Designing for Teen Open Space Needs: A Study of Adult and Teenager Perceptions in
Roanoke Virginia

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ABSTRACT

The design of public open spaces frequently does not address the physical and psychological needs of their users with regard to their ages. This research gathered and restated the needs and preferences of teenagers, as an understudied group, in public open spaces, with an emphasis on neighborhood parks. Utilizing a neighborhood park in Roanoke, Virginia, the study developed findings that can influence the design of public open spaces, with the goals of providing social and physical benefits of neighborhood parks for teenagers.

This research was conducted through two phases of interviews. The first phase of interviews took place with professionals who had experience in working with teenagers. The data collected in the first phase of interviews with adults were utilized for the second phase of interviews, which were with teenagers. Experimental models of the study site were created for the second phase to assist the interviewees in visualizing the various designs. In the second phase, the design options were presented to the teenaged study group in response to teenagers' characteristics and needs as determined by the outcomes of the first phase of interviews. The teenagers were asked to state their preferences among the design options. The different options for designing neighborhood parks utilized a neighborhood park in Roanoke, Virginia, as a study site.

The findings of this research suggest that teenagers prefer to utilize spaces closer to the front of the park, by its edges, entrances, and exits, and the parking lot. These findings suggest that there may be no need to design specific spaces dedicated for teenagers in public spaces; however teenager's preferences should be considered in the design process of public spaces. Based on the findings of this research and the suggested relationships among the design attributes of neighborhood parks and teenagers' use of space, this research suggests that providing public spaces is linked with increased opportunities for the social development of teenagers. The primary implications of the findings of this research could help inform landscape architects and urban planners in their designs of future public open spaces that address the needs of teenagers.

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Chapter 1: Introduction

The concept of "design for teenagers" creates a dichotomy for designers. Teenagers need privacy in public spaces, while they still need to negotiate with other age groups for their social development. Teenagers are not fully dependent on their parents, but also not mature enough to be fully independent. Therefore, this group is often overlooked when designing public spaces, as these spaces are often made to accommodate either adults or children.

Public spaces have a significant role in the social development of teenagers. Through public open spaces they interact with their peers and other people. They need to spend time away from school and home. Public spaces are one of the best places for teenagers for interacting with their peers and other age groups. These days, reduction of the opportunities for social interactions and a weakening of interactions among the residents of neighborhoods can impact the social development of teenagers. Statistics show that modern technology has created a new life-style, making the current generation of teenagers connected to online life. Yet their social and physical development necessitate a need to be outside of their homes, in society, and interacting in public places (U.S. Department of Health and Human Services, 2003).

People in the outdoor environment have physical needs and psychological needs. The needs and preferences of different age groups differ. Psychological needs include the need for security, clarity, privacy, social interaction, and identity (Krupat, 1985). A public open space that effectively satisfies these needs is a space that, in addition to responding to physical needs of users, responds to psychological needs as well.

Many scholars have stated the need of privacy for teenagers in public open spaces (Lieberg, 1995; Marcus & Francis, 1998; Owens, 2002). Privacy is a strong need of this age group, but at the same time they need to negotiate with other age groups.

The purpose of this research is to answer the following questions: what are the aspects of public open spaces that could enhance the social development of teenagers? And what is the level of required privacy for this age group?

The objective of this research is to show that teenagers have different needs, and landscape designers or planners in the future should pay more attention to these needs in order to provide proper spaces for this age group. The notion that a well-designed and planned public open space in a neighborhood will offer a more livable environment to residents and, in particular the teenage group, is the basis of this research.

As previously mentioned, the definition of public space is not limited to its physical condition, but also includes some cultural, social and economic values. As Rowe states, "Public spaces belong to everybody and yet to nobody in particular. Public place making cannot occur successfully without a propitious conjunction of local opportunity, community wherewithal, and design capability" (Rowe, 1999, p. 35).

Given the importance of the role of public spaces in the physical and social development of teenagers, these spaces can be designed to provide teenagers with ways to be present and interact with others in those spaces. The social and spatial needs of teenagers should be studied and understood more profoundly.

Landscape designers should create spaces that respond to the teenage group's needs and assist in their social and personal development. To achieve this goal, the designer is required to be knowledgeable about teenagers as the users of the design: to know about their needs, their development and the relationships that they create with their surrounding environments. In fact, if we define design as a creative process in response to a wide range of human needs and landscape as part of the environment in which the activity and interactions occur, and take into account the growth and social development of the teenage group, three main concepts are needed for effective design: needs, activities and development.

Public open spaces in this research have been defined as outdoor spaces which are publicly accessible and used by all groups of people, including teenagers. To better understand this issue of teenagers and public space, the research will look at the public spaces in neighborhood parks particularly.

Teenagers are transitioning from childhood to adulthood, and it is very difficult to define the boundary between those age groups. Due to this transition, the way they behave in public spaces and what they expect from a public space is different from children and adults. There is the thought that teenagers do not have defined spaces for themselves, and therefore, they rely on public spaces more than any other users (Skelton & Valentine, 1997).

As discovered through reading the literature for designing public spaces, there is a big gap in designing public open spaces for teenagers. Usually designers put teenagers (ages 12 – 17) somewhere in the category between children and the elderly, and most of the time designers don't prioritize their needs. This lack of consideration is the primary reason for conducting this research.

The importance of public spaces in low-income neighborhoods is even more pronounced for teenagers, since their families may not be able to support them well by taking them places, or planning for their spare time as much as is needed. Therefore there is a need to allocate and design appropriate areas for this age category.

Much research has been done by sociologists on the characteristics of teenagers and their social issues. This research relies on these studies, and it will try to implement the outcomes of these studies in the planning of public spaces specifically for teenagers. The term "teenager" in this research means those who are between the ages of 12 to 17, and assumes they would still be in middle school or high school. Another assumption in this research is that stages of growth and development among teenagers are reflective of environmental attachments and connections in the community.

Throughout this research the teenager's needs in public open spaces will be identified, specifying what they do and what they expect from public open spaces. In addition, it is possible that the methods used to conduct this research could be modified and applied to the study of other public open spaces, so that landscape architects and urban planners could use the results of this research as guidelines to improve existing public spaces and to design future public open spaces.

Clearly, it is not the intention of this thesis to reflect all possible needs of different teenagers with various cultural backgrounds from all around the world; however, to better recognize these needs, a case study will be provided in this research that mainly focuses on a small group of teenagers in a low income neighborhood in the United States.

This thesis utilizes a current literature review, and also data collected through interviews, using Horton Park, in Roanoke, Virginia, as a case-study of a neighborhood park in a low income area.

This thesis is organized in five chapters. Each chapter addresses a phase of the research. This chapter, Chapter 1, explains the reason for conducting this research and includes the major goals and objectives of the study. The thesis questions are stated as well.

Chapter 2 reviews related 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, and Chapter 4 is an analysis of the data collected for the research, and explains the findings of the research as they affect the main goals and objectives of the research.

Chapter 5 provides information regarding the implications of this research for the design of public 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 public open spaces.

Chapter 2: Literature Review

This literature review provides a summary of relevant research regarding teenagers' needs in public open spaces, and identifies current issues, methods and findings related to the topic. When designing open spaces for different users, it is important to categorize the needs and preferences of those people who use the space and take them into consideration in the designs.

Part one discusses the benefits and qualities of public open spaces in general that satisfy individual users' needs. Then it discusses more about public spaces in neighborhood areas, and finally, it focuses on the neighborhood park. Part two, explains the issues related in particular to the age group of teenagers. These issues include the importance of age, gender, family, friends, school and new technology in using public spaces.

Part three combines parts one and two, and address teenagers' needs in public open spaces. This chapter examines what teenagers need from public spaces that satisfy them. Later in part four, some case studies are included that concern research about teenagers and their local environments and, discusses the methodology and their findings.

Part 1: The benefits and qualities of public open space

Section 1: Definition of public open space

Open space offers a variety of benefits to citizens of a community outside of the benefits provided for private landowners. Because of the rapid growth of urbanism, any open spaces in cities can offer relief from the overcrowding and tension that is often found in the urban environment. Investigations of public open spaces bring together extensive research and practical experience to provide opportunities and benefits of different types of open spaces to society and individuals.

This study has been framed by the very simple question: "what is open space?" It might seem very easy to answer this question, but as Woolley has indicated in her book *Urban Open Space,*

it is not the case. In this section, different definitions of open space have been collected from a variety of scholars and authors.

There is a very comprehensive summary, by Woolley, of definitions of open space by different scholars. "Open space can be defined as land and water in an urban area that is not covered by cars or buildings, or as any undeveloped land in an urban area (Gold, 1980). On the other hand, Tankel (1963) has suggested that open space is not only the land, or the water on the land in and around urban areas, which is not covered by buildings, but is also the space and the light above the land. Cranz (1982) argued that open spaces are wide-open areas that can be fluid to the extent that the city can flow into the park and the park can flow into the city." (Woolley, 2003, p. 3)

Carmona et al, in the book *Public Places Urban Spaces* explains, "Public open space offers recreational opportunities, wildlife habitats, venues for special events, and the opportunity for the city to breathe" (Carmona, 2003, p. 134). Carmona et al, mention that the need for open spaces in high density urban areas is more tangible and is a key focus for urban public life. In the book *Public Places Urban Spaces,* the authors mentioned that in North America, observations show that the fact of privatization of life has created more necessity for public spaces.

Jan Gehl also describes open space as an arena that allows different types of activities, encompassing necessary, optional and social activities (Gehl, 2008). Open space is defined in the article by Gensler and ULI as an undeveloped land or water area that is publicly or privately owned. Open space has various definitions based on the context and its setting. In large-size cities, a vacant lot or a small swamp can be open space. A small park or a narrow corridor for walking or bicycling can come under the category of open space, as well (ULI, 2011).

All the definitions can identify public open spaces, but for the purpose of this research, public open space is defined as outdoor space in neighborhood areas, such as neighborhood parks, and streets and alleys where different types of social interactions and social and physical activities take place. These spaces are publicly owned and managed and are accessible to the public.

Section 2: Values and benefits of public open space

"The public realm affects our humanity and our enjoyment of life. The totality of civic space is what matters, not just a few good buildings. Everyone should be able to enjoy public open space. It should be simple in concept, so it can be used by everyone in different ways. One of the responsibilities of developers is that we must remember that cities should be a series of places. Creating and maintaining good open spaces can help to generate civic pride"
– *Sir Stuart Lipton, Deputy Chairman, Chelsfield Partners* (ULI, 2011, p. 11).

Gehl in his book *Life Between Buildings* discusses the physical environment and how physical environments can affect the outdoor activities of people. Gehl divides outdoor activities into three categories:

- Necessary activities: Such activities that are part of our ordinary life and are mandatory like going to school, work and shopping.
- Optional activities: These activities include taking a walk for enjoyment or for exercising, or other optional activities.
- Social activities: Social activities mean when people are present in public places and socialize with each other, such as when children play with each other or when older people have conversations.

Social activities occur in public places that are accessible by the public (Gehl, 2008). Gehl believes that open spaces are important because there is a need for contact for humans. He believes these spaces give opportunities for people of a community to interact with each other and experience social activities. In terms of contact, Gehl defines high intensity and low intensity for evaluation of types of contacts. High intensity contacts include those with close friends and acquaintances, and low intensity contacts are chance contacts and passive contacts (see and hear contacts).

Gehl illustrates these opportunities through observing how children start playing with each other in public places. These spaces create valuable opportunities for a community to start socializing in a simple way. In *Public Places Urban Spaces*, Carmona et al, mention the same issue: how the built environment can affect the social activity of people. We can be inspired by seeing each

other in everyday life. Children are again a prime example of how public open spaces aid in social interactions. When children see other children, they try to join them and get ideas for new games and play.

Based on Gehl's idea about creating space, we should find ways that we can attract people to spaces, because the presence of people makes public spaces livable. Public open spaces are special areas for different age groups or for different ethnic or cultural groups. Land has a significant value in successful metropolitan areas, and understanding the real value of open space is key to providing adequate and necessary open spaces (ULI, 2011).

