference</td>
<td>casual users, couples, street people</td>
</tr>
</tbody>
</table>

Every group that used Rittenhouse Square except street people preferred to be in the shade instead of the sun. Street people had no preference for shade or sun. It was difficult to determine their use patterns, however, because there were so few of them present in the space.

Professional people, couples and teenagers all seemed to prefer to sit in the interior of the space. Families and casual users, on the other hand, preferred the exterior. Because of the scarce number of street people present in Rittenhouse Square, it was difficult to tell which area they preferred.

Casual users and couples used both seating elements that were adjacent to paths and elements away from paths. Each was used by about the same number of people in those user classes. Professional people and teenagers sat in places that had no path adjacent to them.

Casual users, families and couples tended to sit in areas that were open, while professional people and teenagers tended to sit in more secluded areas. This may be due in part to the high use of wooden benches by casual users, because they are located in the exterior of the space, and they are all adjacent to pathways. Additionally, because of the location of the “children’s play area” at an intersection, the families locate themselves in a very open area. It was speculated that the professional peoples’ preference for a more secluded area might be influenced by their desire to escape the fast-paced world of the office.

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Casual users and couples did not have a preference for either high traffic or low traffic areas, they each used them with about the same frequency. Families and teenagers seemed to prefer high traffic areas, while professional people seemed to prefer low traffic areas.

Section 2: Interview Analysis

A total of 50 interviews were conducted in Rittenhouse Square. As with the J.F.K Plaza interviews, these were done on the last two days of the observation period.

<table>
<thead>
<tr>
<th>USER CLASS</th>
<th>SEX</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional People</td>
<td>Male</td>
<td>&lt; or = 17</td>
</tr>
<tr>
<td>Casual Users</td>
<td>Female</td>
<td>18 to 24</td>
</tr>
<tr>
<td>Teenagers</td>
<td></td>
<td>25 to 50</td>
</tr>
<tr>
<td>Families</td>
<td></td>
<td>&gt; 50</td>
</tr>
<tr>
<td>Couples</td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

The following questions were asked:
- In your opinion, are there enough seating opportunities available in this space?
- If not, then what changes do you think should be made?
- Why did you choose this particular type of seating?

In the following sections, the responses to these questions will be discussed. In all but the first question it was typical for a respondent to give more than one answer to the question asked. In order to acquire more accurate results, all of these responses were recorded. For this reason, the number of responses to question one will be represented as a percentage, while the number of responses to questions two and three will be represented as a number.

**In your opinion, are there enough seating opportunities in this space?**

<table>
<thead>
<tr>
<th>TABLE 4.14 - Responses to question #1.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSWERS GIVEN</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Don’t know</td>
</tr>
<tr>
<td>No, not during the lunch hour</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Generally, only slightly less than half of the respondents believe that there is enough seating available in Rittenhouse Square.

**If not, then what changes do you think should be made?**

This question was asked of all those who responded negatively to question one; 30 of the 50 respondents. Every one of the respondents answers were recorded, and therefore the number of answers is greater than the number of respondents. In addition, the twenty “nothing” responses reflect the opinions of the people who thought that there were enough seating opportunities available in the space. The respondents were allowed to express their own opinions and perceptions when answering this question.

Similar to J.F.K Plaza, the changes that were suggested by the interviewees involved both changes or additions to the seating as well as changes or additions to the design of the space. Those who said that there were enough seating opportunities in the space typically said that nothing needed to be changed. The only person who said that changes needed to be made did not indicate what those changes should be.

**TABLE 4.15 - Responses to question #2.**

<table>
<thead>
<tr>
<th>ANSWERS GIVEN</th>
<th># OF TIMES EACH RESPONSE WAS GIVEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing</td>
<td>20</td>
</tr>
<tr>
<td>More benches during lunch</td>
<td>9</td>
</tr>
<tr>
<td>More seating in general</td>
<td>6</td>
</tr>
<tr>
<td>Cleaner</td>
<td>2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
</tr>
<tr>
<td>More comfortable seating</td>
<td>1</td>
</tr>
<tr>
<td>More benches</td>
<td>1</td>
</tr>
<tr>
<td>Different kinds of seating</td>
<td>4</td>
</tr>
<tr>
<td>Children’s play area</td>
<td>4</td>
</tr>
<tr>
<td>Higher benches</td>
<td>2</td>
</tr>
<tr>
<td>Grouped benches</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
</tr>
</tbody>
</table>

Generally, about one-third of the respondents felt that the seating opportunities available in Rittenhouse Square are adequate; approximately one-third suggested that more seating be placed in the space; and approximately one-third suggested that changes be made in the comfort, location and orientation of the seating.

More specifically, suggestions were made regarding the amount of seating, the type of seating, the style of seating, and the location of seating. Six people suggested that more seating was necessary, but did not specify a particular type of seating. Only one person wanted more benches, while one person wanted more comfortable benches. Nine people stated that more seating, specifically benches, were needed to
accommodate the lunch crowd. There were simply not enough benches to sit on during this time. In Rittenhouse Square, it was suggested that different kinds of seating be installed. Specifically, two of the four who mentioned this said that movable chairs would be a desirable element in the space. Also, it was stated that benches with higher seats and grouped benches would be desired modifications. Higher benches would allow for a better view of the surrounding area while grouped benches would allow groups to sit and talk. It was pointed out that it was difficult to hold a conversation with more than one other person on an individual bench.

**Why did you choose this particular type of seating?**

When this question was asked of the users of Rittenhouse Square, the same types of responses were given as were given in J.F.K. Plaza. That is, although the question that was asked was intended to yield information on the particular types of seating, many of the responses were given in terms of the location of the seating that the subject used.

A number of reasons were given by the interviewees as to why they chose to sit where they did. Some of the reasons were related to microclimatic conditions, while others were dependent upon availability of seating, views to and from the seating, contextual location of seating, or comfort of seating. Another reason given in Rittenhouse Square was the closeness to the “children’s play area.” Just as in J.F.K. Plaza, this seems to suggest that the location of seating may influence seating choice more than the design or type of seating.

**TABLE 4.16 - Responses to question #3.**

<table>
<thead>
<tr>
<th>ANSWERS GIVEN</th>
<th># OF TIMES EACH RESPONSE WAS GIVEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available</td>
<td>4</td>
</tr>
<tr>
<td>All benches full</td>
<td>1</td>
</tr>
<tr>
<td>Shade</td>
<td>12</td>
</tr>
<tr>
<td>Close to entry/exit</td>
<td>5</td>
</tr>
<tr>
<td>Easy to see because waiting for someone</td>
<td>1</td>
</tr>
<tr>
<td>Comfort of bench</td>
<td>2</td>
</tr>
<tr>
<td>See other people (people watch)</td>
<td>9</td>
</tr>
<tr>
<td>No trees above</td>
<td>1</td>
</tr>
<tr>
<td>Clean</td>
<td>3</td>
</tr>
<tr>
<td>Breeze</td>
<td>5</td>
</tr>
<tr>
<td>Children play here</td>
<td>3</td>
</tr>
<tr>
<td>Just like it</td>
<td>2</td>
</tr>
<tr>
<td>Comfort of wall</td>
<td>3</td>
</tr>
<tr>
<td>Bench dedicated to memory of someone</td>
<td>1</td>
</tr>
<tr>
<td>Rest feet on bench</td>
<td>3</td>
</tr>
<tr>
<td>Habit</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
</tr>
</tbody>
</table>
Generally, about half of the respondents were primarily concerned with physical and psychological comfort, while about one-third were concerned with location. The remainder were concerned with various reasons including availability and habit.

More specifically, microclimatic conditions present in Rittenhouse Square include sun exposure, shade, and a breeze at one corner of the space. Twelve of the fifty people interviewed stated that they sat where they did because that place provided shade. The majority of these people were professional people, followed by casual users, and then families and couples. No one interviewed said that sun exposure was a determining factor in where he/she chose to sit. It is speculated that people chose to sit in the shade during the interview period simply because of the high temperatures that occurred during this time. Additionally, the sparse availability of benches and wall space that are located in the sun may be the reason that people did not mention sun exposure as a determining factor in their choice of seating. With regard to wind conditions, five people, three families and two professional people, said that they chose the seating that they were using because of the breeze. It was noticeably cooler in the northwest corner of the space because of the presence of the breeze. One person pointed out that there is no wind or breeze in any other sections of the space, and that this made it uncomfortable to sit in those other areas on the hot, muggy summer days which are typical of the Philadelphia area.

The next most influential factor with regard to seating choice had to do with the views that people had of other areas of the space. Nine of the fifty people said that they sat where they did because they were able to see and watch other people in the space. The majority of these people were either casual users or professional people, and a few were couples. Many of these people watched other people from the wall located in the interior of the space. This interior space is not only higher than the rest of the space, but from atop the wall, one is able to see almost the entire space. In relation to views, one person, a casual user, said that she sat where she did because she was waiting for someone and the place that she had chosen to sit was highly visible from the entrance that her friend would be using.

After climatic conditions and views, availability of seating seemed to dictate where people sat in Rittenhouse Square. Four people, mostly professional people, said that they sat where they did because it was the first available seating that they saw. One, who was a casual user sitting on a wall, said that he sat there because there were no benches available. This was not entirely true, however. Empty benches were available on the other side of the space from where he had entered and seats on benches that were already occupied were available very close by. This person did not venture very far into the space before coming to the conclusion that no benches were available. Additionally, this person did not consider the already occupied benches to be available, even if only one person was sitting on the six foot bench. These behaviors will be discussed in both the implications section and further research section of this document.
Context affected the seating choices of people with regard to the closeness of the seating to an entrance/exit of the space. Five people, four of whom were professional people, stated that they sat where they did for this reason. It was difficult to tell whether these people sat there because of perceived safety, or for other reasons.

In terms of comfort, physical comfort rather than psychological comfort was a factor that determined seating choice. Two people, one a casual user and one a professional person, said that they were sitting on a bench because of the comfort that it afforded them. Both of these people were sitting on wooden benches with backs. Three people, all professional people, said that they were sitting on the wall because it was comfortable. One of these three people, along with two other casual users who were sitting on the wall, mentioned that the opportunity to rest their feet on the benches adjacent to the wall made this seating position comfortable.

Three interviewees, all family groups, stated that they sat where they did because that was the “children’s play area” in the space. This area is located toward the northwest corner of the space. Apparently, this is the place where the family groups meet to let their children play together. This is also the area where the family groups say they want a playground to be constructed.

Habit, cleanliness and simple preference were also given as reasons for choice of seating. Habit was mentioned by three people, two professional people and one casual user. They said that they have been using the space for a long time and fell into a routine of where to sit each day. Two casual users and one professional person chose to sit where they did because those places were perceived to be “clean”. One of these people said that the bench that he chose was clean because there were no trees above it, and therefore it was void of leaves, branches, acorns or bird waste. Two people who were interviewed, both casual users, said that they sat where they did simply because they “like it here.”

Many of the benches in Rittenhouse Square are dedicated to the memory of either a person, couple or family. One person, a professional person, said that he chose the bench that he was sitting on because it was dedicated to a certain person.
CHAPTER 5: DISCUSSION AND CONCLUSIONS

In order to draw conclusions about the availability and use of seating in J.F.K. Plaza and Rittenhouse Square, the analysis for each of these spaces were compared and contrasted. This was done to see what differences and/or similarities exist between the seating use patterns in these two spaces. In Part 1, conclusions will be presented regarding the use patterns in J.F.K. Plaza and Rittenhouse Square specifically. In Part 2, the research questions will be addressed specifically.

PART 1: USE PATTERNS IN J.F.K. PLAZA AND RITTENHOUSE SQUARE

In order to make comparisons between J.F.K. Plaza and Rittenhouse Square, observation conclusions will be presented first, followed by microclimatic and contextual condition conclusions, and interview conclusions.

Section 1: Observation Conclusions

Observations were made during consecutive weekday mornings and lunch time hours during the month of July, 1995. During the observation period, the temperatures ranged form approximately 75 degrees Fahrenheit in the early mornings to approximately 95 degrees Fahrenheit during the lunch time hours. The observation conclusions include information about the number of each user class who used the spaces, the seating types that were most utilized, and which user classes used which seating type or types most frequently in J.F.K. Plaza and Rittenhouse Square.

User Classes

Generally, there was a mix of users in the spaces during the weekday morning and lunch time hours when the observations were made, with casual users and professional people predominating. Families, teenagers and couples used the spaces at much less frequency than casual users and professional people. Street people used J.F.K. Plaza at a much higher frequency than they did Rittenhouse Square.

The fact that the different user classes used the spaces at different frequencies has implications regarding the future design of urban open spaces. These findings stress the importance of determining the potential or current user population of a space. Without the knowledge of who the users of the spaces are, designers may not be able to address the physical and psychological needs of the users, particularly with regard to seating.

Other data that is important to consider when determining the user population is the time that the users spend in the space. This factor was an issue concerning three of the users classes studied: families, teenagers, and street people.
Families were found to be the third most frequent users of J.F.K. Plaza and the fourth most frequent users of Rittenhouse Square. Utilizing the supplementary observations, however, it became obvious that this data was somewhat misleading. Although it seemed as though more families used J.F.K. Plaza, it was found that families would use the space at different times of the day and stay for only a short time. Conversely, in Rittenhouse Square, family groups would enter the space within a short time of one another and remain in the space for a longer duration of time. Therefore, use of Rittenhouse Square by family groups was actually more common than made apparent by the observations done during the observation period. One section of the space, the northwest corner, was used by families throughout the days when the observations were made. This section of the space has been referred to as the “children’s play area.” The families would enter the space in the morning and remain there for several hours.

Teenagers that used the spaces used them for different time durations as well. It became evident through the observations that teenagers used J.F.K. Plaza as a sort of “hangout” where they could gather to socialize and to watch other people, while the teenagers in Rittenhouse Square typically used the space as a place to walk through. Very few teenagers were seen loitering within Rittenhouse Square.

Street people were the least frequent user of both spaces. This data seems accurate for Rittenhouse Square, but somewhat skewed for J.F.K. Plaza. Through the use of supplemental observations it was discovered that there was a considerable number of street people present in J.F.K. Plaza throughout the day. Much like the family groups in Rittenhouse Square, these people would either already be present in the space when the observations began, or would enter the space within a short time of one another and remain there throughout the day.

This information on the time spent in the spaces could be useful to designers with regard to the number and comfort of certain seating types that are either present or needed in the space. For example, since the families in J.F.K. Plaza used the seating in that space for only short durations, this may mean either that the seating wasn’t comfortable and caused them to not stay long, or that it is characteristic of family groups in that particular space to only stay for short durations. Through conducting research using both observations and interviews, it would be possible to determine which of these is the influential factor. This shows that by collecting user input, a potential problem in the design or placement of seating for that particular user group can be addressed and corrected.

The activity or activities of the user groups within a space can also provide important information that could be used by designers to design or renovate urban open spaces. An example of this is provided by the observation of school groups in J.F.K. Plaza.
School groups were observed only in J.F.K. Plaza and were the sixth highest user class observed in that space. It is believed that the two school groups that were observed came from the same school or day care each day because they were observed entering the space from the same direction at about the same time on each of two days. Along with this, the behavior patterns of the groups were the same on both days. They would walk into the space in a single-file line, with one adult at the front and one at the back. They would then sit along the fountain wall, watch the water, and converse for about ten to fifteen minutes before they exited the space in the same manner that they had entered it.

This is important for designers in that it shows them that certain user groups may be using a space for a specific purpose. If this is the case in a space that is being studied, it may be important to determine if the needs of that certain user group are being met. If this is not occurring, then it may be that the space does not provide a place for this type of activity to happen. In the case of the school groups, if there was no place provided that could be used by a large group, it is likely that they would not use the space. This reiterates the importance of determining the current and potential user population when designing seating in urban open spaces.

Designers can learn about the needs and preferences of the user population of urban open spaces through observations and interviews. The use of observation will be addressed in this section, while the use of interviews will be addressed in Section 3 of this chapter. An example of observations revealing important user data is the supplementary observations that were done in J.F.K. Plaza, where it was noticed that one particular group of street people had their own seating type. This group would stow away what appeared to be old office chairs under a wooden stage that was located in the upper level of the space. In the morning, they would pull these chairs out, place them in a position overlooking the interior of the space, and sit in them with their feet up on the high seatwall that separates the interior from the exterior.

This type of information, particularly when it relates to seating, can be helpful to designers because it informs them as to the desires of the user group. It informs designers that this particular user group wants something that is currently not available to them, and that some groups or individuals will do what they can to "modify" a space to meet their needs. In J.F.K. Plaza, perhaps this behavior means that movable chairs would be a welcome addition in the space. Or, more likely, it may mean that movable chairs would attract more street people, possibly not a favorable circumstance.

Therefore, designers can gather information about users of urban open spaces through the use of observations conducted either on the particular space that they are studying, or on spaces that have similar design and context. This user information can then be used to help designers determine which user classes
are using the space and which are not. Consequently, the designer can then determine what aspects of the space must be manipulated or added in order to accommodate the greatest diversity of users.

**Seating Types Most Utilized**

Generally, benches were the most utilized seating element in both spaces, followed by walls. In J.F.K. Plaza, the fountain wall was the next most utilized seating element, followed by stairs. In Rittenhouse Square the grass was the next most utilized seating element, followed by the fountain wall.

Walls were utilized more in J.F.K. Plaza than in Rittenhouse Square. This could be due to the fact that the design of and number of benches and walls in each of these spaces differs considerably. Rittenhouse Square contains many more benches than does J.F.K. Plaza, while J.F.K. Plaza contains more seatwall space than Rittenhouse Square. Also, the benches that are located in J.F.K. Plaza are all constructed of concrete, which makes them less comfortable.

It seems that the findings regarding seating type use in J.F.K. Plaza are consistent with the findings of previous studies. William Whyte (1980), through his studies of urban open spaces, has found that benches are typically the most utilized seating type. Cooper-Marcus and Francis (1990) have found that steps and ledges are a popular seating type in open spaces. Walls, including the fountain wall, and stairs were popular seating elements in J.F.K. Plaza. Although the findings regarding use of benches and walls in Rittenhouse Square are consistent with previous findings, they are not consistent in terms of the popularity of the grass as a seating element. Neither Whyte (1980) nor Cooper-Marcus and Francis (1990) mention grass as a popular seating type. Perhaps they did not consider grass to be a seating element in their studies, or perhaps there was no grass in the spaces that they chose to study.

The benches were not always used in the way that benches are traditionally used; that is, to sit on. In J.F.K. Plaza, the benches that are located near the taller seat walls were often used as "steps." Casual users and teenagers, most typically, would step onto the bench’s seat, then onto the backrest, and then sit on the wall directly above the bench. These people would then rest their feet on the backrest of the bench. Similarly, in Rittenhouse Square, the benches that are located in the interior of the space were often used as footrests by the people sitting on the wall as well. In this space, benches were used as footrests by all user classifications, not just casual users or teenagers.

In J.F.K. Plaza, all of the benches are constructed of concrete. In Rittenhouse Square, all of the benches with backs are constructed of wood, while all of the benches without backs are constructed of concrete. This may be one explanation of why benches were used more frequently in Rittenhouse Square than in J.F.K. Plaza; 66 percent to 49 percent, respectively. As Whyte (1980) has found through his research,
benches that are made out of wood are typically used more because they are more comfortable than those constructed of concrete or some other “hard” material. Therefore, because J.F.K. Plaza does not contain any wood benches, the walls and the benches that are there afford the same amount of comfort, being constructed of the same material.

Walls were the second most frequently used seating element in both of the spaces. It would appear that the height, width and accessibility of walls are factors that affect their use. Many of the walls in J.F.K. Plaza are located in places that are difficult to access without having to cross a mulched planting bed. Additionally, many of the walls vary in height making them difficult to access without having to climb on a bench to reach the top of the wall. Conversely, in Rittenhouse Square, the walls are easily accessible from the interior of the space and are of a height, approximately four feet, that is conducive to sitting and resting ones feet on a bench below. In both spaces, the width of the sitting area on the walls is approximately the same, about one-and-a-half feet, with the exception of the corner walls in Rittenhouse Square. These corner walls are designed such that the top surface area of the wall is wider, thus providing a larger sitting area. With this wider sitting area, a person is able to part from the traditional sitting position, with his/her feet dangling over the side of the wall, and sit in other ways. For example, one person was seen sitting cross-legged with his lunch sitting beside him. Therefore, both he, sitting cross-legged, and his lunch were able to fit on the surface area created by one inside corner of the wall.