Section 3: Types of activities in public open space

Open spaces provide a community with a place for activities, where individuals can just walk, play or enjoy the landscape while at the same time reap the benefits of improved mental and physical health. Public open spaces also bring in some apparent benefits and opportunities in the form of socializing, providing the community with a space to have events, or just to socialize in groups. Outdoor activities in public open spaces can bring considerable health benefits for people, both mentally and physically (Woolley, 2003).

An alternative form of active recreation, which often makes use of open spaces, has developed in recent years and is worthy of mention. Urban outdoor activities can provide opportunities for different age group of people to develop feelings of well-being, self-confidence, relaxation and independence (Sainsbury, 1987). The increasing use of open space as an opportunity for education can be seen in many examples.

The primary usage of public open spaces can be misunderstood, in general. It is a common perception that public open spaces are mainly used for active activities – such as football and soccer. However, there is strong evidence suggesting that passive activities are the most common activities being undertaken in public open spaces. Passive activities can range from watching children at play, enjoying wildlife, reading books, or meeting or socializing with friends. This

research focuses more on the passive activities in public open spaces, with emphasis on teenagers' passive activities.

The strong correlation between performing passive activities and good mental health can be enhanced by developing more public open spaces. Opportunities for rest and relaxation will bring a lot of health benefits to the users of public open spaces.

Most active activities such as football, basketball, soccer and tennis require the formation of groups to gain these benefits. This could be seen as restricting the benefits of these activities to groups only and also downplaying the importance of passive activities and their benefits to individuals. In recent years, urban outdoor activities have gained popularity as a form of active recreation that makes use of public open spaces. These new forms of recreational activities provide the young and old with opportunities to gain self-confidence, independence, and develop feelings of well-being. In general, people enjoy a wide range of outdoor activities such as walking, cycling, running, soccer and football. Public open spaces provide them with an opportunity to have those wide arrays of activities and to add health benefits along with social interactions. Good health and strong social bonds are very important for the well-being of any nation (Woolley, 2003). This section has stated the types of activities of different age group users in general, in public open spaces without emphases on any specific age group. More discussion will be provided in part 3 of this chapter regarding the activities of teenagers in public open spaces.

Section 4: Neighborhoods' public open spaces

Neighborhood public open spaces are those that are part of the physical environment of the neighborhood and also create a social setting for the neighborhood. People living in the same neighborhood might meet each other in those public open spaces. People in the neighborhood could be people who live there, or work in the neighborhood, or are other people who are just passing through (Woolley, 2003). Different activities and social interactions happen within a neighborhood community.

There can be different public open spaces in a neighborhood, including:

- Parks
- Playgrounds
- Community gardens
- Streets
- Alleys
- Incidental (marginal open spaces), spaces between buildings

According to Carmona et al, the initial motivation of the creation of neighborhoods goes beyond physical and spatial design. When designing for a neighborhood, certain social considerations must be addressed:

- social balance (mixed communities)
- neighborhood interaction
- creation of identity
- sense of community

Talen recommends using more particular components of community, such as residents' interactions, to create the connection between the physical design and the community (Talen, 2000). Resident interactions can be increased by design considerations that provide opportunities to increase the frequency of visual contacts. The importance of visual contact was mentioned in Gehl's research (Gehl, 2008).

Lawson states that people have a tendency to make their own rules for using public spaces. (Lawson, 2001). So, urban designers try to provide space where people can have choices. It is very important in public spaces that all the spaces are accessible to everybody and are used by the public. Francis emphasizes that considering how people use the space is one of the important issues in studying the public realm. Gehl believes that the hierarchy of social groupings is reflected by a hierarchy of communal spaces. He also indicates that physical structure from both a visual and a functional aspect support the social structure of society (Gehl, 2008).

Visual contact allows for some superficial forms of social interaction. Social interaction is also influenced by the conflict within space between social space and movement space. Carmona says that currently, activities such as leisure, entertainment, gaining information and consumption, can be easily accomplished through TV and internet at home (Carmona, 2003). This argument raises a question: do we need public spaces in neighborhoods anymore? Carr et al, answer this question by saying "the relationship of public space to the public life is dynamic and reciprocal, with new forms of public life requiring new spaces" (Carr, Francis, Rivlin, & Stone, 1993, p. 343).

Temkin and Rohe state that high levels of social relationships in a neighborhood create an environment in which people feel comfortable socializing with neighbors and outside strangers (Temkin & Rohe, 1998). They assert that "neighborhoods with higher levels of social capital should have lower crime rates and provide a healthier social environment for their residents" (Temkin & Rohe, 1998, p. 65).

Behavior patterns and the values of the people of each neighborhood might be different from each other. Much of the research by scholars shows that the factors of age and income can cause conflicts among users of public spaces in a neighborhood (Carmona, 2003; Carr et al., 1993; Hester, 1984). Woolley has also mentioned that people experience different types of open spaces in different stages of their lives (Woolley, 2003).

Thompson states that urban parks are useful for particular groups of people (Thompson, 2002). In Thompson's conception, public open space is a dynamic part of the urban landscape with a variety of functions. She believes that with access to more technology, and especially with access to the internet, people can organize events more easily in public spaces. Therefore, public open spaces will have greater use in the future. She considers open spaces in cities as places to celebrate cultural variety and for people to involve themselves more with nature and form memories.

Public open spaces are particularly meant for people, for their public activities and for socializing. Using cars for mobility, and the use of the internet are two factors that influence

social relations in neighborhoods. Common territory (geographic boundaries) is not anymore a prerequisite of community and social interaction (Carmona, 2003).

Carmona explains that residents of a neighborhood "are not geographically limited to the neighborhood or local area and can pick and choose from the entire city (and beyond) for jobs, recreation, friends, shops, entertainment, their children's schools, etc. Therefore, public open spaces in a neighborhood provide opportunities for people to find their own balance" (Carmona, 2003, p. 145).

Mobility is an important factor in using public spaces in a neighborhood. Since teenagers don't usually have cars, the factor of mobility is therefore limited for them to the proximity of their neighborhood. Cupers et. al, also describe the relationship between social needs and mobility in public spaces. The authors believe that "urban spaces have lost their function as signifier of community" (Cupers, Miessen, & James, 2002, p. 18).

Based on the observations of Aleksandra Ka´zmierczak about a park in the United Kingdom, ethnic diversity on its own does not reduce social interactions in the neighborhood. Ka´zmierczak also believes that short necessary activities such as walking do not develop social interactions. Based on a study of social interactions in Taiwan, pedestrian routes were the least supportive of social interactions. Ka´zmierczak emphasizes providing recreational facilities to increase the occurrence of social interactions (Kaźmierczak, 2012).

In terms of the individual roles of public spaces in neighborhoods, Thompson mentions an interesting point that in a busy urban context, public open spaces are the spaces in which people can actually be private (Thompson, 2002). Public spaces will continue to serve a central function in a community's self-definition and identification. Needs, rights and meaning are the key components that shape a public space in the neighborhood and create its future evolution (Carr et al., 1993). Users of public spaces in the neighborhood bring their own programs and desired activities, which may not be adapted to that public space.

Carr et al, state "In the United States, strong ethnic, regional, and class differences make complex relationship between public space and the people who use it" (Carr et al., 1993, p. 128). As a result, different groups of people, or even the same group at different points in time, can have varying needs and expectations.

People in public spaces in neighborhoods have daily experiences with different age groups. Residents find pleasure, interest and delight in these spaces. People need to feel comfortable and secure in these spaces. Residents of a neighborhood should feel that space is part of their lives and an expression of their identity. In public spaces people can learn to live together. Public spaces provide casual encounters for people living in a neighborhood, which can bind people together and give people's lives meaning and power. These encounters also can produce the opposite effect and can be a source of disagreement and conflict. Public spaces in neighborhoods can be places for people to relieve the stresses of work and life, and a place for relaxation and entertainment.

There are different degrees of freedom and control in public spaces (Carr et al., 1993). There are differences between the use of public spaces in low income neighborhoods and more affluent neighborhoods. Proximity is an important feature for low income groups, since they have fewer opportunities for mobility (Langdon, Clarkson, Robinson, Lazar, & Heylighen, 2012).

After discussing the general concept of public open space in the previous sections, this section emphasizes the different types of public open spaces in a neighborhood. The focus of this study, as was mentioned before, is on neighborhood parks. Most of the literature in this section regarding designing neighborhood public spaces has pointed out the social characteristics of public open spaces in a neighborhood. The physical design of public open spaces in a neighborhood can shape the social relations within the neighborhood, as well.

Section 5: Current condition and usage for public open space (quality)

When people use a public open space it confirms that the public open space is successful; considering human use and enjoyment is a basic requirement in creating and maintaining successful open space (Francis, 2003). Past studies of public open spaces show that satisfying human needs is one of the required factors for a successful public open space. So, based on these descriptions there is a necessity to study human needs in public open spaces in order to understand what issues impact the use of these spaces. The question is: when do public open spaces respond to humans' needs? So, the answer may be simple; those public open spaces with many people may respond to the users' needs and those without users do not.

Mark Francis mentions that, "There are several conditions that limit human use and enjoyment in public open spaces. Perhaps the most dominant barrier is an over emphasis on art and aesthetics" (Francis, 2003, p. 13). The Project for Public Spaces (PPS) offers four main characters of a successful open space: Accessibility, activities, comfort and sociability, which have been shown in the figure below (figure 1).

Figure 1: The Place Diagram developed by PPS

Francis states 5 main needs of users of public open spaces (Francis, 2003).
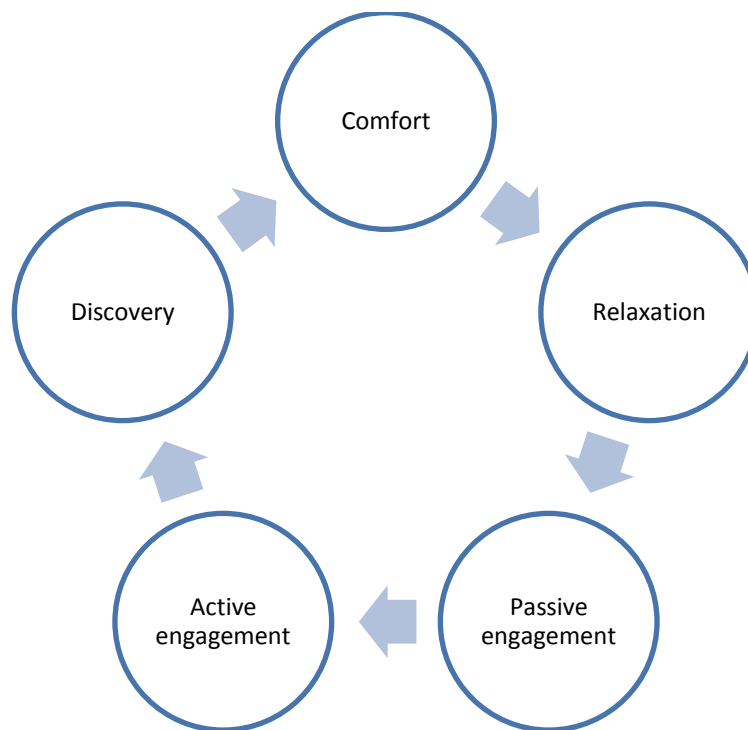
Figure 2: Users' needs of public open spaces by Mark Francis.

Following the discussion of users' needs, Francis discusses "user conflicts" as a common issue in public open spaces. According to Francis, most of these conflicts derive from

- Lack of concern for context
- Economic factors
- Equity differences
- Lack of public access
- Privatization
- Cultural and gender differences

These conflicts between user groups can also result from cultural and gender differences. As Gehl points out, watching and listening are the two most common activities that people, especially the elderly, tend to do in public open spaces. When the spaces work well, they serve as a stage for our public lives.

Stephen Carr (Carr et al., 1993) argues that besides satisfying user needs such as comfort, relaxation, passive engagement and active engagement, the successful open space should also protect user-rights such as accessibility, action, claim and change of space. According to Carr, successful open space should also foster connections inside and between different culture groups.