The third most utilized seating type in J.F.K. Plaza was the fountain wall, which was the fourth most used in Rittenhouse Square. It was observed that the section of fountain wall that was used most frequently in J.F.K. Plaza is located toward the west side of the space. This may be because the mist from the fountain typically blew toward the southeast corner of the space during the observation period. In general, people did not sit on the damp fountain wall or damp stepped fountain wall.

Stairs and grass were the least most utilized seating type in J.F.K. Plaza and Rittenhouse Square, respectively. Most of the people who used the grass in Rittenhouse Square positioned themselves in a sunny area and looked at the position of the sun in order to determine precisely how they should orient themselves on the grass. Subsequently, nearly every one of the casual users who sat on the grass removed their shoes and rolled up their sleeves, presumably to expose more of themselves to the sun’s rays. Additionally, most of the grass sitters utilized some type of ground cover, such as a blanket or coat, when sitting on the grass.
Seating Type Use

The following table describes which user classes used which seating type most frequently. This table shows only the user class or classes that used that seating element most frequently during the limited hours of observation.

<table>
<thead>
<tr>
<th>SEATING TYPE</th>
<th>USER CLASS: J.F.K. PLAZA</th>
<th>USER CLASS: RITTENHOUSE SQUARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benches</td>
<td>street people</td>
<td>families, teenagers &amp; street people</td>
</tr>
<tr>
<td>Walls</td>
<td>family groups &amp; teenagers</td>
<td>professional people</td>
</tr>
<tr>
<td>Fountain Walls</td>
<td>school groups</td>
<td>casual users</td>
</tr>
<tr>
<td>Stairs</td>
<td>teenagers</td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td></td>
<td>casual users</td>
</tr>
</tbody>
</table>

Generally, there were no observable patterns of preference regarding seating type and/or style among any of the user classes. Even though these two spaces are located in close proximity to one another and the user classes that used both spaces were comparable, there exist many differences in seating use. The only finding that is consistent in the two spaces was that the users of benches were predominantly street people.

Although the data in the table suggests that street people were the most common users of benches, this data can be misleading. Through the use of both the observations and supplemental observations, it was found that street people used benches almost exclusively in both J.F.K. Plaza and Rittenhouse Square. Because of this, it would appear they used most of the benches in the spaces. Or, the contrary, they used only a few of the benches in J.F.K. Plaza, specifically those located in the upper level of the space, and very few of the benches in Rittenhouse Square.

The data also suggests that casual users, who were the most frequent users of both spaces, did not seem to be the primary users of any particular seating type except in Rittenhouse Square, where they used the fountain walls and the grass. It is speculated that this is because casual users are more comfortable in using a variety of seating types within the spaces instead of one specific seating type. Some of the casual users sat on benches, while others sat on walls, fountain walls, or grass.

This same type of data was collected for professional people who only seemed to have a specific preference for walls in Rittenhouse Square. It is speculated that this occurred because, just as the casual users, they typically did not use any one type of seating exclusively, particularly in J.F.K. Plaza.

This lack of preference by casual users and professional people for any one particular seating type may be due in part to the mode of apparel of those users. Typically, casual users wore such things as shorts, jeans,
sport shirts, sweat shirts, and sneakers or loafers. Therefore, they were not restricted by what they were wearing, as were the people studied in Mozingo's (1989) research in San Francisco. In that study it was found that women, who typically wore skirts or dresses, were limited to certain seating types, specifically benches, that accommodated their apparel. The men, who typically wore suits, were able to use all of the seating types available, including benches, steps, walls and fountain walls. This is also probably why professional people did not seem to have a preference for any particular seating type. The majority of them were male and were therefore wearing clothes that did not limit their ability to use various seating types. Through the supplementary observations it was found that those professional people who were female typically sat on benches or on walls that were lower, typically one and one-half to two feet in height. Therefore, the seating patterns in J.F.K. Plaza and Rittenhouse Square regarding seating preferences based on mode of apparel are consistent with the findings of Mozingo (1989) in her study of open spaces in San Francisco.

It seems as though members of the other user classes, excluding couples, each had a specific seating type that they preferred to use, although these preferences differed in the two spaces. Family groups and teenagers preferred to sit on walls in J.F.K. Plaza, while members of these same user classes preferred to sit on benches in Rittenhouse Square. School groups, which were only present in J.F.K. Plaza, used fountain walls exclusively. The stairs in J.F.K. Plaza were used by members of only one user class, teenagers, during the observation period. Grass, although used by five people, was used only by casual users during the observation period. It was discovered through supplementary observations, however, that a few street people used the grass in Rittenhouse Square as well.

The fact that the walls were used most by teenagers and families in J.F.K. Plaza and professional people in Rittenhouse Square may be attributable to the design and configuration of the walls in the two spaces. Teenagers and families, who often dress in more casual attire, as described in the methodology, may be more likely to cross a mulched planting bed or to climb over a bench to reach a wall to sit as is necessary in many cases in J.F.K. Plaza. On the other hand, professional people, who are often dressed in suits or skirts, would probably not do this. They would be more likely to use a wall that was easily accessible, such as those located in Rittenhouse Square. This is supported by Lennard and Lennard (1987) who have found that people have different physical requirements regarding the seating elements that they can or will use. They state that young people, including teenagers and certain members of families, as defined in this research, will typically use a variety of seating types, and seating types that offer them a variety of seating options. In J.F.K. Plaza, the design and configurations of the walls provide the user with more seating position options than do the walls in Rittenhouse Square. In J.F.K. Plaza it is necessary to climb onto a bench to reach some of the high wall seating. In Rittenhouse Square, although it is necessary for some people to step onto a bench seat to be able to reach the wall, this “step” proved to be more convenient than
“climbing” over a bench, as is necessary in J.F.K. Plaza. This theory is supported further by the supplementary observations conducted in J.F.K. Plaza. Where the walls were easily accessible and at a height that is conducive to sitting without climbing on another element to reach them, professional people were very often observed, particularly during the lunch hour. Therefore, the findings of this study once again support previous research done by both Lennard and Lennard (1987) and Mozingo (1989) regarding how certain characteristics affect people’s choices of seating type. Lennard and Lennard (1987) have found that physical characteristics affect seating choice, while Mozingo (1989) has found that mode of apparel affects seating choice.

An exception to the use of accessible seating by professional people occurred in J.F.K. Plaza, however. There are several low planter walls located within a mulched planting bed that were used mostly by professional people. It is possible that, although they had to cross a mulched bed to reach these seats, the professional people saw them as more accessible than the high seatwalls.

In addition to the walls in Rittenhouse Square being more accessible, the height of the walls not only makes them conducive to sitting, but also conducive to use as a table. This may also be a reason that professional people were observed using the walls in Rittenhouse Square most often. They typically used the space during the lunch hour to eat their lunch and the height of the wall allowed them to use it as a place to sit or as a table. For those sitting on the walls, the benches were typically used as foot-rests.

Regarding the use of fountain walls, in J.F.K. Plaza, although a variety of people from different user sat on the fountain wall, school groups were the most frequent and consistent users of this seating type. This is due to the fact that when members of this user class were present in the space, they used the fountain wall exclusively. In Rittenhouse Square, the fountain wall was used only by people who belonged to the casual user class, and then only by very few of them. In fact, one of the primary users on all four days of observation was a large dog which waded through the water while on his walks each day. This lack or use by people may be due to the condition of the water in the fountain itself. During the observation period, the water appeared to be dirty and polluted, making it unpleasant for viewing and/or interaction.

In J.F.K. Plaza, no professional people or street people were seen using the fountain wall. This lack of use by professional people may be due in part to the attire that they wore. It is likely that professional people, who probably had to return to work after visiting the space, did not want to sit near the water to avoid the possibility of being splashed by the fountain. The lack of use by street people may be because the fountain is located in the interior of the space and they occupied the exterior almost exclusively.
Relating these conclusions to the thesis question: Based on the type, location, and position of seating in urban open spaces, do patterns of seating use exist within specific user classes? This study suggests that patterns of use do not exist based on the type and/or style of seating in J.F.K. Plaza and Rittenhouse Square, and therefore seating type and/or style are not the primary factors in determining seating preference.

This is supported by the fact that although both the distribution of the user classes in the two spaces were comparable, and the seating types that are available in both spaces are comparable, the seating preferences of the users of the two spaces differed greatly. The only people who consistently used the same seating in both spaces were street people, who used benches.

Section 2: Microclimatic And Contextual Preference Conclusions
Generally, microclimatic and contextual conditions such as sun/shade exposure, interior vs. exterior location, proximity to a path, open vs. secluded areas, and high traffic vs. low traffic areas had an effect on where people sat within J.F.K. Plaza and Rittenhouse Square. When people were interviewed and asked why they were sitting where they were, they often answered by describing microclimatic or contextual conditions instead of by describing the seating type or style itself.

The following table shows which user classes preferred which particular conditions. The preferred conditions that are consistent in each space are italicized.

<table>
<thead>
<tr>
<th>USER CLASSIFICATION</th>
<th>MICROCLIMATIC AND CONTEXTUAL CONDITION MOST PREFERRED: J.F.K. PLAZA</th>
<th>MICROCLIMATIC AND CONTEXTUAL CONDITION MOST PREFERRED: RITENHOUSE SQUARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casual Users</td>
<td>shade, interior, path, open, high traffic</td>
<td>shade, exterior, open</td>
</tr>
<tr>
<td>Professional People</td>
<td>shade, interior, path, open, high traffic</td>
<td>shade, interior, no path, secluded, low traffic</td>
</tr>
<tr>
<td>Families</td>
<td>no path, secluded, low traffic</td>
<td>shade, exterior, path, open, high traffic</td>
</tr>
<tr>
<td>Couples</td>
<td>sun, interior, path, open, high traffic</td>
<td>shade, interior, open</td>
</tr>
<tr>
<td>Teenagers</td>
<td>shade, interior, path, open, high traffic</td>
<td>shade, interior, no path, secluded, high traffic</td>
</tr>
<tr>
<td>School Groups</td>
<td>sun, interior, path, open, high traffic</td>
<td>-----</td>
</tr>
<tr>
<td>Street People</td>
<td>exterior, path, open, high traffic</td>
<td>no preference for any particular condition</td>
</tr>
</tbody>
</table>
Of the microclimatic and contextual conditions studied, sun/shade exposure proved to be the most significant factor that influenced seating choice. Preference patterns for this factor were evident within the casual user, professional people and teenager user classes. It is unknown whether the preference for sun or shade changed as the day progressed and the temperature rose. Sun/shade exposure data was only recorded at the particular time that the seating element was being used.

The preferences for shade or sun by the different user classes could be attributable to a number of explanations. First, the preference for shade by most of the users could be due to the fact that during the study periods in both J.F.K. Plaza and Rittenhouse Square, the temperature was in the 80 to 90 degree range each day. It is likely that these weather conditions had a great influence on users’ choices of where to sit. And second, Rittenhouse Square, except for on certain areas of lawn, is almost completely shaded due to the large shade trees that are growing in that space. For this reason, users of Rittenhouse Square do not have much of a choice when it comes to sitting in the sun or in the shade. They would either have to sit in the shade or sit on the grass in order to be exposed to the sun.

The use of a sunny area in J.F.K. Plaza by school groups is likely more a function of the location of the seating type rather than a preference for sun. It was observed that people from this user class sat on the fountain wall to be close to, and to watch the fountain, which is located in a sunny area of J.F.K. Plaza. Because they were using the space for the specific purpose of watching the fountain, their choice of seating was most likely dictated by their behavior rather than their preference for sun or shade.

Regarding user preference for interior or exterior areas, in both spaces, professional people, couples and teenagers all preferred to sit in the interior area of the spaces. In addition, casual users and school groups used the interior of J.F.K. Plaza. All other groups preferred the exterior spaces.

Although Gehl (1987) has found that perimeter seating is more popular that interior seating generally because perimeter seating often provides a “back” and view of surrounding areas, it has been found that the seating located in the interiors of J.F.K. Plaza and Rittenhouse Square are more popular. There are several reasons why this may be true. First, the interiors of both spaces are large enough that each has a perimeter section and a interior section of their own. Typically, people would use the perimeter areas of the interior sections of the spaces. Second, the interiors of both spaces have perceived “backs” separating them from the exteriors of the spaces. Both J.F.K. Plaza and Rittenhouse Square have walls around the perimeter of their interior, and both have a planter bed or vegetation separating them from the exterior. And third, particularly in Rittenhouse Square, the interiors are the places where one can receive the best view of surrounding areas and activities due to the heights of the walls in these two spaces. Therefore, although the findings of this study contrast Gehl’s findings in that they show that the interior portions of each space are
typically more popular than the exteriors, they do show that Gehl’s findings hold true when addressing the seating patterns within only the interior of each of the spaces.

More specifically, through the supplementary observations in J.F.K. Plaza, it was noticed that, during the lunch hour the interior of the space was used by a greater number of professional people and at a higher frequency. This may be due in part to the fact that the street people were located in the exterior, upper portion of the space both during the lunch hour and throughout the day. This is supported by information discovered during the interviews. It was found that one professional person based her seating choice location on the avoidance of street people within J.F.K. Plaza. It is possible that the presence of street people in the upper level of the space caused the other user classes to use the interior, lower level of the space, where they would be away from the street people.

In Rittenhouse Square, it is possible that the preference for the exterior of the space by casual users in particular might be related to the comfort of the benches in that section of the space. It has been suggested in studies such as those done by Whyte (1980) that benches with backrests are the most popular seating style and that wooden benches are most preferred because of their level of comfort. In Rittenhouse Square, the wooden benches with backs are located in the exterior of the space, while the concrete benches without backs are located in the interior. For this reason, it is possible that casual users preferred the exterior portion of the space because that is where the wooden benches with backs are located. Because they tended to use the space for a longer duration of time than the professional people, as determined during the observations and supplementary observations, they would be more likely choose to sit on the more comfortable seating elements.

The use of the exterior portion of Rittenhouse Square by families is most likely due to the location of the perceived “children’s play area” in that section of the space. As was indicated through the supplementary observations and interviews, the children’s play area is the part of the space that is used by people with children, to gather and socialize as their children play together. Apparently it is known that this particular location in Rittenhouse Square is reserved for this purpose. People from other user classes did not use the area that I have referred to as the “children’s play area.”

Regarding the preference for seating adjacent to or away from paths, very different results were found in J.F.K. Plaza and Rittenhouse Square. In J.F.K. Plaza, members of the family group user class were the only people who did not prefer to sit adjacent to a path. In Rittenhouse Square, members of the family group user class were the only people that did prefer to sit adjacent to a path. Additionally, in Rittenhouse Square, professional people and teenagers preferred to sit in locations that were away from paths; all other users did not seem to have a particular preference.
In J.F.K. Plaza it is difficult to find seating that is not adjacent to a path. The only seating that was considered not adjacent to a path were the high walls and the low planter walls. The reason that the families in J.F.K. Plaza stay away from paths may be because of the location of the seating that they chose in relation to the paths. Most of the families in J.F.K. Plaza sat along the top of the high seatwalls, in the exterior of the space. Because of this location, they were separated from the path because of the height of the wall.

In Rittenhouse Square, it is possible that professional people and teenagers were found to sit away from paths based on their preference for the interior of the space. The majority of the seating located in the interior of Rittenhouse Square is located away from pathways. Therefore, it may be that professional people and teenagers use the interior of the space because they prefer to sit away from pathways, or it may be that they sit away from pathways because they prefer the interior of the space. Although the cause and effect relationship is unknown, the interview results provide some insight as to which is the more influential factor. It can be speculated that the professional people’s preference to sit away from paths, and therefore away from people, may be a reflection of their need for a change of atmosphere from their busy office atmosphere.

Since the open vs. secluded areas and high traffic vs. low traffic areas are the same as the path vs. no path areas, respectively, in J.F.K. Plaza, members of the same user classes utilized these three categories. Therefore, members of all user classes in J.F.K. Plaza, except families, sat in areas that were open and had a high rate of pedestrian traffic.

As previously mentioned, because of J.F.K. Plaza’s design it is difficult to find a secluded, low traffic area that is not adjacent to a pathway in that space. Because of this, it was difficult to discern which of these microclimatic and contextual conditions the users of this space preferred.

In Rittenhouse Square, casual users, families and couples sat in more open areas, while professional people and teenagers sat in more secluded areas. Again, it is unknown whether the professional people and teenagers preferred the interior of the space or a secluded area, because these sections of Rittenhouse Square overlap.

It was found that families and teenagers in Rittenhouse Square used high traffic areas more, while professional people used low traffic areas. Therefore, although teenagers tended to use the interior of Rittenhouse Square and tended to sit away from paths in secluded areas, they did prefer to sit near high
traffic areas. This means that although the seating that they used was not located directly on a pathway, the teenagers used seating in areas where they could view a lot of people as they walked by.

It is likely that microclimatic and contextual conditions did not have a great influence on the differences that are seen concerning the use of walls by members of the different user classes in J.F.K. Plaza and Rittenhouse Square, with the exception of the low planter walls. In both spaces, the walls, excluding the low planter walls, are the best places to sit to watch the action that takes place. In addition, these walls in both spaces are considered to be semi-secluded, and they have perceived “backs” that provide a sense of security for the users. In J.F.K. Plaza, this back is formed by a ten to twenty foot area of grass and/or mulch that separates the wall from the walkway. Additionally, there is a line of trees, although not growing close together, that help to create a sense of enclosure and barrier from the pathway behind. In Rittenhouse Square, the back is created by a hedge that grows to the exterior side of the wall. This hedge separates the wall from the grassed area beyond, which adds to the perceived back by providing a rather large space between the wall and the pedestrian path. Because of these contextual similarities, it is likely that the design of the walls themselves, rather than the context that they are located in, was the factor that influenced which members of the different user classes used particular seating types in each of the spaces.

In terms of the exception of the low planter walls, it is possible that the professional people who use these walls do so because of some microclimatic and contextual condition, specifically the shade and their relation to the pathway. This may be true because during the observations, it was noticed that professional people would use these low planter walls as a seating element even though there was wall space available elsewhere. This other available wall space was located in sunny areas that were adjacent to pathways, however. Therefore, it is possible that these professional people traded the comfort of the three foot high seatwall located in the sun along a busy pathway for a less comfortable one foot high planter wall located in the shade and away from the path. In this case then, it would seem that the microclimatic and contextual conditions were more influential on choice of seating than the type or style of the seating itself.

*Relating the findings regarding microclimatic and contextual conditions to the thesis question: Based on the type, location, and position of seating in urban open spaces, do patterns of seating use exist within specific user classes?* It is a finding of this research that patterns do exist based on the location of seating in the presence of certain microclimatic and contextual conditions within J.F.K. Plaza and Rittenhouse Square. Consequently, it has been found that microclimatic and contextual conditions may influence choice of seating more than actual seating type and/or style.

This contention is supported through the previous findings concerning preferences for specific seating types and through the interview responses. When people were asked why they chose the particular type of
seating that they did, their responses were given in terms of the location and/or the microclimatic and contextual conditions that existed there, rather than in terms of the type and/or style of the seating itself. Additionally, consistencies between the data collected in both J.F.K. Plaza and Rittenhouse Square were found in the responses that were given regarding what particular microclimatic and contextual conditions were preferred.

- Sun/shade exposure, along with location in the interior or exterior of the space, had the most influence on where people chose to sit. The seating choices of members of three of the user classes were influenced by sun/shade exposure (casual users, professional people, and teenagers), and by whether the seating was located in the interior or exterior of the space (professional people, couples, teenagers) in both of the spaces.
- Whether the seating was located in an open or secluded place influenced the seating choice of both the casual users and the couples in both of the spaces.

Section 3: Interview Conclusions

Interviews were conducted on consecutive weekdays during the month of July 1995. The temperature ranged from approximately 75 degrees Fahrenheit in the mornings to 95 degrees Fahrenheit in the mid-afternoons. The interviews were done to supplement the observations and to find out how the users felt about the seating opportunities in both J.F.K. Plaza and Rittenhouse Square. They were used to better understand why people sat where they did. Through conducting the interviews, it was possible to discover the reasons behind the seating behaviors that took place.