Carmona pointed out the same needs of people in spaces as Francis. Carr et al in relation to the success of public open spaces and argues that, "as well as being 'meaningful' (i.e. allowing people to make strong connections among the place, their personal lives, and the larger world), and being 'democratic' (protecting the rights of users groups, being accessible to all groups and providing for freedom of action), public spaces should also be 'responsive,' that is designed and managed to serve the needs of their users" (Carr et al., 1993, p. 84).

According to Carr, when an open space carries qualities that meet the individual user's needs and protects their rights in a way that creates a shared experience, connections between group members with similar interests, ethnic background and age can be built and cultural connections can be fostered (Carr et al., 1993).

Carmona states that space and society are related to each other, and we cannot define space without social context. Therefore urban designers by shaping the built environment affect the patterns of human activity and social life. Marcus developed a set of criteria for a successful place in terms of easy accessibility, comfort, support of the most desirable activities, commitment to the needs of user groups, encouragement of use by subgroups, support of programs for users, maintenance and so on (Marcus & Francis, 1998).

Public open spaces have both physical and human qualities. Physical qualities are the special features such as the size of open space and the aesthetic characteristics, including the presence of trees and water. Human qualities include features such as proximity, accessibility and availability of amenities and are essential to support and stimulate the needs and activities of users in open space (Carr et al., 1993; Giles-Corti et al., 2005).

Gehl, in terms of what makes quality in outdoor spaces, mentions the physical aspect of outdoor spaces. He states that where there are better physical conditions, outdoor activities have a tendency to grow in number, interval and scope. Gehl believes that when selected material and color make a palette in a city, it is possible through planning decisions, to create better or worse physical conditions and these physical spaces influence patterns of the activities of people and therefore create dead or lively cities (Gehl, 2008).

As previously mentioned, those kinds of outdoor activities that depend on the quality of outdoor spaces are optional activities. When these activities disappear in cities, it means that the quality of outdoor spaces is poor. William Whyte, in *The Social Life of Small Urban Spaces*, describes the close connection between qualities of city space and city activities, and documents how often quite simple physical alterations can improve the use of the city space noticeably (Whyte, 1980). Public urban spaces are valuable resources.

Looking at the different examples of literature regarding what makes successful public open spaces revealed that, in order to design a successful public open space the first thing to be considered is humans' needs. Public open space that meets the needs and preferences of a diversity of users can be considered as a successful space. Indeed, different age groups have different needs in public open spaces. The focus of this research is to discover the needs and preferences of teenagers in public open spaces.

Conclusion

Space and society are related to each other; therefore when we talk about public open spaces, we are also talking about society and its people. In short, we cannot define space without social context. Urban designers by shaping the built environment affect the patterns of human activity and social life. Public culture and therefore, public spaces, are produced by the numerous social encounters of everyday life. Due to the fact that these spaces are tied to daily life, they can have an effective impact on the quality of life of people.

The development of public open spaces in a community always increases the public living environment, attracts local businesses and provides space for community facilities and institutions. For example, observations of people's actual behavior in public parks reveals that green spaces have approximately twice more visitors and social interactions than barren spaces (Sullivan, Kuo, & Depooter, 2004). In order to increase the quality of life of people, we should consider the overall idea of user satisfaction which requires the understanding of non-users as well as active users (Erkip, 1997).

As mentioned before, for the purpose of this research, public open space is defined as outdoor space in a community neighborhood, and where a variety of social interactions and social activities occur. These spaces are accessible to the public and are owned and managed publicly. This research focuses on improving the quality of life and social interactions of a community in neighborhood-residential public open space, with an emphasis on teenagers.

The most important role of public open spaces in a city is to bring people together. Kaźmierczak states that, "public open spaces are essential for establishing social recognition and interaction between residents" (Kaźmierczak, 2012, p. 3). In fact, public open spaces offer casual encounters in a neighborhood that can bind people together and give their lives meaning and power. Social interactions are different for groups based on region, ethnic, income, and age (Hester, 1984). For this reason, activities vary in the community and each individual may look for different leisure-time activities.

Part 2: Teenagers' characteristics

This section discusses the relationships of teenagers with the people with whom they interact. This discussion emphasizes individuals and groups. The importance of age and gender will be considered throughout the section, as well. In summary, the main purpose of this section is to convey the social development of teenagers and factors which have influence on their development. The second part of the section discusses the different surveys that were conducted for this study examining how teenagers spend their time. The goal of this section is to present a snapshot of the social interactions of a typical American teenager.

The term "teenager" in this research means those who are in the age of majority (12-17) and, presumably would still be in middle school or high school. Another assumption in this research is that stages of growth and development among teenagers are related to environmental attachments and connections in the community.

Section 1: History of research on teenagers

Although scholars have written extensively about teenagers, and a developmental phase called "teenager" was identified at the beginning of the 20th century, research on teenagers has been insufficient. The significant societal interest in teenagers and youth in the late 1960s and early 1970s may have helped to stimulate this research. For example, an increase in the number of textbooks on the subject apparently reflects an increase in the number of courses on teenagers (Petersen, 1988).

In the public eye, teenagers first appeared as a distinctive group after World War II, complete with characteristic dress, habits and culture. The period before 1950, however, proved crucial for the formation of the concept of teenagers in the United States. After 1900, reformers, educators and legislators began to separate teens from adults and children (Austin & Willard, 1998).

Additionally, powerful beliefs about teenagers have weakened organized investigation of this group. For example, teenagers are often portrayed in the media as noisy, obnoxious, dirty,

inarticulate, rebellious and so forth. Such assumptions not only communicate to teenagers how they are expected to behave, but also create expectations in the research community. Hall is one of the pioneers in the psychology field, and is usually credited for being the first to identify the teenage years as an important period in life (Petersen, 1988). Erikson emphasizes the development of an identity as a central task of teenagers. Development also could mean new concepts of the world around them and involve more continual changes (Erikson, 1950).

Current research on teenager development emphasizes that the process of teenage development must involve interactions among the individual and other people and context (Lerner, 1981). After decades of ignoring environmental influences, scholars have turned to examining context as a means of understanding teenage development. Research on the social development of teenagers shows the importance of the family, peers and the broader social environment (Petersen, 1988).

Section 2: Importance of age and gender in development

Age:

Age is one of the most important factors for developmental changes and phases. The beginning of puberty is a major developmental moment in the teenage years, where teenagers are in developmental transition. A developmental transition is a period of life in which there is a great deal of change, both within the individual and within the social environment (Eichorn, Hunt, & Honzik, 1981).

Teens of different ages do have different social and emotional focuses and behaviors. Most research covering the age-related changes of teenagers notes that age changes in cognitive behavior have closely followed the influence of age changes in developmental theories, but most of the literature on aging has been concentrated on describing how older individuals differ from their younger peers at a given point in time (Schaie, 1967).

Gender:

Gender is an important factor in studying the development of teenagers. For example, some research shows that teenage boys with psychological difficulties are likely to have problems in childhood; girls, in contrast, are more likely to first have psychological difficulties in their teenage years (Petersen, 1988).

Girls appear to experience an increase in depression over the teenage period. The causes of the differences in development patterns for boys and girls remain to be explained, but it should be noted that genetics, hormones and environmental stressors have been implicated as influential (Rutter, Izard, & Read, 1986).

In terms of quality of life, research shows that U.S. students rank among the highest for those who are not feeling happy (rank seventh for boys and eleventh for girls) in a recent international survey (U.S. Department of Health and Human Services, Health Resources and Services Administration. *U.S. Teens in Our World* Rockville, Maryland: U.S. Department of Health and Human Services, 2003). The reason for pointing out these two issues in this section is that, even though this thesis emphasizes the issue of age, the author wanted to highlight the importance of gender as well in the use of public open spaces.

Section 3: The importance of social groups

The teenager's view of the environment is mostly shaped by influences of the people in the community around the teen. The impact of social factors on teens' social development can be seen as a factor in defining their identity and developing a sense of morality and values.

Social identity is developed by both social and personal relationships within a community. The dynamic between social and personal identity creates an overall identity; sometimes personal and social identity vary in influence, but it takes both. For teens, peer groups are the most important social influences. The setting of peer influences is important, and school is often the most likely location to expose teens to their peers. Public spaces after schools can be the second most likely

space where teens spend their time. Public spaces can play a vital role in the creation of a teen's development and identity.

Current research on teenagers will not only help in understanding this particular phase of life, but also may ease teenage development in general, because there are so many changes during the teenage period that require effective handling. Teenage years differ from earlier years in the nature of challenges encountered and in the capacity of the individual to respond effectively to challenges. Based on this statement, teenage years are the first phase of life that requires mature patterns of functioning that continue throughout life.

Reports regarding low quality of life raise questions about the relationship between quality of life of teenagers with the types of relationships held with family, peers and school. The importance of age and gender is discussed at the beginning of the chapter, as well.

Part 3: Public open space and teenagers

Section1: Teenagers' needs in public open space

Based on Owens, the term of "teenagers" did not appear until the 1950s. During this time, via influence of popular movies and television, teenagers were distinguished as a distinctive age group (Owens, 2002). Definitely public places play a significant role for teenagers. Based on the ideas of some researchers, public spaces may be the only spaces that the teenage group can claim for themselves (Skelton & Valentine, 1997).

Lynch in *Growing Up in Cities* (1997) reported that streets are extremely valuable unprogrammed spaces for teenagers because they provide a legitimate place for them to be (Owens, 2002). Other researchers indicated that the presence of teenagers in public spaces is a "form of resistance to adults" and by others as a "threat to public order" (Owens, 2002). Becker pointed out that, teens of all ethnicities are willing to hang out in public spaces, which is not limited to a particular group of teenagers (Becker, 1976).

Generally, the role of public open spaces is changing compared to past decades. Sennett asserts that the role of public spaces is not a place for spontaneous social meetings anymore; these activities now happen in places such as coffee shops, libraries, shopping malls, and so on (Sennett, 2002). He also adds that in this new century, public spaces support specific activities such as transportation. Nevertheless, he emphasizes that teenagers still need to use public spaces as social gathering places.

Teenagers are counted as undesirable users for many public spaces and in some cases they may not be allowed access. Teenagers need a public environment for their emotional and social development and lack of access may affect their development.

Another role of public space for teenagers is the creation of an environment where they can have privacy and be alone, or in other words, where they can escape (Lieberg, 1995; Marcus & Francis, 1998; Owens, 2002). For this reason, teenagers should feel safe and secure in public open spaces in order to sit and think and daydream. Privacy is a strong need of this age group, and one problem that teens face is having few places to go that are not supervised by adults, and because teenagers do not usually have access to cars, the number of places that they can gather is even more restricted (Marcus & Francis, 1998).

Public spaces should provide opportunities for unplanned gathering and exploration. Public space should also facilitate the desired activities of teenagers. Teenagers do not like to use public spaces that tend to control them. They want to have freedom and express themselves in the space (Thompson, 2002). However, some scholars believe that teenagers do not need any specific space; instead they need the space to be friendly, and they can feel free to express themselves in any number of settings (Owen 2002).

Public space for teens is a place that they can be themselves. In public spaces, teens test out and try different behaviors and actions such as appearance, clothes and talent. Public space is a place that they might need more than any other age group, because that is a place where they create self-identity (Lieberg, 1995). Teenagers have no obvious right to their own spaces. They often

have nowhere else to go except outdoor public places, where they often come into conflict with other groups (Lieberg, 1995, p. 721).

Teens do different types of activities in public spaces:
- Leisure activities (which are physically demanding and largely exceed the sphere of childlike games)
- Daydreaming
- Games and sports

L'Aoustet et al, assert that participation in a game goes beyond just playing an activity at that moment and contributes to the temporary forgetting of differences in ethnic background, generation and class (L'Aoustet & Griffet, 2004).