In general, the responses to the first interview question: In your opinion, are there enough seating opportunities available in the [spaces]?, supported the observation findings in that approximately half of the respondents said that there was enough seating, while the other half said that more seating was needed either in general or during the lunch time hours. The availability of seating during the lunch hour seemed to be more of an issue in Rittenhouse Square than in J.F.K. Plaza.

The finding that some people believed that there was not enough seating available during the lunch hour has implications for designers in that it raises a difficult question: Should more seating be placed in a space to accommodate the peak hour (for this research the summer lunch period) crowd? This issue is addressed in the literature review by Geäl (1987) in his discussion of primary and secondary seating. He suggests that instead of adding more primary seating to the space in the form of benches and chairs, designers should incorporate more secondary seating, including such elements as stairways, steps, low walls, and pedestals, into the space. This way, the space does not seem empty during off-peak hours. Perhaps it is the case that not enough secondary seating opportunities are available in the two spaces studies, particularly Rittenhouse Square.
It is interesting to note that the people interviewed in J.F.K. Plaza did not see the need for more benches specifically, just the need for more seating elements, while in Rittenhouse Square benches were specifically mentioned as the seating element that was desired. This phenomena could be due to the comfort of the benches in each space. Perhaps the people using J.F.K. Plaza did not specifically say that the space needed more benches because the benches that are present are concrete and somewhat uncomfortable. The people using Rittenhouse Square, on the other hand, desired more benches because the bench type that is typical to that space is constructed of wood and therefore more comfortable, as suggested by Whyte (1980). This statement is supported by the fact that nine of the people interviewed in J.F.K. Plaza stated that more comfortable benches were needed, while only one person in Rittenhouse made this same assertion.

In response to the second question that was asked was: If [there is not enough seating available], then what changes, if any, do you think should be made? The people using J.F.K. Plaza and Rittenhouse Square desire not only a greater number of seating elements, but more comfortable seating, and more variety in seating in terms of configuration, height and mobility. These findings are consistent with the findings of Whyte, (1980), Cooper-Marcus and Francis (1990), and Lennard and Lennard (1987), in their discussions of successful design of open spaces in relation to seating opportunities.

Cooper-Marcus and Francis (1990) and Whyte (1980) have found that the most popular type of seating is the bench, and that wooden benches with backrests are the most preferred because of their comfort. The fact that the interviewees in Rittenhouse Square suggested that more benches be supplied in that space supports this contention. Currently there are no wooden benches located in J.F.K. Plaza, which may explain why the people interviewed there saw the need for more comfortable benches in that space.

Cooper-Marcus and Francis (1990) have found that people tend to use seating that offers them a greater variety in seating position options. This is supported by the fact that several people in J.F.K. Plaza and Rittenhouse Square suggested that movable chairs and more walls be provided to allow them more choices in terms of seating. Francis (1989) suggests that through the use of movable chairs, open space users are able to better control the environment that they are in. In other words, a user could place the chair in the sun or in the shade, on grass or on a terrace, or a number of different places, according to his or her preferences. This issue of choice is addressed by Lynch and Carr (1965) and Lennard and Lennard (1984) in the literature review as one of the most important values that people hold, which can be addressed in the design of urban open spaces. Variety, and therefore choice, is also addressed by Lennard and Lennard (1987) when they discuss the physical needs of people and how they affect choice of seating. They suggest that the use of level changes, such as walls and steps, can be used to create a better variety of seating in open spaces to accommodate for a diversity of users.
Through looking at the suggestions of the users and referring to previous studies, it seems that both J.F.K. Plaza and Rittenhouse Square lack some key seating elements in terms of type and style. In particular, it seems that J.F.K. Plaza is lacking comfortable seating, while Rittenhouse Square is lacking variety in seating. Regarding J.F.K. Plaza, as Whyte (1980) has found, the most utilized seating type is benches, particularly those that are constructed of wood and have backs. J.F.K. Plaza does not contain any wooden benches, only benches constructed of concrete. Additionally, there are only very few benches located in the interior of J.F.K. Plaza, which may account for the interviewees’ desires for more seating elements within that space. Although Rittenhouse Square contains many benches, it lacks seating variety. The wall that separates the interior form the exterior is of uniform height and has very few corners. Because of this, there are fewer seating position options available to the user. Both Lennard and Lennard (1987) and Cooper-Marcus and Francis (1990) state, changes in level and corners allow for a greater variety in seating and allow for both groups and individuals to use the space.

In addition to the responses given regarding seating types and styles, the respondents also answered this question in terms of aesthetic and maintenance issues that they believed needed to be addressed. In both spaces lack of cleanliness was mentioned as a problem. People believed that the spaces needed to be better maintained. In J.F.K. Plaza, the planting of more flowers and other vegetation was suggested. In Rittenhouse Square, the family groups in particular wanted a children’s play area to be designed within the space.

The third question: Why did you choose this particular type of seating?, was not answered in the way that it was originally intended. When people were asked this question, they answered in terms of microclimatic conditions, availability of seating, views to and from seating, contextual location of seating, comfort of seating, and avoidance of certain elements. Only very few people actually responded by stating something about the type or style of the seating element that they were using. This suggests that the location and orientation of seating, particularly with regard to the presence of certain microclimatic and contextual conditions, may have a greater influence on seating choice than the type and/or style of seating.

Concerning the microclimatic condition of sun/shade exposure, some professional people and most casual users mentioned that they liked to sit in the shade. Other professional people stated that they preferred to sit in the sun. In terms of sitting in the best place to receive a breeze, casual users, professional people, families and teenagers all mentioned that they sat where they did to receive the breeze. In J.F.K. Plaza, the breeze was created by the fountain, whereas in Rittenhouse Square, the breeze in the northwest corner of the space was created by the configuration of the surrounding buildings.
In terms of availability, casual users and professional people appeared to be least choosy about where they sat. Members of these two user classes claimed that they tended to sit in the first available seating rather than search for a particular place to sit. However, in Rittenhouse Square, these comments from professional people are inconsistent with the observations. During the supplementary observations it was evident that there were many benches in the exterior of the space that were unoccupied. Many professional people walked past these benches to find a place to sit in the interior of the space. Therefore, it was not the first available seating that these professional people used, but rather the first available seating in a specific part of the space that they used. They were not so concerned with the type or style of the seating that they chose as much as the location of the seating that they chose.

Professional people seemed to be concerned about their contextual location within in the space, particularly with regard to proximity to an entrance or exit. Only one person who was concerned with this factor was not a professional person. This finding is consistent with the observations made in J.F.K. Plaza, but not with those made in Rittenhouse Square. Although most of the professional people used the interior of J.F.K. Plaza, because of the size of the space the number of entrance/exit paths that penetrate it, some of the areas within the interior could be considered as being close to an entrance/exit path. In Rittenhouse Square, on the other hand, the interior of the space has very few paths that permeate it. In addition, because of the size of the space, no areas of the interior would be considered as being in close proximity to an entrance/exit path. Therefore, although proximity to entrance/exit path was mentioned as being important to the professional people who used Rittenhouse Square, the observations that were made contradict this interview finding.

Both professional people and casual users mentioned physical comfort as a determining factor in their choice of seating. Benches were considered as the most comfortable seating by casual users and some professional people, who also mentioned that the walls were comfortable to sit on. Only one casual user mentioned psychological comfort as being important.

Views of other people were an important seating choice factor to casual users, professional people and couples. In addition, in J.F.K. Plaza views of the water were important in determining where professional people sat. In both spaces, views into the spaces were important for casual users who were waiting to meet someone.

Avoidance of people was an issue only in J.F.K. Plaza. Both casual users and professional people liked to sit away from other people. Additionally, one professional person mentioned that she sat where she did to avoid the street people present in the space.
For families using Rittenhouse Square, the location of the “children’s’ play area” heavily influenced their choice of seating. This was the section of the park where many families were seen socializing and interacting. These people wanted a specific area set aside for their children to play in that would be within, but fenced off from, the rest of the park.

Furthermore, casual users and professional people sometimes sat where they did, mainly on benches and walls, either out of habit or because those places were perceived as being cleaner than others. This latter reason, cleanliness, seemed to be an issue for professional people in particular. Some of the professional people who were interviewed stated that they preferred walls over benches because the benches were “dirty.” The reason that they were perceived as being dirty, they said, was because they were used by the street people to sleep on.

Relating the interview results to the thesis question: Based on the type, location, and position of seating in urban open spaces, do patterns of seating use exist within specific user classes?, it is a finding of this research that patterns exist within specific user classes based on the location and position of seating. It is also a finding of this research that type and style of seating had very little influence on the seating choices of users of J.F.K. Plaza and Rittenhouse Square.

This is supported primarily by the fact that when the interview subjects were asked questions about the seating in the two spaces, their answers typically reflected issues relating to the location and orientation of seating elements, rather than to the type and/or style of the individual seating elements.

PART 2: ADDRESSING THE RESEARCH QUESTION

After conducting this research and analyzing the data collected in both Rittenhouse Square and J.F.K. Plaza, the following research question can be addressed:

- Based on the type, location, and position of seating in urban open spaces, do patterns of seating use exist within specific user classes who use those spaces?

It was found that patterns of seating use exist, based on the location and orientation of seating rather than on the type and style of the seating. There were consistencies in the preferences of the members of the user classes who used J.F.K. Plaza and those who used Rittenhouse Square with regard to the location and orientation of seating elements. Conversely, there were very few consistencies between the preferences of the members of the user classes using the two spaces with regard to seating type or style. It is important to understand, however, that these findings are based on research conducted during a limited and specific time period, specifically early morning through early afternoon on very warm summer weekdays. It is possible
that the perceptions and the preferences of the users may vary at different times of the day or during weekends, and in response to different seasons.

More specifically, this research revealed that there are differences in seating preference by different classes of urban open space users with regard to microclimatic and contextual conditions. Patterns of seating preference were found within the following user classes: casual users, professional people, couples and teenagers. No seating patterns were found within the user classes street people and families. Patterns of use by school groups were not addressed because school groups were only present in J.F.K. Plaza, not in Rittenhouse Square, and therefore comparisons could not be made. These contentions are justified by the following findings that resulted form the study:

- In both J.F.K. Plaza and Rittenhouse Square:
  - professional people preferred shade and interior areas.
  - professional people considered the views from the seating as important.
  - professional people preferred breezy areas.
  - professional people used the first available seating, typically within the interior of the spaces.
  - professional people preferred to sit close to an entrance/exit.
  - casual users preferred shade and open areas.
  - casual users considered the views that they had from the seating as important.
  - couples preferred interior and open areas.
  - teenagers preferred shade, interior and high traffic areas.