Indoor activities such as watching video and computer games limit the outdoor activities of teenagers. These activities in the contemporary era have replaced the former spontaneous play that once took place in the backyards and alleys between houses (Thompson, 2002). Current public life creates new forms of lifestyles of people. Lieberg states that, even if youth create their own public realms backstage in the neighborhood or within sports, they also find their way into the larger public realm and thus become part of it (Lieberg, 1995). Lieberg also believes that it is hard to understand the behavior and activity patterns of teenagers in the public environment without relating to the issues of modernization and individualization.

In terms of modernization, these days many people do not socialize in public open spaces, but go to coffee shops and so on, which many teenagers cannot do. Teenagers may have no place to go when they want to be with their age group, except public spaces. They tend to go to spaces where adults do not go and can't control them.

Lieberg, in terms of needs of teens from public spaces, states teens need to be present in public spaces "to withdraw away from the adult world and to one's own peers; on the other hand to meet and confront the adult world, to put oneself on display, to see and be seen" (Lieberg, 1995,

p. 738). Definitely there is a need to avoid other age groups and to meet other teenagers and teenage groups.

Teens like to be where there are other people and where special things happen, which is one of the consequences of social relationships in public open spaces. Local teenagers in the neighborhood mostly show up as a group in public spaces. They have boys-only groups, girls-only groups and mixed groups (Lieberg, 1995).

Teens are inclined to do activities that are not planned and develop their own patterns spontaneously. Public space for teenagers is a stage for verbal expression and external attributes such as clothes, taste in music and appearance (Lieberg, 1995; Owens, 2002). Teens, by sharing public space, learn to live together without realizing that they are doing so.

Part 4: Literature on research methodologies

During the last twenty years the research on young people and their relationship to their environment has increased. Numerous researchers from different parts of the world with different backgrounds have given attention to observing the experiences of young people in a city.

Case study 1: Growing Up in Cities (GUIC) Project

One of the pioneers to study the relationship of young people with their surrounding environment was Kevin Lynch. Lynch in his research *Growing Up in Cities* studied a small sample of young people in different cities (Melbourne, Warsaw, Salta and Mexico City). His purpose in this study was to understand how young people use and value their environments, and also to identify the importance of urban space as a significant resource in development from adolescence to adulthood. His project was one of the most significant studies that has been done about young people's perceptions and experiences of their local environment (Travlou, 2003).

In order to collect information about the lives of youth, he has suggested an approach with multiple methods, including:

- "the collection of census demographics and maps showing the local socio-environmental features;
- the collection of material related to the local culture of childhood;
- the observation of children's use of the community;
- individual interviews with small groups of children and youth;
- guided tours led by small groups of children;
- and, interviews with parents and local officials regarding their perceptions of how current environmental conditions and changes are affecting children's lives" (Travlou, 2003, p. 3).

After two decades of doing this research, his research was funded by UNESCO (United Nation Educational, Scientific and Cultural Organization). Then he started to expand his study into more countries. In this phase of research, Lynch focused on low-income areas.

The uniqueness of this project was that it could apply to many different cities, as it studied many different cities around the world. Another goal of this project was to compare the needs of youth in the past and present at two sites from the seventies that were reconsidered in the nineties.

All of the features that determined good environments in which to grow up in the seventies re-emerged in the nineties:

- "a feeling of social integration and acceptance;
- varied, interesting activity settings;
- peer gathering places;
- a general sense of safety and freedom of movement;
- a cohesive community identity; and
- where there are available, green areas for informal play and exploration as well as organized sports" (Travlou, 2003, p. 5)

There were also constants in the features that children associated with alienation and dissatisfaction:

- "social exclusion and stigma;
- boredom;
- fear of crime or harassment;
- heavy traffic; and
- uncollected rubbish and litter (Travlou, 2003, p. 5)

One of the interesting things about the project results was that beyond the basic needs of youth from their environment, what they wanted most was a sense of security, acceptance and positive identity in their local environment. As a final point, Lynch's study showed that communities have to consider children's and youth's views on environmental decision-making in their local environments (Travlou, 2003).

Regardless of the other aspects of this study, Lynch's recommendations for gathering information about youth and their environment have been one of the inspirations for the gathering of data for this research. As he has stated about his approach to data collection, the two methods of observation and interview have been used for this research.

Case study 2: Researching public space with young people

Eleanor Jupp researched how young people themselves understood and used neighborhood spaces. The author asserts "young people actually had important investment in such spaces, which they used for socializing, playing in, walking to school and so on." The author in this paper explains her experience with teenagers through meeting with them and talking directly with them. The purpose of her meetings was to hear directly from teenagers and young people about how they use spaces in the neighborhood.

However, she explains how hard it was to get any information from them, and how they sometimes refused to answer her questions, and did not initially engage in the participatory map that she wanted them to draw of the spaces. At the end she suggests that "we might take such

refusal and silence more seriously" (Jupp, 2007). She mentions the temporary sense of sharing in the making of spaces. Based on her research, teenagers need to be comfortable in the space. She said she heard the word "feeling comfortable" more often when she asked teens to explain the experience of being together in the community (Jupp, 2007).

The significance of this case study for this research was the experience of the researcher with teenagers. Jupp has explained his experiences of working with teenagers in simple language, which has been very useful and inspiring for interviewing teenagers in this research.

Case study 3: Growing into the 21st century project

Among all of these case studies, there were certain projects that focused especially on young people to see what their perceptions are of their local environment are, and how they use their local environment (Matthews, Limb, & Taylor, 1999). The main claim of this study was that young people are apparently absent in public spaces beyond home, school and playground because usually these spaces are not appropriate for their needs and do not respond to their desires (Matthews, 1995; Matthews, Limb, & Percy-Smith, 1998).

The methodologies used for this study were a survey and interviews. The findings from both the questionnaire survey (among people aged 9 to 16 years), and semi-structured interviews with young people, show that more than a third of the sample used local streets on a daily basis to hang out with their friends. Findings also showed that the street is not a male-dominated environment. (Matthews et al., 1999)

The study expressed that the local environment also has cultural value and meaning for teenagers. According to this study, teenagers make their own micro-geographies within their local environment in order to gain spatial autonomy from adult control. This study revealed that teenagers in public spaces create their own identity and with reclaiming some of these public spaces they try to create a distance from the world of adults.

Researchers throughout the study found that teenagers usually come to use the space in a way that is not specified for them. For example they would hang out in the playground for children in the evening in order to be away from the sight of parents. The study also showed that public space should be a place that teenagers could show off their talents for sports, their new clothes and hairstyles and so on.

This case study was also conducted through interviews. The interview format is a strong method for collecting data for this research, since all of these case studies in this section have used interview. Research subjects related to human behavior and social issues make direct connections with under-studied people.

Part 5: Conclusion

The issue of public space has been discussed by many scholars. A look at the literature reveals that there is a direct relationship between public spaces and public life. In other words, the ways people live affect the ways they use public spaces. Users of public open spaces have different norms, beliefs and values. Therefore, the way that they use these spaces differ.

A review of related literature suggests that public open spaces offer a variety of benefits to citizens of a community. Extensive research and practical experience of public open spaces suggest the opportunities and benefits of different types of open spaces to society and individuals. Because these spaces are intended to be open to all people, it is essential that they be highly accessible to all people.

Because of the diversity of those who use public open spaces, and their different psychological and physical preferences and requirements, it is important to know the needs of different age groups in public open spaces. Physical needs change based on age. Accordingly, the type of public spaces that each age group uses is different too. Neighborhood parks are one of the public spaces that people of different age groups use in different ways and at different times of the day.

In addition, it has been mentioned in a lot of the literature that teenage groups need to have privacy in public spaces. They need to feel that they have freedom in the space and are not supervised by other people. Public spaces can become social venues for teenagers and have a significant role in the social development of teenagers.

Teenagers have different needs in public open spaces from other age groups. Public open space acts as a stage for teens to show off. Teenagers need a space that they can claim for themselves. Sometimes they create their own space within public spaces; it has been found that teenage groups do not always use spaces in the ways that they have been intended.

In conclusion, a review of previous research reveals findings regarding the use of public open spaces and, in particular, the teenage group's use of public open spaces. In order for public open space to be used by teenagers, it must provide the privacy and freedom that teenagers need, while they have to be safe and secure at the same time. This can be accomplished primarily through the location of the public space in a context that responds to their needs. In addition, it has been suggested that through the design, location and orientation of different public open spaces, the needs and preferences of the teenage age group can be accommodated.

Through this study, it is the researcher's intention to further research these findings, and more specifically, to introduce methods that could be utilized to study the design and planning of public open spaces for teenagers. The next chapter discusses different methodologies for this research and describes the most effective methods for this research.

Chapter 3: Methodology

Because this study focuses on gathering information about a relatively small age group of teenagers who are the users of the specific public open space which has been investigated in this study, it was determined that qualitative methods of evaluation would be appropriate. Additionally, it was determined that ethnographic research, which combines several research

techniques including observations, interviews and field notes and surveys would provide the most useful and detailed information for this research.

Two series of open-ended interviews and random site observations were used. The following comprises more detailed descriptions of the reasons why these particular research methodologies and techniques were chosen to conduct this research.

Part 1: Site Selection

Section 1: Preparation

Before the research could be started, several issues had to be addressed. The most important factors were that the neighborhood park should be located in a low-income neighborhood with a considerable population of teens. If it was in a neighborhood where there were no teens, the research would not be possible. Correspondingly, preliminary site visits were necessary in order to examine the contextual and physical characteristic of the site and also do observations.

In order to determine where the study would take place, one primary characteristic was required; the study site should be in an urban environment that contained public open spaces. Roanoke, Virginia was chosen as the urban environment because it encompasses different types of neighborhood areas, most of which contain public open spaces as well as neighborhood parks.

Therefore, the study site within the city of Roanoke required the following criteria:

- It should be located within the city district with a variety of public open spaces and different age-groups of people. This was important because this study focuses on the factor of age, and especially the teenage group.
- The neighborhood park should be located in 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, with emphasis on teenagers.
- The neighborhood should have a reasonable population of teenagers, in order to be able to study teens.

- The park should have variety of spaces because the emphasis of this study is on the relationship of the space with teenagers' use of space
- The park should be an appropriate size so that the researcher would be able to see all of the space at the same time, but also large enough to contain a variety of spaces and attract a diversity of users from the neighborhood.

These criteria acted as a guide to help the researcher to find an appropriate study site for this research. The researcher also was assisted by Roanoke City Parks and Recreation greenway planners. As a result of this process, Horton Park in Roanoke was chosen as the case study for this research. Several preliminary site visits were made in order to determine the characteristics of the site and the contextual conditions.

Part 2: Research Approach

Observations:

There are several approaches to the study of environmental preferences. Observation is one of the most popular methods used for studying the human experience of the outdoor environment. The main advantage of the observation method is that the researcher can have direct access to the subject of study. Therefore, observation was one of the first methods that seemed to be desirable for this study.

As it seemed that observation could be a useful and effective method for collecting data for this research, the researcher discovered that there were many limitations to this study using the observation method. Sommer and Sommer assert that, "observation is the ideal method for studying commonplace nonverbal behaviors, such as gesture, or seating arrangement, in which people may not be consciously aware of how they are acting" (Sommer & Sommer, 1992, p. 48). This assertion justifies the first problem of using an observation methodology for studying teenagers. The researcher could not just go into public spaces and observe teenagers' behaviors. First, the researcher would have to get the permission of the teenagers' parents and after a while,

the teenagers would begin to notice that they were being observed which could affect how they behave.

Another constraint was that it also could be dangerous, because the researcher would need to visit the site many times throughout the day. The researcher would be alone and teenagers might be involved in dangerous activities; for example the researcher could witness a crime.

There are also other limitations with this methodology, such as:
- Weather constraints which affect the activity of teenagers
- Different seasons
- Different times of the day
- Weekdays and weekends

However, limited observation was done for this case study in order to support the research, but the data from observation, alone, cannot be accurate enough to apply to all other cases.

Interviews:

Sommer and Sommer state that, "observation deals with behavior, not with attitudes and beliefs. If you want to find out what they think, you should ask them directly" (Sommer & Sommer, 1992, p. 59), which justifies that observation was not the most accurate method for this study. The other method that could be used was interviewing teens and asking them directly what they need and what they expect from outdoor public open spaces. Sommer and Sommer define an interview as a "conversation with purpose" (Sommer & Sommer, 1992, p. 108). Through interviews it is possible to discover people's opinions and preferences about particular topics. There are two types of interviews; structured and unstructured. For the aim of this research, structured interviews were selected. In this type of interview, the questions are prepared in advance and asked during the interviews in a set order and in a specific way. This way, each interview is consistent with the previous one, and it is easier to compare the responses of interviewees.

Even though this would seem to be the most effective methodology, it did not work appropriately with this particular age group. Therefore, due to restrictions in talking to teenagers directly, another option was to work with them under the supervision of other people (such as a teacher).

In the end, it was decided that two series of interviews would be needed. The first series was with professionals who had experience in working with teenagers and the second series was with teenagers directly, but under supervision of a supervisor. Through the interviews, insight was expanded as to how teenagers perceive opportunities that are available in public open spaces and what they wish to have.

Part 3: Collection of descriptive data

Question development:

Upon discovering complexity within the body of scholarly literature regarding teenagers and public open space, the researcher created a broad question set in an effort to better understand the complex nature of the issue of public spaces for teenagers.

In general, the researcher found some dissimilarities between what the literature revealed about teenagers' needs and what the findings of the interviews indicated. Scholars such as Lieberg (1995), Marcus and Francis (1998) and Owen (2002), have indicated that one of the important roles of public space for teenagers is the creation of an environment where they can have privacy and be alone, or in other words, where they can escape. It seems that neighborhood parks, and in general public open spaces in neighborhoods, were more spaces to be away from home and parents for teenagers, who like to be with their friends, and negotiate with other age groups.

Keeping in line with the literature on the topic, the initial intent was to develop a more complete understanding of the design of public open spaces for a particular group of teenagers (age12-17). However, this proved somewhat problematic because of the above problems with teenagers.

In short, the literature review was critical to the creation of questions, but was not the single source for question development. Some interview questions were developed from themes recurring throughout the literature review. A number of questions were developed in response to the particular group of teenagers that were examined in this research. Additionally, a number of questions were designed to address the researcher's general curiosity and the perceived importance of public open spaces in the neighborhood.

Indeed, the question, "why is public open space important for teens?" surfaced routinely throughout the research literature review. With the sources in mind, the researcher consciously sought to establish a question set that simultaneously engaged the ongoing scholarly conversation while also addressing the particular context creating a question set that was comprehensive, open-ended, yet brief. This proved to be one of the greatest challenges of project development.

 In an effort to understand the hierarchical arrangement of public open spaces, the researcher elected to divide the questions into analytical subcategories:

- Observation of the interviewees
- Experiences of interviewees in public spaces
- Evaluating the interviewee's answers about public spaces (suggestions and recommendations)

Section 1: First phase interview protocol design

It was important to interview local professionals who work with teenagers, because of their insight into how current public open spaces respond to teenagers' needs. Participants in this phase of the interviews were six professionals who had experience in working with teenagers, and who also were familiar with Horton Park, which was the site of the research.

An interview protocol was followed to provide a level of consistency throughout the process of data collection. The purpose of a research protocol is to help participants reconstruct

interpretations, and understanding their experiences in the defined context of the research (Seidman, 1998).

The shared, descriptive interpretations of these conversations are the participants' individual experiences in working with teens and the related case study of this research, which was Horton Park in Roanoke, Virginia. The goal of these questions was to encourage the participants to express individual opinions and experiences related to the subject of the research and also to help the researcher to complete the observations of the teenagers of the case study.

The interview protocol for the first phase of interviews with adults can be found in Appendix A. Questions asked in this interview protocol examine the importance of neighborhood parks for teenagers to aid in understanding how improvements in neighborhood parks can help the social development of teenagers. The interview protocol was divided into two parts. The purpose of the first part was to find out how important neighborhood parks are for teenagers and how teenagers use neighborhood parks. The second part includes open-ended questions to identify what can be done to improve neighborhood parks for teenagers and what are the opportunities and constraints.

Section 2: Participant selection for the first phase of interviews

Participants for this study were recruited from local officials and people who interact with teenagers. The sole inclusion criteria for this study were that participants were administrators or others who had worked with teenagers on a daily basis.

People and places the researcher could find people to interview within the city of Roanoke:
- Office for Youth
- City planners
- Librarians
- School Counselors
- School administration

- Recreational program developers

During the interviews, the researcher was open to taking suggestions as to who else could be interviewed. In general, eligible participants could be vetted based upon their perceived capacity to address questions regarding the issue of the influence of public open spaces on teenagers.

Section 3: Second phase of data collection

For the second phase of interviews, it was necessary to interview teenagers of the ages between 12 and 17 and who were from low-income neighborhoods in the city of Roanoke. To obtain these goals, different locations in the city of Roanoke where the researcher could find teenagers were identified.

Before starting the interviews with teens, experimental models of different design options for the site were created to help the teens better visualize the questions. The design of the models was based on the analysis of the first part of the interviews with professionals. How the analysis and its results were used to make the study models are explained in the next chapter on analysis.

Working with teenagers usually is harder than working with other age groups.
Thus, the researcher attempted to make the experiment interesting for teenagers. The interview questions were designed to be as short as possible. Study models were created to help respondents to better understand what could be improved in the park and to help them to visualize changes that could be made.

On the day of interview, teens demonstrated that they were excited and asked questions regarding the purpose of the study, what the researcher's major was and how the researcher constructed the models.

The alternative models (see figures 3, 4, 5) were generated to be simple, with a minimum of detail. The reason for these decisions was that the researcher did not want to create confusion for

the participants and wanted to emphasize the most important features of the design. The lack of detail helped focus attention at the level of input that was needed.

The interviews were conducted at the West End Center in the city of Roanoke. The West End Center is an organization that serves 200 children each year who live in many of Roanoke's disadvantaged neighborhoods. Since this research focused on parks in poor neighborhoods, the teens in this center were a good sample for this phase of data collection.

After making all the arrangements with the West End Center and passing all the criteria for the IRB (Institutional Review Board) at Virginia Tech, the researcher was able to make a reservation for a workshop interview with 15 teenagers, including 8 girls and 7 boys, between the ages of 12 to 17, in a classroom with their teacher. Individual interviews with each teenager at a time took place.

At first their teacher explained to them the process of the interview and its goals. The teacher explained that participation was voluntary and there was no obligation for the kids to participate; luckily everybody in the class agreed to participate. Actually, they were excited that they would do something different in the class rather than their routine schedule. Fortunately, the participants did not have difficulty in understanding the models, since they all were familiar with the park.

Model A:

Figure 3: Plan view of Model A. Source: Author

Model B:

Figure 4: Plan view of Model B. Source: Author

Model C (existing study site model):

Figure 5: Plan view of Model C. Source: Author

Section 4: Second phase interview protocol design

This phase of questions was developed after the descriptive accounts collected during the first phase were analyzed for common themes. These questions further interpreted the different design options for teens in neighborhood parks. Because these questions were designed to be asked of teenagers, the number of questions was limited to make them short and clear. The questions were easy to understand and teens did not have to think that much to answer them.

Model A:
1. Where do you enter the park?
2. Where would you prefer to gather with your friends at the park?
3. Where is your favorite space in the park?
4. Where is your favorite seating place in the park?
5. What would you do in this park?
6. If this park is located in your neighborhood would you like to go there? Why?

Model B:
1. Where do you enter the park?
2. Where would you prefer to gather with your friends at the park?
3. Where is your favorite space in the park?
4. Where is your favorite seating place in the park?
5. What would you do in this park?
6. Which pathway would you use to get in the park?
7. Which pathway would you use to get in the seating area?
8. If this park was located in your neighborhood would you like to go there? Why?

Comparison A with B and C (park as it exists):
1. Which park is easier for you to get into?
2. Which parks do you like the most?
3. Which space is your favorite space?
4. Where is your favorite seating space among the parks?

5. Where is your favorite gathering space among the parks?
6. What other spaces do you wish you had in these parks?
7. Would you like to have a space just dedicated for teenagers in your neighborhood park?
8. Do you have any other suggestions?

Chapter 4: Analysis and Results

Part one of this chapter is the analysis of the study site, and part two presents an analysis of the data collected in two phases of interviews.

Part 1: Site Analysis

Horton Park

Horton Park is located in the Loudon-Melrose/Shenandoah West neighborhood in Roanoke, Virginia. Horton Park was dedicated in 1994. It is surrounded by Lansdowne housing development on the south, Melrose public library on the west, and Forest Park School on the North. The park and the school have a combined significant green space in the neighborhood. This concentration of resources around Horton Park indicates the unique location of this park in the neighborhood.

Lansdowne property is a public housing development that provides apartments for low-income families. About 300 families live in this property; all are low-income residents. Melrose public library is a small neighborhood library next to Horton Park, which is a great public resource that offers variety of services for the residents in this neighborhood. This library also has some services for teenagers in order to fill their free time.
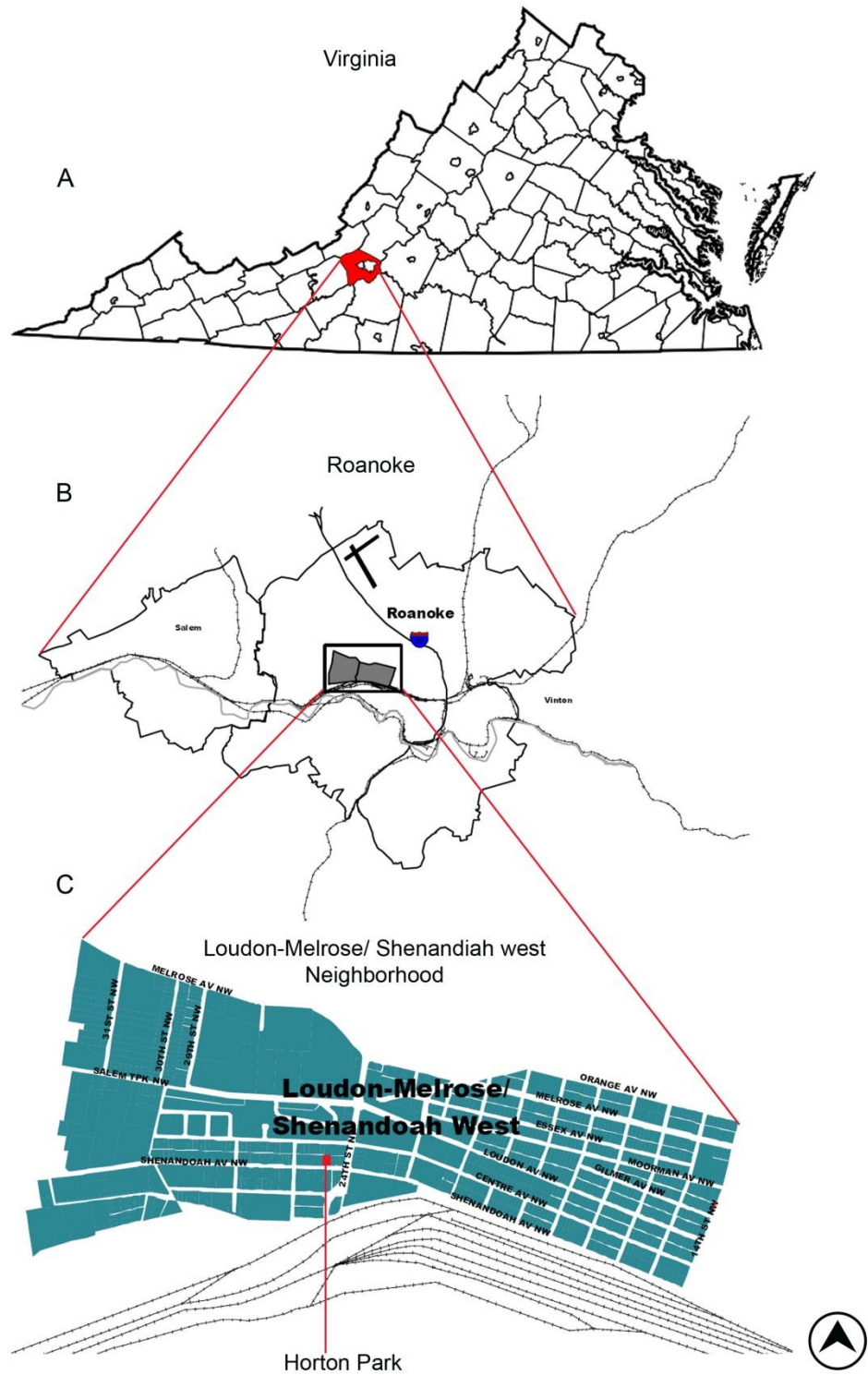
Figure 6: A: Location of the city of Roanoke in Virginia. B: Location of the Loudon-Melrose neighborhood in Roanoke. C: Location of Horton Park in the neighborhood. Source: Author

Context:

Based on Roanoke government data, there is a high level of activity of residents in this park, especially small children and teenagers. Again based on the same source (Roanoke Government website):

- "From a facility/programming standpoint; there exists a gap in the offerings targeted for the youth and teen audience."
- "No real place for young teens to go after-school unless they are active in sports or church."
- "Park system has a lot of potential, but it is not currently meeting it."
- "Program offerings could be enhanced to effectively target all age segments" (City of Roanoke Parks and Recreation Department, 2007, p. 8)

The table below shows the demographics of this neighborhood between 1980 to 2000. As you can see, the population of ages 0-17 is consistently the greatest.