Therefore, the highest number of preference patterns were found in the professional people user class who displayed preferences for similar microclimatic and contextual conditions in both of the spaces studied.

Although the corresponding user classes in each space did not agree on their preferences for every microclimatic and contextual condition that was included in the research, there are patterns that exist regarding certain conditions. Table 5.3 shows which conditions affected seating choice the most, and which affected seating choice the least, in regard to the thesis question.
In conclusion, the research suggests that patterns of seating preference do exist within certain user classes, but not others, in both J.F.K. Plaza and Rittenhouse Square. It also suggests that these patterns are based on certain microclimatic and contextual conditions, rather than on seating type and/or style.

These findings are both consistent and inconsistent with the expectations of the research, as stated in the introduction. It was expected that patterns of use and preference would be found within each user class based on the type, location and orientation of the available seating elements in each space. It was found that patterns existed within four of the seven user classes, and that these patterns were based primarily on the location and orientation of the seating, rather than on the type of seating.

These findings have important implications for both landscape architects and urban open space designers. These implications involve issues such as determining the user population and shifting concentration from the design of specific elements to the placement of those elements. In addition, there are implications of using the research methodologies presented in this research. These implications will be discussed in the following chapter.
CHAPTER 6: IMPLICATIONS AND RECOMMENDATIONS

This study has resulted in two primary conclusions. First, it has been shown that preferences for seating are based primarily on the location and orientation of that seating with regard to microclimatic and contextual conditions, rather than on the type and/or style of seating, although type and style of seating should not be discounted altogether. Second, this study has identified one method which can be used to determine patterns of seating use within individual urban open spaces. Both of these conclusions have significant implications for urban open space design, particularly with regard to seating. The implications of the research findings are addressed in Part 1, Section 1. The implications of the research methodology used in this thesis are presented in Part 1, Section 2, along with a critical evaluation of the methodology. Recommendations for conducting research such as that presented in this thesis are addressed in Part 2.

PART 1: IMPLICATIONS

Section 1: Implications of the Research Findings

The implications of these findings for both landscape architects and urban open space designers involve issues such as determining the user population and shifting concentration from the design of specific elements to the placement of those elements. In addition, because some issues related to seating in urban open spaces were mentioned frequently by the research subjects, the findings of this research may have implications for the design of urban open spaces in general.

Determining the User Population

As was discovered in the literature review, designers tend to place seating elements in urban open spaces according to either general guidelines or studies of other urban open spaces without taking into account user needs and preferences. There is a great diversity of people in cities who have a variety of needs and desires. It is important to design for the user populations who will likely utilize the particular space that is being designed.

The findings of this research provide insight as to the seating preferences of members of certain user classes within J.F.K. Plaza and Rittenhouse Square, and possibly other similar urban open spaces. The study has shown that members of some user classes show preferences for particular seating options, especially with regard to the microclimatic and contextual conditions in which they are located. For this reason, it is important that designers know the needs and preferences of the user population for whom they are designing. With this knowledge, they would be more able to address the specific physical and psychological needs and desires of the user population. Meeting their needs could be accomplished through the location and orientation of seating elements, and, to a lesser extent, their design.
Gehl (1987), Lennard and Lennard (1987), and Cooper-Marcus and Francis (1990) have all addressed the implications of the location of seating on preferences of users within open spaces. From both the findings of this study and the findings of previous research, it can be deduced that when designing an open space it is important that the seating elements be arranged and oriented in such ways that different conditions may be experienced by the users. For example, if an open space that is located in a typically hot region contains many benches, all of which are located in the sun, and many seatwalls, all of which are located in the shade, it is likely that, given the microclimatic conditions of the site, the walls will be utilized more than the benches. The opposite may be true in colder climates. This preference for sun or shade may also vary over different seasons and different times of the day. The responses to the third interview question in this research support the theory that microclimatic and contextual conditions have an effect on seating use.

With regard to seating type and style, it is important to include a variety of seating types and styles to accommodate the needs and desires of the user populations as well. As has been shown in this research, people generally do not have preferences for any one particular seating type or style. Because of this, urban open spaces should include different styles of benches, configurations of walls to add variety to the space, grassed areas, seating surrounding water features, or sets of steps with different riser to tread ratios that would be conducive to sitting. Through the inclusion of a variety of seating options, designers could address the needs and preferences of the diverse urban open space user population.

Therefore, combining user preferences for certain microclimatic and contextual conditions with user preferences for certain styles of seating, it is essential that a variety of seating types and styles be made available within a range of microclimatic and contextual conditions. Benches and walls should be available in both sun and in shade, away from action and in the center of attention, in open areas and secluded areas, in the interior of the space and the exterior, and adjacent to paths and away from paths. This way, people have a choice as to the conditions that they would like to experience, as well as the seating type that they would like to use.

**Shifting Concentration - Re-thinking the Order of Importance**

Through a review of the literature, it was discovered that the needs and desires of the user population are typically not being addressed in the design of urban open spaces today. This may be a result of designers concentrating on design issues such as the type and style of a seating element, rather than on issues such as the location and orientation of the seating.

Many times designers place seating in spaces without taking into account the microclimatic and contextual conditions of the site. Additionally, designers often place seating elements in spaces based on aesthetic
qualities such as symmetrical location or visually pleasing arrangements, rather than on their functional aspects with regard to user needs and preferences.

It has been shown through this research that addressing user needs is an important issue when designing urban open spaces. Therefore, designers need to shift their thinking from designing spaces that are purely aesthetically pleasing to designing spaces that address user's needs and desires. This contention is in support of Krupat's (1985) argument regarding the functionalist versus aesthetic approaches to design. He suggests that designs that incorporate both functional and aesthetic approaches better address the needs and desires of the diverse user population. Through studying use patterns and user preferences in urban open spaces, designers can become better informed about how to design spaces that are not only aesthetically pleasing, but also address the needs and desires of the user populations.

General Implications
It is important to understand that the findings that have emerged from this research may not be applicable to other urban open spaces either within the Philadelphia area or within other cities. This is because the user populations of different open spaces may vary considerably from space to space or city to city.

However, a few issues regarding characteristics of seating were raised by several individuals from more than one of the particular user classes, and therefore may be considered to be more generalizable findings.

Many people mentioned that they would like to see taller benches and/or walls built in the spaces so that they could get a better view of their surroundings while using the spaces. In addition, several members of different user classes mentioned that they would like to have places to rest their feet, particularly if they were using walls. This desire was supported by the observations. Many wall users, including casual users, teenagers, and professional people, were seen resting their feet on a bench as they sat on a wall. These were suggestions made by members of several different user classifications and may, therefore, be design issues that could be generalizable to other open spaces besides the two studied in this research.

Section 2: Implications of the Research Methodology
It is hoped that the research method that is presented in this thesis can be used as a model for future research on the use of urban open spaces. It has been shown that in the past, designers often use guidelines or previous studies when designing urban open spaces. Through this research, it has been shown that this may not be the best approach to design. There is a great diversity of people who live and work in the urban environment who have differing needs and desires. In order to address these needs and desires in the realm of urban open spaces, it is important to determine the characteristics of the user populations. The methodologies presented in this study offer one way that designers can gather information about the user
populations of particular urban open spaces. Problems with the use of existing guidelines and previous studies is presented first, followed by a discussion and critical evaluation of the research methods used in this thesis.

**Guidelines and Previous Studies**
By using city-wide generic guidelines to design every open space within that city, designers and planners do not have the opportunity to take any site-specific characteristics into account such as context, user population or microclimate. As shown through this study and previous research, these characteristics have a significant effect on the users of the spaces, as well as on how the spaces are used with regard to seating.

By using information found through research conducted on other open spaces, similar problems may occur. The space may be located in a completely different climate from the one to which the information is being applied. For example, using the findings of a study conducted in southern California would be inappropriate to apply to a space located in Philadelphia, simply because of the differences in climate. Additionally, there may be differences in the context and/or design of the spaces, as well as in the user population of the two cities where the spaces are located. In other words, even if the open spaces seem very similar, they may be very different in ways that are not obvious to the designer. These hidden characteristics, such as user characteristics, can have significant effects on open space use.

Therefore, one must use caution when applying guidelines or the findings of previous studies to the design or renovation of individual urban open spaces. When designing or renovating an urban open space, it is important to determine the characteristics of that individual space and the characteristics of the users of that individual space. In order to obtain this information, studies such as the one presented in this thesis could be conducted and applied to each of those individual spaces.

**Methodology - A Critical Evaluation**
- Evaluation of the Research Methods

In order to conduct a critical evaluation of the research methodologies used in this research, the book *A Practical Guide to Behavioral Research* by Sommer and Sommer was referenced.

When conducting qualitative research, it is important to use triangulation to increase the validity of the results. In this thesis research, researcher, method, and site triangulation were all employed.

It was determined that conducting ethnographic research, which includes both observations and interviews, would be the most appropriate and beneficial way of conducting this thesis research. Observations were used to determine the use patterns in the spaces, while interviews were conducted to determine the needs
and desires of the users of the spaces. In using both observations and interviews, there are both benefits and limitations.

In conducting observations, there are several issues that must be taken into consideration regarding the reliability of the method. These considerations are researcher bias and becoming known to the subjects. In addition, using systematic observation, as was employed in this study, there is a problem with behaviors occurring that may not be included in the pre-arranged categories or scoring system.

Interviews are used to find out how people feel about certain situations. For this study, structured, or standardized, interviews were employed. Structured, or standardized, interviews are those in which the questions are formulated beforehand and asked in a specific order and manner. The limitations of using interviews, and more specifically structured interviews, are the accuracy of the response, human interaction bias, and the limitations of the questions.

Although there are limitations to using both observations and interviews, they can be very effective when researching seating use patterns in urban open spaces. It is essential that the researcher take the limitations into account when conducting the research, and that triangulation of methods, researchers and sites be utilized whenever possible to increase the validity of the study.

- Evaluation of the Research Presented in this Thesis

After completing this study and reviewing the methods, analysis and conclusions chapters, it became clear that several improvements could be made to refine this research. It is the recommendation of the author that these improvements be considered when using this type of research to study use of, and use patterns in, urban open spaces, with regard to seating.

In order to gain more accurate results, the study could be conducted over a longer period of time. Although valuable information was found regarding seating use and the factors that affected seating use over the two week study period, more in-depth information could be gathered if the study period were extended and the number of observations and interviews were increased. In addition to the longer study period, the study could be conducted at different times throughout the year, or continuously throughout the year. This would allow for data to be gathered during different seasons when there are variations in microclimatic conditions, such as temperature and wind. The data collected throughout the seasons could be used to either support or contradict the results of this study. In this study, it was found that microclimatic and contextual conditions, rather than type and style of seating, are likely the more influential factors that affect seating choice. If this is true, then it is likely that people would sit in the sun during the cooler months and in the shade during the hotter months, regardless of the seating type. Through a study that included
observations throughout the seasons, more insight could be provided regarding the factors that influence preferences for seating in urban open spaces.

Regarding the seating elements themselves, the study could include the installation of a broader range of seating elements than were addressed in this study to discover information about their use. By introducing a different type of seating to a site, or by changing the arrangement or location of existing seating elements, valuable information could be gained regarding the use of, and users of, seating in urban open spaces.

Regarding interview questions, the questions could be refined to address issues more specifically. For example, it became clear through the answers given to interview question number three: Why did you choose this particular type of seating?, that people were focusing more on the microclimatic and contextual conditions, rather than on the seating itself, as was originally intended. Because of this, it may have been useful to re-phrase the question to ask; What characteristics of the particular seating element that you are using made you sit here rather than somewhere else?, or Why did you choose to sit on a bench rather than on a wall, stairs or other seating element? These types of questions could have elicited responses specifically referring to the seating. However, through asking the question as it was originally phrased; Why did you choose this particular type of seating?, valuable information was gained regarding what factors urban open space users perceived as important to their choice of seating. That is, they perceived microclimatic and contextual conditions to be more important than the seating type and/or style itself.

If the study period had been extended, it may have been possible to ask both of these questions in order gain more detailed information about user preferences in urban open spaces. Or, follow-up studies could be conducted based on the findings of the research conducted in this thesis.

In summary, this thesis presents one methodology that could be modified and used in future research to provide more specific information about the seating use patterns in individual urban open spaces. Several limitations of this research, and suggestions to improve it, have been listed above. Through the application to individual urban open spaces of the methods presented in this research and the suggested improvements, future studies could reveal important user preference information regarding the use of, use patterns in, and use of seating in, urban open spaces.
PART 2: RECOMMENDATIONS FOR FURTHER STUDY

The research suggests that patterns of seating preference do exist within the certain user classes, but not others, in both J.F.K. Plaza and Rittenhouse Square. It also suggests that these patterns may be based on the presence of certain microclimatic and contextual conditions, rather than on seating type and/or style. Because these findings differed from the expected outcomes, this study acts as an exploration of the factors that affect seating use in urban open spaces.

These findings have implications for landscape architects and urban open space designers in that they suggest that providing a choice of seating options should be a primary goal of designers when designing or redesigning spaces that are intended for use by a diversity of people. The choice should not only be based on the seating type and/or style, but on the location of the seating in the presence of various microclimatic and contextual conditions such as sun and shade, close to paths and away from paths, in the exterior and interior of the space, and so on. Therefore, it is recommended that a variety of seating types, located within a variety of locations with regard to microclimatic and contextual conditions, be supplied in urban open spaces.

Because the research indicates that the location of seating may influence seating choice more than type and/or style of seating, this study should be considered as a pilot study that sets a precedent for studying the effects of the location of the seating, particularly with regard to microclimatic and contextual conditions, on choice of seating by the users of urban open spaces.

Since this study was not designed to look specifically at the effects of the presence of microclimatic and contextual conditions on seating, it is not possible from the results found in this study to determine what specific microclimatic and contextual conditions affect seating use. However, because this study does indicate that seating choice is influenced by the location of seating within certain microclimatic and contextual conditions, it is recommended that further research be done to determine if, in fact, seating patterns exist based on the presence of certain microclimatic and contextual conditions. Additionally, with further research it may be possible to determine what specific microclimatic and contextual conditions affect seating use.

By modifying the research methodologies used in this study to conduct further studies on other open spaces, it may be possible not only to evaluate the success of the seating located in existing urban open spaces, but to determine which specific microclimatic and contextual conditions affect seating choice.
APPENDIX A

In order to determine if qualitative methods were appropriate to conduct this research, Patton’s “Checklist of Evaluation Situations for Which Qualitative Methods are Appropriate” was utilized. Although the checklist refers to “programs” as the entity to be researched and evaluated, the questions are still applicable to the research presented in this thesis. For example, re-wording question 1 to apply to this research: Does the study emphasize individual outcomes, i.e., different participants (user classifications) are expected to be affected qualitatively in different ways? And is there a need or desire to describe and evaluate these individualized participant outcomes? In executing this with the rest of the questions, one can see that each can apply to the research presented in this thesis. Following are the questions that Patton asks in his “checklist” (p. 88-89) and the justifications for their application to this research.

CHECKLIST OF EVALUATION SITUATIONS FOR WHICH QUALITATIVE METHODS ARE APPROPRIATE

1. Does the program emphasize individual outcomes, i.e., different participants are expected to be affected qualitatively in different ways? And is there a need or desire to describe and evaluate these individualized client outcomes?  
   Yes  No

   The participants in this research are the users of the open spaces. Each of the users will be individually evaluated as to their use of the seating in the spaces studied. Therefore there is both a need and desire to evaluate each individual user’s actions.

2. Are decision makers interested in elucidating and understanding the internal dynamics of programs - program strengths, program weaknesses, and overall program processes?  
   Yes  No

   The “program” in this question can refer to the open spaces themselves, and particularly the seating within these spaces. I am interested in the strengths and weaknesses of the seating available in the spaces, and the overall success of the seating that is available.

3. Is detailed, in-depth information needed about certain client cases or program sites, e.g., particularly successful cases; unusual failures; critically important cases for programmatic, financial, or political reasons?  
   Yes  No

   Detailed information is needed as to user classifications and the types and locations of the seating that they use in the spaces.

4. Is there interest on focusing on the diversity among, idiosyncrasies of, and unique qualities exhibited by individual clients or programs (as opposed to comparing all clients or programs on standardized, uniform measures)?  
   Yes  No
There is a great interest in studying the diversity of users of urban open spaces as well as the diversity of seating types that are available to those users. It is one of the goals of this research to determine which user classifications utilize which type of seating.

5. Is information needed about the details of program implementation - what clients in the program experience, what services are provided to clients, how the program is organized, what staff do, and basically inform decision makers as to what is going on in the program and how it was developed? Yes No

In this question, the words clients, program and services can be replaced with user classifications, open space and seating, respectively. Information is needed about what the users experience in terms of seating, what seating is available to the users, and how that seating is organized within the spaces in terms of location and orientation.

6. Are program staff and other decision makers interested in the collection of detailed, descriptive information about the program for the purpose of improving the program, i.e., is there interest in formative evaluation? Yes No

It is my hope that decision makers, i.e. urban open space planners and landscape architects, use the information that results from this study to address seating related issues in both existing open spaces and new open spaces in order to accommodate the users more appropriately.

7. Is there a need for information about the nuances of program quality, i.e., descriptive information about the quality of the program activities and outcomes, not just levels, amounts, or quantities of program activity and outcomes? Yes No

There is a need for this research to be descriptive in that both people classifications and seating amenities must be described according to their individual characteristics. It is a goal of this research to determine which users utilize which seating types. Without being descriptive about each individual user classification or seating type, this research would be impossible.

8. Will the administration of standardized measuring instruments (questionnaires and tests) be overly obtrusive in contrast to the gathering of data through natural observation and open-ended interviews, i.e., will the collection of qualitative data generate less reactivity among participants that the collection of quantitative data? Yes No

In this research it is important to see how people act in their daily routines. It is also important to understand why these people act as they do. Through the use of natural observation and open-ended interviews both of these goals can be accomplished.

9. Is the state of measurement science such that no valid, reliable, and believable standardized instrument is available or readily capable of being developed to measure the particular program outcomes for which data are needed? Yes No
For this particular research, descriptive techniques are necessary to answer the specific questions about the use of seating by urban open space users. Therefore using standardized methods would not be appropriate.

10. Are legislators or other decision makers/funders interested in having evaluators conduct program site visits such that the evaluators become the surrogate eyes and ears for decision makers who are too busy to make such site visits themselves and who lack the observing and listening skills of the trained evaluators?  
Yes  No

It is my hope that the findings of this research impel decision makers to conduct further research on urban open spaces to determine the success or failure of the seating amenities that are available in those spaces. To do this it would be necessary to employ evaluators such as landscape architects or planners to conduct such research and accurately report the results.

11. Are the goals of the program vague, general, nonspecific, indicating the possible advantage of a goal-free evaluation approach to gather information about what effects the program is actually having?  
Yes  No

Since this research is being done in order to determine which users classifications use what type of seating in urban open spaces, it may be appropriate to say that the goals of the research are general. Specific information about use of seating will result only after the research has been conducted.

12. Is there a possibility that the program may be affecting clients or participants in unanticipated ways and/or having unexpected side effects, indicating the need for a method of inquiry that can discover effects beyond those formally stated as desirable by program staff (again, an indication of the need for some form of goal-free evaluation)?  
Yes  No

It is possible that unanticipated behaviors and use of seating elements may occur in urban open spaces. It is important to determine what these behaviors and uses are in order to accurately describe how different user classifications use different seating types.

13. Has the collection of quantitative data become so routine that no one pays attention to the results anymore, suggesting a possible need to break the old routine and use new methods to generate new insights about the program?  
Yes  No

New insights are needed to determine the types of users that utilize seating in urban open spaces. Simply recording the numbers of people that use certain seating elements does not provide enough insight as to what types of seating are appropriate in certain contexts.

14. Is there a need or desire to personalize the evaluation process by using research methods that require personal, face-to-face contact with the program - methods that may be perceived as “humanistic” and personal because participants are not preordinately labeled and numbered, and methods that feel natural, informal, and understandable to participants?  
Yes  No
In order to gain deeper insight as to why certain users utilize certain seating types it is important to ask those users questions about the particular seating.