Year:	1980	1990	2000	% Change, 1980-2000
Population	3,166	2,700	2,566	-19
Households	1,058	1,032	987	-7
White	1,050	565	271	-74
Black	2,090	2,135	2225	+6
Other Races	26	0	70	+170
0-17 Years Old	1,094	859	914	-16
18-34 Years Old	784	702	584	-26
35-64 Years Old	908	804	809	-11
65 Years and Over	380	335	248	-35

Source: U.S. Census Bureau,
1980, 1990: Tract 8, Block Groups 3,4,5; Tract 9, Block Group 1.
2000: Tract 8, Block Groups 2,3; Tract 9, Block Group 1

Figure 7: Demographic Trends, 1980-2000. Source: (City of Roanoke Planning Building and Development, 2010, p. 26)

The land-use zoning surrounding and including Horton Park is shown on the following page. The map shows that a portion of this area of the city is designated for light industrial uses, but also it indicates that more than half of the zoning area is designated for residential use. The residential zoning designation indicates the wide variety of people in the area surrounding Horton Park.

Existing Zoning and Land Use Map

Existing Land Use

- Residential
- Commercial
- Mixed Use
- Institutional
- Industrial
- Recreation and Open Space

RM-1, Residential Mixed Density District
RM-2, Residential Mixed Density District
RMF, Residential Multifamily District
CG, Commercial General District
CN, Commercial Neighborhood District
MX, Mixed Use District
IN, Institutional District
ROS, Recreation and Open Space District

N

Figure 8: Existing zoning and land use map of the neighborhood. Source: (City of Roanoke Planning Building and Development, 2010, p. 7)

The Lansdowne housing development's proximity to Horton Park, the library, and Forest Park School contributes to outdoor activity and a sense of community.

47
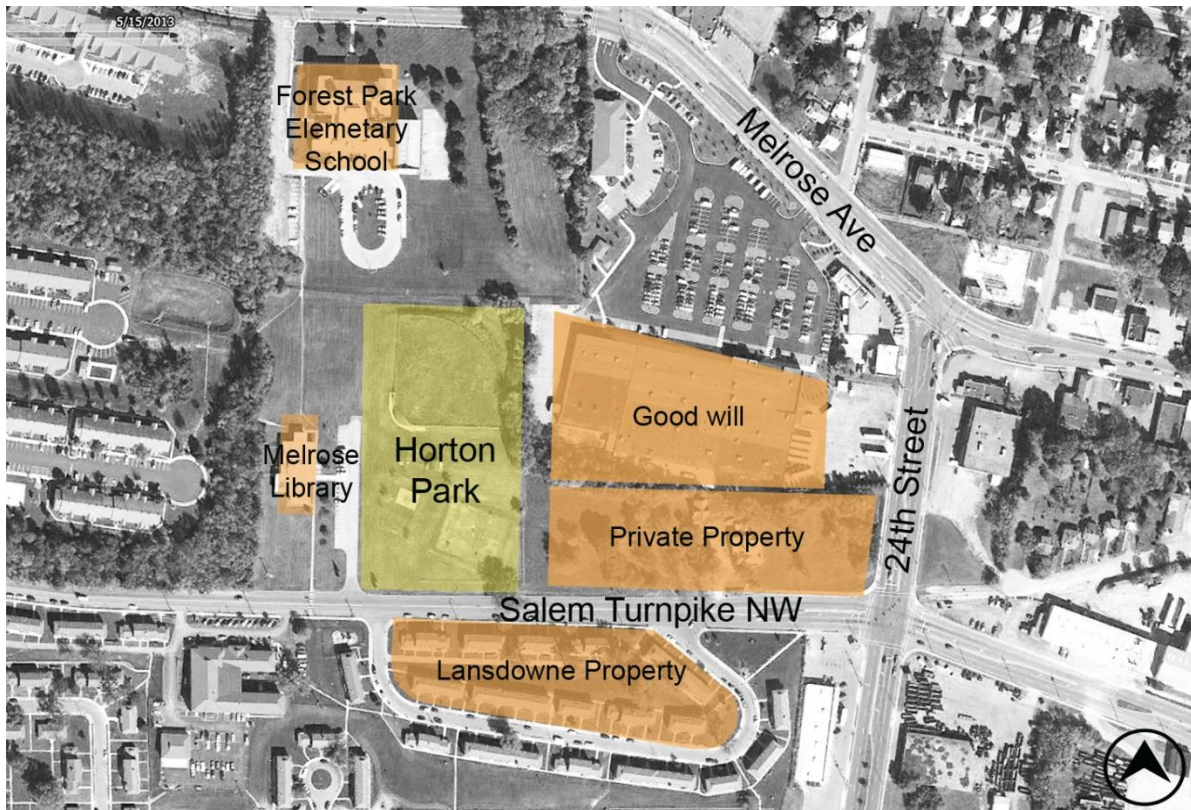
Figure 9: Plan view of the study site with surrounding area. Source: Author

In this photo, Horton Park is shown in the yellow color in the middle, and Lansdowne property is located to the south of Horton Park. Melrose library is located to the west of the park; Forest Park Elementary School is to the north of the park, and private property (Goodwill and single family residential) is to the east of the park.

There is a parking lot on the west side of the park. The parking lot is located between the park and library and belongs to the library. Based on the data on the Roanoke government website about this neighborhood, the green area between Horton Park and Forest School to the back of the park is being considered for the future location of a Boys and Girls Club (based on the Roanoke government website data).

The Boys and Girls Club would significantly increase the use of the park for teenagers.

This City-owned land at Horton Park between the Library and Forest Park Elementary School is being considered as a future location for the Boys and Girls Club.

Figure 10: This photo taken from the Roanoke government website notes that Horton Park has been considered as a future location for Boys and Girls Club. Source: (City of Roanoke Planning Building and Development, 2010, p. 47)

Physical Characteristics:

Horton Park is approximately 181,039 square feet.
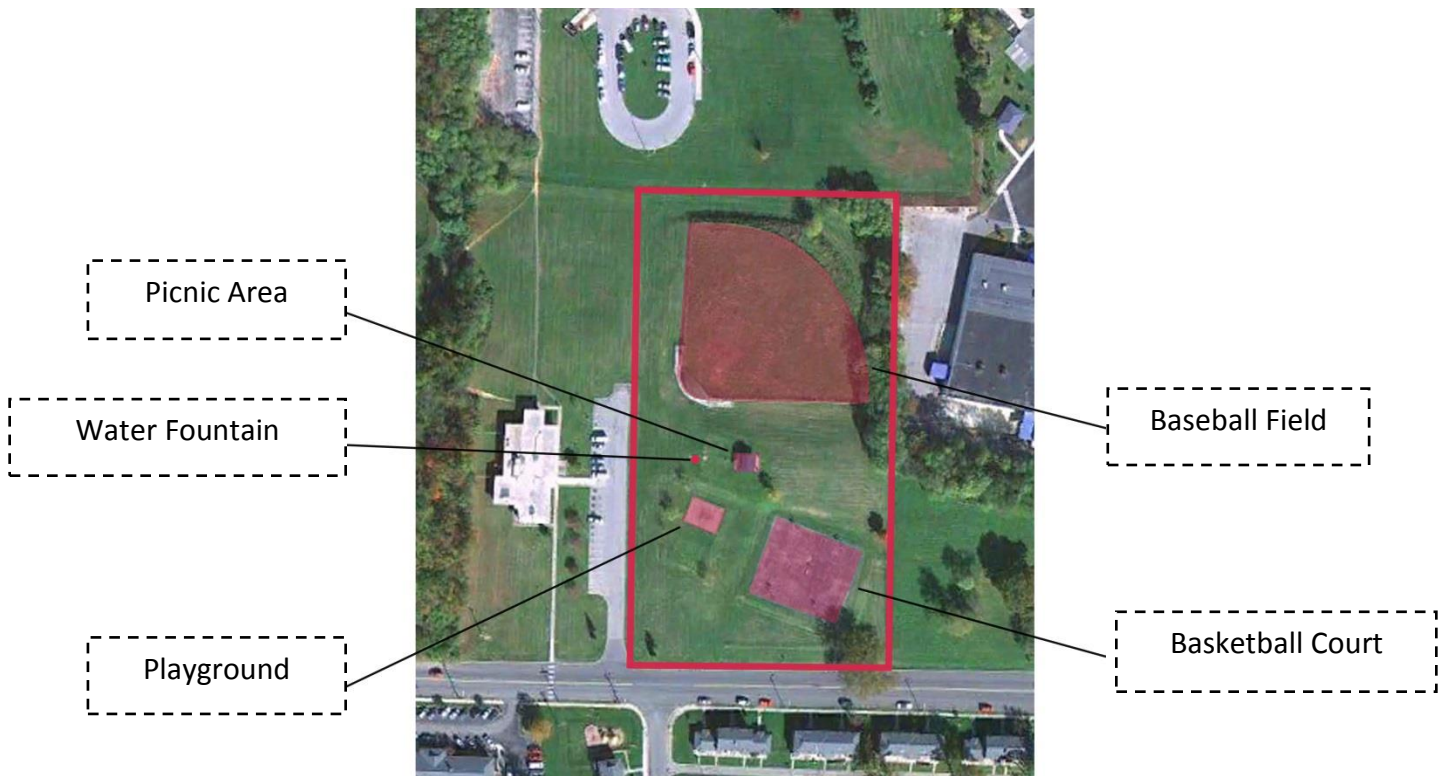
Figure 11: Plan view of the study site. Source: Author

Horton Park has a basketball court, a picnic area, a baseball field, and a small playground. The basketball court is used most frequently. There is just one water fountain close to the playground in the park; its water is usually warm. Also there is no restroom at the park. Children and teens usually use the facilities at the Melrose library.

Entrance of the park

There is no real entrance to the park. There is just one sign that indicates the name of the park. There is no sidewalk around the park at all.

Figure 12: The Horton Park sign located at the south west corner of the park.
Source: Author

As mentioned in the literature review, clear access is important; people tend to use spaces that are visually accessible both because they appear easily accessible and because they provide at least a superficial level of safety (Francis, 1989). Therefore, in this case an entrance and sidewalk (clear access points) may produce an increase in the use of the park. Because there are not much in the way of trees and vegetation around the park, there is high transparency.