15. Do decision makers and information users have philosophical or methodological biases that lead them to prefer qualitative methods, thus increasing the likelihood that they will find the results of a qualitative evaluation particularly believable, credible, understandable, and useful? Yes No

It is unknown whether the decision makers prefer qualitative methods. However, it is believed that qualitative methods are necessary in order for decision makers to understand and be able to use the information that will result from this research.

16. Are decision makers and evaluators interested in increasing their understanding of the program by developing a grounded theory of program actions and effects that is inductively derived from a holistic picture of the program? Yes No

It is hoped that the decision makers, such as planners and landscape architects, would want to develop some type of guidelines based on the findings of research such as that which is presented here to improve or create more useable, successful open spaces.

After applying Patton’s “checklist” to this research and subsequently answering each question, it became apparent that qualitative research and evaluation methods were appropriate for conducting and evaluating this research.
APPENDIX B

The following pages contain the data sheets used to record data during the observation phase of the study. The demographic information, such as race and age, were determined by each researcher based on physical characteristics of the subjects and their own personal experiences. They may not reflect the actual user population, but were recorded to get an approximation of the characteristics of the user population of the spaces that were studied.
DEMographics SHEET AND ACTIVITIES CHART

TIME

WEATHER

SUN  PARTLY  CLOUDY  OVERCAST  DRIZZLE  RAIN  THUNDER  OTHER  STORM

TEMPERATURE

AMOUNT OF PEOPLE

GENDER

RACE

APPROXIMATE AGE GROUP
< or =17  18-24  25-50  >50

ACTIVITIES
## USER CLASSIFICATIONS

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<th>SEATING TYPES</th>
<th>PROFESSIONAL PEOPLE</th>
<th>FAMILIES</th>
<th>COUPLES</th>
<th>SCHOOL GROUPS</th>
<th>CASUAL</th>
<th>&quot;STREET PEOPLE&quot;</th>
<th>TEENAGERS</th>
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- WALLS
  - CORNER
  1. INSIDE
  2. OUTSIDE
  - CENTER

- FOUNTAIN WALL
  - CORNER
  1. INSIDE
  2. OUTSIDE
  - CENTER

- BENCHES
  - W/ BACK
  - NO BACK
  - INDIVIDUAL
  - GROUPED

- GRASS
- STAIRS
- STATUE
- CEMENT
- RAILING
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</table>
APPENDIX C

The researcher would approach the person to be interviewed and make one of the following statements:

MYSELF: Hello, I am a Landscape Architecture graduate student and I am doing a study of seating in urban open spaces for my thesis. Could I ask you a few questions regarding your opinions of the seating in this park/plaza?

OTHER RESEARCHERS: Hello, my sister/daughter is a Landscape Architecture graduate student who is doing a study of seating in urban open spaces for her thesis. Could I ask you a few questions regarding your opinions of the seating in this park/plaza?

The researcher would then ask the questions listed below, in the order that they are presented.

INTERVIEW QUESTIONNAIRE

- In your opinion, are there enough seating opportunities available in this plaza/park?  YES  NO
  If NO: What would you like to see changed in the plaza/park?

- Why did you choose this particular seating type that you are using instead of one of the others?

After asking the interview questions, the researcher completed the interview data sheet by recording the following information. The determination of this information was based on assumptions made by the researchers based on physical evidence as well as each researcher’s personal experiences.

- Age Group:  < or =17  18-24  25-50  >50
- Sex:  Male  Female
- Person Type:  Professional Person  School Group
               Family  Casual User
               Couple  Street People
               Teenagers
INTERVIEW QUESTIONNAIRE

- In your opinion, are there enough seating opportunities available in this plaza/park? YES NO
  If NO: What would you like to see changed in the plaza/park?

- Why did you choose this particular seating type that you are using instead of one of the others?

- Age Group: < or =17 18-24 25-50 >50

- Sex: Male Female

- Person Type: Professional Person School Group
  Family Casual User
  Couple Street People
  Teenagers
### APPENDIX D

The following table presents the coding system used to analyze the interview information.

<table>
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**Question 1 - Part 1**

In your opinion, are there enough seating opportunities available in this plaza/park?

| 1 | 25 | Nothing | 1 | 18 | Nothing |
| 2 | 2 | More benches during lunch | 2 | 9 | More benches during lunch |
| 3 | 10 | More seating in general | 3 | 6 | More seating in general |
| 4 | 1 | Cleaner | 4 | 2 | Cleaner |
| 5 | 4 | More benches with backs | 6 | 1 | Don’t know |
| 6 | 3 | Don’t know | 7 | 1 | More comfortable seating |
| 7 | 5 | More comfortable seating | 10 | 1 | More benches |
| 8 | 1 | More walls | 11 | 4 | Different kinds of seating |
| 9 | 2 | More seating in the shade | 12 | 4 | Children’s play area |
| 10 | 3 | Comfort of bench | 13 | 2 | Higher benches |
| 14 | 1 | Grouped benches |

**Question 1 - Part 2**

What would you like to see changed in the plaza/park?

| 1 | 9 | Available | 1 | 4 | Available |
| 2 | 4 | All benches full | 2 | 1 | All benches full |
| 3 | 18 | Shade | 3 | 12 | Shade |
| 4 | 5 | Breeze from fountain | 5 | 5 | Close to entry/exit |
| 5 | 1 | Close to entry/exit | 7 | 1 | Easy to see because waiting for someone |
| 6 | 3 | Watch water | 10 | 2 | Comfort of bench |
| 7 | 1 | Easy to see because waiting for someone | 15 | 9 | See other people (people watch) |
| 8 | 1 | Has back (the seating does) | 17 | 1 | No trees above |
| 9 | 2 | Private/away from people | 18 | 3 | Clean |
| 10 | 3 | Comfort of bench | 19 | 5 | Breeze |
| 11 | 1 | Away from street people | 20 | 3 | Children play here |
| 12 | 1 | Near grass | 21 | 2 | Just like it |
| 13 | 5 | Sun | 22 | 3 | Comfort of wall |
| 14 | 2 | Away from fountain spray | 23 | 1 | Bench dedicated to memory of someone |
| 15 | 3 | See other people (people watch) | 24 | 3 | Rest feet on bench |
| 16 | 1 | Back protection | 25 | 3 | Habit |

**Question 2**

Why did you choose this particular seating type that you are using instead of one of the others?
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C# = Coding number  
#P = Number of people who responded with that answer
APPENDIX E

Since age seemed to be a typical method of classification, it was the first criterion employed to devise the user classifications for this research. Due to the fact that the observer had no way of knowing the exact ages of those being observed, prior knowledge and experience was used to determine approximate ages of the observation subjects.

It was found that people of all ages utilized both spaces. Young people, more specifically, children, did not use either site by themselves; they were always accompanied by an adult or adults. In addition, occasionally a group of children, typically eight or more, of around the same age used the spaces accompanied by an adult. Because they were always in groups, it was unnecessary to create a separate category for children because they would not be observed as individuals. Teenagers, on the other hand, were typically found to use both spaces as individuals or as groups comprised of all teenagers. For this reason, teenagers could be observed as individuals. Additionally, it was found that adults used the spaces with great frequency both as individuals and groups. This group could also be observed as individuals.

From these observations based on age, three groups emerged: groups of children accompanied by an adult or adults, teenagers and adults. Using just these three categories to conduct the research, however, would not be sufficient. These three categories were too broad and needed to be made more specific. Drawing from the literature, it was decided that the behaviors of the users should also be observed.

Behaviors in each space did not vary greatly. Many of the people who visited J.F.K. Plaza and Rittenhouse Square used the space for one of the following activities: eating or drinking; smoking a cigarette; reading a book, magazine or newspaper; talking with other people; watching people; resting, relaxing or simply “hanging out”; or passing through. Some people were talking intimately with their arms around each other or holding hands. Typically these people did not participate in any other behavior. In J.F.K. Plaza, several people were seen wading in the fountain, something that was not typical in Rittenhouse Square, probably due to the condition of the water.

Relating these activities to age, it was noticed that groups of children accompanied by adults either were “hanging out” or just passing through. The teenagers were usually smoking cigarettes, talking with other teenagers, watching people, “hanging out” or wading in the fountain. No teenagers were seen in intimate situations. The adult users were found to participate in all of the activities. Adults with young children, however, typically were found eating, talking, “hanging out”, passing through, or wading in the fountain.
Therefore, through classifying users by age and behavior, five categories were formed: groups of children accompanied by adults, teenagers, adults in intimate situations, adults with children, and other adults (those not in intimate situations or with children).

As the observations continued, it became evident that there were other differences in the users of the spaces that were not based on age and behavior, but rather on mode of apparel. Some of the users were very casually dressed, wearing shorts, jeans or cotton pants and T-shirts or other shirts. Others were dressed in suits and ties or skirts and high heels; clothing that could be described as business attire. Still others were dressed in clothes that were dirty and torn; something that, through my experience, is typical of what a street person might wear.

Relating mode of dress to both age and behavior, it was found that more distinct categories could be formed. Typically, the groups of children who were accompanied by and adult(s), the teenagers, and the adults with children all dressed casually. Adults in intimate situations were dressed either casually or in business attire. Other adults were dressed either casually, in business attire, or in dirty and torn clothes.

Consequently, by categorizing users according to age, behavior and mode of apparel, the adult category could be further defined. These adult categories were: adults in intimate situations, casual adults, business adults and street adults.


VITA

Jennifer Ann Devlin was born in Westwood, New Jersey on February 7, 1970. In 1976, she moved with her family to Northfield, New Jersey. She graduated from Mainland Regional High School in 1988 and subsequently attended the University of Massachusetts at Amherst, where she received a softball scholarship. In December of 1992, she graduated from UMASS with a Bachelor of Sociology degree with a concentration in criminal justice.

Throughout her life, she traveled extensively throughout the country with her family in their camper. It was this exposure to a variety of landscapes which fostered her interest in nature and the outdoors. The combination of her interest in nature and the outdoors, with her interest in architecture, influenced her decision to pursue an education in landscape architecture. In August of 1993, she enrolled in the Landscape Architecture master’s degree program at Virginia Polytechnic Institute and State University. In May 1996, she received her Master’s degree in Landscape Architecture.

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