Figure 13: Panoramic view of the front of the park with library to the left and basketball courts to the right.
Source: Author

Figure 14: Photo of the only fountain in the park. Source: Author

Figure 15: Photo of the only seat between two basketball courts with a trashcan next to it. Source: Author

Figure 16: Photo of the view of the basketball court from Salem Turnpike Street in front of the park. Source: Author

The basketball court is located in the front of the park and has a good view from Salem Turnpike.

Figure 17: The picnic area at the park. Source: Author

The above photo shows the picnic area. This is the only place with cover in Horton Park. There are a trashcan and fireplace next to the picnic area. There is a good view from the picnic area to the baseball field and Forest Park Elementary School. Aside from the bench between the basketball courts, the only other seating provided in the park is located in this picnicking area.

Figure 18: The playground at the park. Source: Author

The playground is fairly small, including only two swings. Most of the time teenagers bring their younger siblings to the park to play on the swings. The playground is close to the edge of the park, near the parking lot.

Figure 19: The pathway connection between the Melrose library to the Elementary School in the back of the park. Source: Author

There is a pathway from the library that goes along the back of the library and connects the library to the Forest Park Elementary School. Basically this is the only path that connects the school to the library, and consequently to Horton park.

The images below show the connecting pathway from the library to the school. The connecting pathway has been shown in orange. The first image shows the site and the middle image shows the connection pathway from Melrose library to the Forest School. The last image shows the pathway connection from the Salem Turnpike Street to the Melrose library.

Figure 20: The pathway that connects Melrose library, Forest Park Elementary School and Horton Park.
Source: Author

As all of these diagrams show, there is no real pathway to connect Horton Park to the library or to the Forest School. Therefore, Horton Park is physically disconnected from library and school. Essentially the park appears somewhat disconnected from all its surrounding area, since there is no real pathway to direct you to enter the park and no sidewalk around the park.

There is also no crosswalk to get to the park. The only crosswalk to cross the street is the one to get to the library.

Figure 21: The crosswalk to get to the library. Source: Author

Basically the entire park is covered with grass. There are a few trees in the park and generally, the park is not protected from sun exposure. Because of this, it is usually too hot to go to the park during the summer. There is also no connection among the spaces in the park. Each space is separate from other spaces and there is no pathway or anything else to connect them.

The program activity:
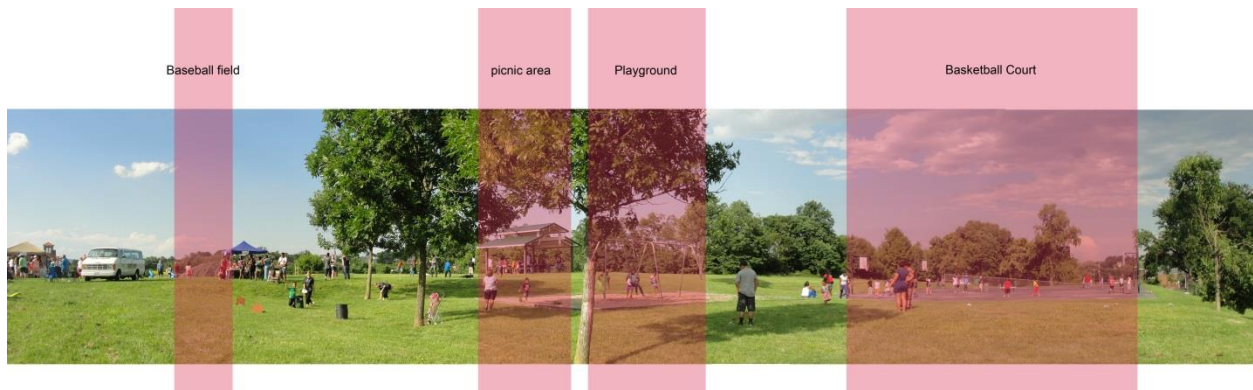
Figure 22: Different activities at the park. Source: Author

To better understand what activities happen in the park and what users do in the park, and eventually to find more information about the teenagers who use the park, random observations were done. Horton Park was adopted by the Straight Street organization. Straight Street is an organization in Roanoke that offers a variety of programs and activities for youth in Roanoke. In

this organization they encourage teens to do community service projects that train them to be a better citizens by helping others.

At times during the year, this organization gathers teens who are in the organization to check the maintenance of the park, to mow the grass, and also sometimes they conduct community events at the park for teens in the neighborhood.

The researcher attended one of these public events at Horton Park, and made observations.

- Teens like vast open spaces; they don't like to be hidden in enclosed spaces.

- When they are playing sports they like to be seen, because they want to show off what they are doing

Figure 23: Teens playing at the Horton Park basketball courts. Source: Author

- Girls like to sit and watch boys when they are playing basketball

Figure 24: Two teenagers sitting next to the basketball court watching their friends while talking together. Source: Author

- Girls like to sit and talk; they like to hang out in the seating area (seats in the picnic area)
- Teens will interact with other age groups; some of them bring their younger siblings and cousins to the park and take care of them.

Figure 25: Two teens with their younger sister at the park. Source: Author

- They are just too excited, and very loud most of the time
- They usually do not use the space the way it was intended; rather they use it the way that they want to use it, themselves. The picture below shows a teenage boy standing on and jumping from the grill.

Figure 26: This image show a teen boy on the grill trying to jump. Source: Author

- The majority of teens like to play basketball and other sports, mostly boys, but still there are some girls playing basketball as well
- Teens like to participate in social events
- Teenage girls like places to hang out and sit down and talk

Figure 27: View of the park while different activities are going on and the view of Lansdowne apartments in the background. Source: Author

Observations showed that teens are interested in their neighborhood park, especially in a poor neighborhood where parents may not be able to afford to take their children to other places.

There are two basketball courts and one baseball field in Horton Park. Basketball courts are along the edge of the park with a good view of the street next to the park and the surrounding area. Teens use these basketball courts most of the time. They can see other people; people can watch them as well.

Figure 28: Teens play basketball, while friends watch them. Source: Author

In the photo above, some of the teenagers (mostly boys) are playing basketball, while some of them (mostly girls) are sitting on the grass and watching others.

Figure 29: The front view of Horton Park. Source: Author

In the photo above, the basketball courts are on the right side. They are very close to the main street, and people passing on the street can see the teens when they are playing basketball.

There is a baseball field to the back of the park, but no one uses it most of the time. In terms of topography, the baseball field sits lower than the level of the rest of park; therefore the baseball field is somewhat hidden. Teens cannot watch other people and also they cannot be seen by other people, either.

Figure 30: Photo of the baseball field to the back of Horton Park. Source: Author

Figure 31: Teens by the baseball field. Source: Author

This photo shows the way that teens use the baseball field.

Conclusion:

Neighborhood parks can be great places for teens. Gathering spaces are essential for teens in neighborhood parks. In Horton Park, the basketball courts appear to play a very important role for teens, because teens -- especially boys -- gather and play basketball and teen girls gather around the basketball courts, where they sit and watch the boys and talk to each other.

Part 2: Analysis of interviews

The analysis was a challenge to interpret the essential experiences of the objectives of the study. The objective of the study in the first phase was to discover what people who have experience working with teenagers think about the design options for teens in neighborhood parks. To begin to identify teenagers' way of thinking and beliefs, the researcher first conducted a series of

interviews with professional people who have worked with teenagers in the city of Roanoke, Virginia, to identify the most significant factors of designing public spaces for teens. All professionals were chosen from the city of Roanoke, since the study site was located in Roanoke.

Section1: Analysis of the first phase of interviews (Interviews with professionals)

Each interview was recorded and later transcribed by the researcher. All names used in the descriptions throughout this study were randomly generated pseudonyms in order to protect the identities of the participants (See appendix C for IRB approvals).

The process of interpretation began with multiple readings of all transcriptions. This analysis is not an attempt to prioritize individual voices, but rather to reveal the general theme among the individual experiences of the multiple participants. The responses from participants to each question have been compared to each other. Some of them had similar responses to the same questions forming a theme and for some questions, they had totally different responses and suggestions.

In the following sections, the responses to these questions will be discussed. For many of the questions, it was typical for the respondents to give more than one answer to the question asked. In order to acquire more accurate results, all of these responses were recorded.

- How important are neighborhood parks for teenagers, and
- How teenagers use neighborhood parks?

This part of the interview mostly helped the researcher to understand the importance of neighborhood parks for teenagers and the different ways in which teens use neighborhood parks. Essentially this part of the interview serves to compliment the literature review in this research.

- What activities do teenagers engage in, in neighborhood parks?

Every participant mentioned that teens like to go online and use social networks such as Facebook. The second point that everybody mentioned was hanging out with friends from their neighborhood. Teens also like to participate in sports events.

All the participants agree that neighborhood parks help the social development of teenagers because that's a place where teens in a neighborhood can hang out with their friends or other members of their families. They can meet other people and socialize with people from different age groups. They mentioned that teens travel in the neighborhood most of the time in groups, so parks could be a great place for them to be.

Teenagers can have better connections with other teenagers through neighborhood parks. One of the problems that participants mentioned was that there is no place for teenagers at Horton Park. This raises the question; do teens really need a separate place just for themselves at the park? Or do they prefer be with other people and socialize in common spaces with other age groups? The participants who responded regarding the playground, said teenagers need something that has playfulness, but is not for children. This issue raises the dilemma that designing outdoor space for teenagers seems to require that they need a space which is neither for adults, nor for children.

One of the participants mentioned that teens need to feel they have ownership of the space. This participant said that teens need a variety of spaces; they need a mix of spaces with enclosed areas, and they like to sit and socialize, which is especially true of girls.
One of the participants believed that teens like seclusion, but at the same time they are interested in communal spaces. Something should draw teens to the park. They need a space for themselves without parents and smaller children.

The unique location of Horton Park makes it a safe place which is protected from vandalism. Teenagers like to have different options, but still need some sort of supervision. They like to get attention from other people and to be seen. Teens like organized activities in which they can participate by choice, but in which they are not required to participate. They like to be in a space just for themselves, and they like to claim the space…something just for them.

One of the participants also indicated that Horton Park needs multi-generational planning, where everybody can get involved in the activities at the park. Neighborhood parks can create a sense of pride for teenagers, in something that is just for their own neighborhood.

One of the participants indicated that the neighborhood park helps the social development of teenagers, because they need a place to be without their parents, but their parents are aware that they are there. This indicates that they need a place that is safe and secure, not far away from their homes, but where they are not directly under the control of parents nor any other people such as teachers or advisers (they used the word "non-parental area").

All the participants felt that teens need more organized events at the neighborhood park. They need activities that they can do in groups. Participants also all agreed that teens need supervision, but not a security-force. Neighborhood parks can be a destination for community events. Participants believe that teenagers need an inviting place; a place that they can congregate and socialize, and share information.

Participants all agreed that park improvement has a direct relationship with the social development of teenagers. All the participants believed that Horton Park has a unique location in the neighborhood, and has much potential for improvement.

Limitations:

Some of the limitations that participants have mentioned include the accessibility of the park; they said it is not walkable (easy to get to walking from home) and there is no distinct entrance for the park. Lack of public benches has been mentioned by all the participants. Individual responses have been summarized in tables in appendix B.

The results of these interviews and a comparison of the participants' responses have been gathered in the following tables.

The table below shows the similar suggestions that participants had during the interview:

Common suggestions:
• **Basketball court**
• **Wi-Fi**
• **Spaces for socializing and hanging out**

• **Biking and walking trail**
• **Connecting to the Roanoke greenway**
• **Incorporating water features in the park**
• **Exercise area**
• **More lighting for night time**
• **Make shaded spaces**
• **Food and vending area**
• **Spaces for events and playing music**
• **Sport facilities….sports that they can do in groups**
• **Bathroom**
• **Accessibility**
• **Outdoor stage (outdoor amphitheater)**

Table 1: Common suggestions by participants in the first phase of interviews. Source: Author

The table below shows the individual suggestions that participants had during the interview:

Different suggestions:
• **Make more inviting and friendly spaces for teenagers**
• **Interactive playground ….. It has playfulness but it is not for kids**
• **Electricity**
• **Skate boarding**
• **Running dogs**
• **Multi-generational planning for activities**
• **Transparency of the park**
• **Public art**
• **Outdoor galleries**
• **Non-parental areas**
• **Mix of enclosed spaces with sitting areas**
• **Variety of spaces**
• **Activity stage**
• **Outdoor exhibition spaces**
• **Stands**
• **Swimming pool**
• **Space just for events**

Table 2: Different suggestions by participants in the second phase of interviews. Source: Author

The table below is the interpretation of the previous tables. Participants had many different, interesting ideas and suggestions for improving Horton Park, but since Horton Park is only a neighborhood park, some of these suggestions would not be appropriate. Some of the suggestions were excellent for improvements to the park in general, but since this research focuses on design suggestions for teens, only the ones related to teens have been discussed. This table represents alternative design suggestions by professionals for designing Horton Park for teenagers:

Design Alternatives:
• **Exercise area**
• **Have some vending areas**
• **Make the park more accessible**
• **Make outdoor stage for teens to play music or have other events at the park/ activity stage**
• **Make the park more inviting and friendly**
• **More cover and shaded areas**
• **Outdoor galleries/ outdoor exhibition area/ stands**
• **Make interactive playground**
• **Have dog walk area**
• **Multi-generational planning for activities**
• **Make the park transparent and plain**
• **Interactive and public art**

Table 3: Design alternatives suggested by participants in the first phase of interviews. Source: Author

The above table helped the researcher arrive at design ideas for neighborhood parks in general and Horton Park particularly for teenagers. The next phase of data collection will be explained in the second phase of analysis.

The table below shows the interpretation of the interviews regarding design issues which should be considered for teenagers. The findings in this section are the basis for the second phase of data collection for this research.

Design issues for Horton Park for teenagers
Accessibility
Safety
Walkable space
Something that they can do in groups
A space where they can gather and hang out in groups
Welcoming space
Friendly space
Multi-generational activities
Transparency
Mix of spaces with seating area
Variety of spaces
Make different options for teens
Make space just for teens

Table 4: Design issues at Horton Park for teenagers. Source: Author

Summary of findings for the first phase of analysis:

The data collected in this part of research was very significant, since the second phase of data collection was based of the outcomes of the first phase of interviews. The analysis of the first phase of interviews resulted in many interesting and new findings. It was interesting to find out that even though teens do not like to be at the park with their parents or any supervisor, still they like to be seen by other people and have social interactions with other age groups. It was also interesting to find out that in reality little has been designed in public spaces like neighborhood parks for teenagers. The fact that they do not include the category of designing specifically for children and adults, raises the question, where is the spot for teenagers in public spaces?

Participants had many design suggestions for the study site, and many of these were used for the second phase of data collection; some suggestions included seclusion, mix of spaces, space just for teenagers and multi-generational planning for the neighborhood park. During the interviews the question was raised, do teens really need a separate space just for themselves at the park? This question will be examined in the next phase of data collection and analysis.

The analysis of the first phase of the interviews shows that these factors are important for designing neighborhood parks for teens:

- Friendly space

- Socializing

- Interaction

- Privacy

- Connection

These concepts, with suggested design alternatives, are discussed in the next phase of analysis.

Section 2: Analysis of the Second phase of Interviews (interviews with teenagers)

Throughout the second phase of analysis, the object of the study evolved to focus on the environmental attributes that contribute to the experiences identified and explained in the previous phase. Based on the results of the first phase of interviews with the focus on the research questions, experimental models were made for the second part of data collection and analysis.

Working with teenagers usually is harder than working with other age groups. Thus, the researcher attempted to make her experiment interesting for teenagers. The interview questions were designed to be as short as possible. Study models (physical models) were created to help teen respondents understand the situation. On the day of the interview, teens demonstrated that they were excited and asked questions regarding why the researcher was doing this study, what was her major, and some of them also were interested in how the researcher made the models and asked some questions about that.

Three alternative designs were shown for this site that were based on the professionals' responses. The models were generated to be simple and low in details. The reason was that the researcher did not want to create confusion for the participants and wanted to emphasize the most important features of the design. The lack of detail helped focus attention at the level of input that was needed.

The interview was conducted in the West End Center in the city of Roanoke. The West End Center is an organization that serves 200 children each year who live in many of Roanoke's disadvantaged neighborhoods. Since this research focused on the parks in poor neighborhoods, the teens in this Center were a good sample for this phase of data collection.

After making all the arrangements with this Center and passing all the criteria for the IRB, the researcher was able to make a reservation for a workshop interview with 15 teenagers, including 8 girls and 7 boys, between the ages of 12 and 17, in a classroom with their teacher. At first their teacher explained to them the process of the interview and its goals. The teacher explained that participation was voluntary and there was no obligation for the teens to participate; luckily everybody in the class agreed. Actually, they were excited that they would do something different in the class, rather than their routine schedule. Fortunately, the participants did not have difficulty in understanding the models, since they all were familiar with Horton Park.

Section 1: Explanations of the models

The models were created to examine the information researched about the teenagers' needs in public open spaces and comments and responses generated in the interviews for designing neighborhood parks for teenagers. Three different design options were examined through these models.

Model A:

This model was made with the intention of emphasizing the following concepts:

- Friendly
- Welcoming
- Socializing
- Interaction

Elements and spaces designed for this model include (figure 32):

- Entrance: the reason for creating an entrance was to make the park more welcoming for teens. When there is an identifiable entrance, the teens would feel that they are more welcomed to use the space.

- Climbing tower: the climbing tower has been designed to see if teens are interested in having a vantage point where they can see everything in the park; in other words, a place where they can observe other people. The tower is located at the back of the park, because it provides a good view of the park and its users.

- Stage activity: stage activity can be a great place for teens to get together and socialize with each other. It also creates a friendly place for teens to hang-out.

- Combination of seating areas: in order to respond to the factors mentioned above, different seating areas were designed for the park, and teens were asked about their preferences about sitting in these areas.

Category of spaces in Model A	
Area A	seating area close to the entrance and by the street
Area B	seating area between the playground and the basketball court
Area C	seating area in the back of the park by the tower and stage activity in the area dedicated just for teens

To be seen Show off
Interaction with other age groups
To spectacle Socializing, claim the space, to be

Table 5: Category of spaces in Model A (also see figure 33). Source: Author

The following photo of Model A show the top view with all the elemants that have been explained previously.

Figure 32: Model A top view. Source: Author

The following photo shows Model A in plan view with category of spaces previously explained.

Figure 33: Category of spaces in Model A. Source: Author

Figure 34: Model A: Proposed entrance area to Horton Park.
Source: Author
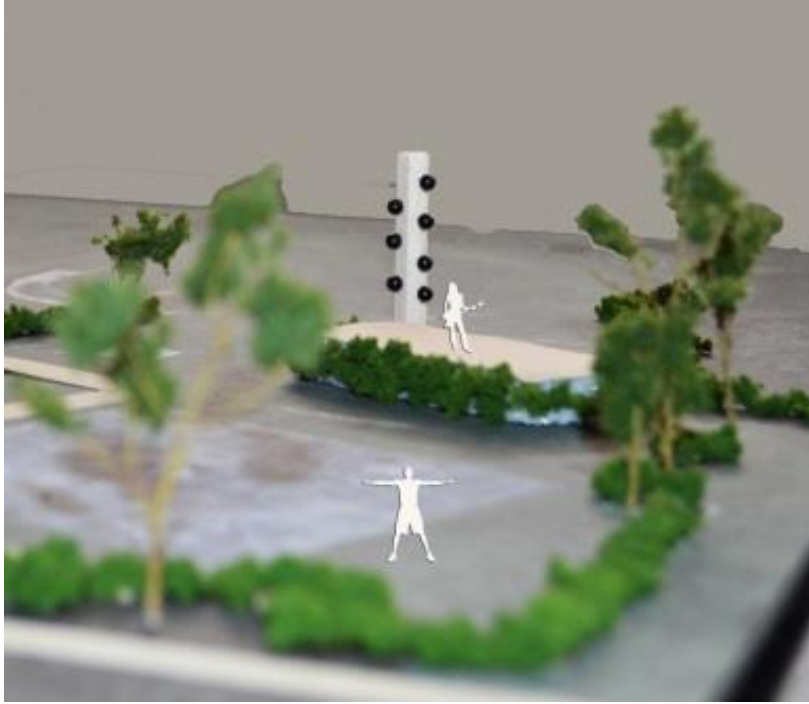
Figure 35: Model A: View of the proposed activity stage and climbing tower.
Source: Author

Figure 36: Model A: View looking into Horton Park. Source: Author

Model B:

This was been created with the intention of emphasizing the following concepts:

- Privacy
- Connection
- Accessibility

Based on the first phase of analysis, a problem with accessibility of the site was identified. To address the problem in this concept a sidewalk was proposed around the park to provide better pedestrian access. Different paths were designed in order to make better connections among different spaces in the park.

An area was designed in the front of the park (area A). This space was designed just for teens. The purpose of having such a space in the park was to study if they prefer a separate space just for themselves, or if they prefer to share the space with other age groups.

Area B in the back of the park was designed in order to study the concept of privacy -- to see how much teens prefer to sit in the hidden area where other people cannot watch them and they can have more privacy.

Area C in this model was the space by the edge of the park and close to the parking lot. The reason for designing this space was to examine how the spaces on the edges of the park are desirable for teens.

Category of spaces in the Model B		
Area A	Seating area close to the entrance and dedicated just for teens	→ Claim the space Independence
Area B	Seating area in the back of the park which is very hidden by trees and vegetation	→ Privacy Seclusion
Area C	This is an area by the edge of the park and close to the parking lot	→ To watch others, to have control of the space

Table 6: Category of spaces in the model B. Source: Author

Following photo shows the model B from a top view with all the elements that were explained previously.

Pathway connection from library to the park

Hidden space in the backside of the park (space B)

Seating area

Space in front of the park dedicated just for teens (space A)

Pathway connection

Sidewalk around the park

Figure 37: Model B top view. Source: Author

Figure 38: Category of spaces in Model B. Source: Author

This photo shows Model B in plan view with category of spaces previously explained.

Figure 39: Model B: Shows the spaces to the back of Model B where there are more trees and vegetation and where it is more hidden compared to other spaces (category-space B). Source: Author

This photo shows the space B in Model B, which is the space in the back of the park and is more hidden and dedicated for teens. The purpose of designing such a space for teens is to provide more privacy and opportunities to meet other teens.

Model C:

This model was created to illustrate the existing site of Horton Park. The intention of making this model was to discover if teens prefer the existing site compared to the other designs and to compare the existing site to the suggested alternative designs. This procedure has the advantage of providing actual images for different situations. Consequently, participants had the opportunity to look at all the different situations, and at the same time to do comparisons.

This way, the researcher had the opportunity to explain different design ideas to the teens and they had the model in front of them to better understand the situations that each design would provide for them. Therefore, the design could be experienced both visually and verbally.

This photo shows Model C from a birds-eye view. The model is of the site as it exists with no proposed design changes to it.

Figure 40: Front view of Model C. Source: Author

Analysis of responses to Model A:

With the diversity of spaces in Model A, the first question asked was, "Which area do you like more in the park?"(among space A, space B and C). There was no clear consensus regarding which area the teens preferred in Model A. The result was interesting because all the spaces received almost the same ratio of percentage, as you can see in the table below.

Number of Participants	Favorite hangout Area	Gender
1	A	B
2	A	G
3	A	G
4	B	B
5	C	B
6	C	B
7	B	B
8	A	G
9	C	B
10	B	B
11	C	B
12	B	G
13	A	G
14	B	G
15	C	G

Table 7: The most desirable spaces in Model A by individual participants. Source: Author

As the table shows, among the 15 teen participants, 5 selected space A, 5 space B, and 5 space C. It was perceived that all the different areas in this model had the same values for the teens. In the response to why they want to hang out in space A, they said because it is close to the entrance and sidewalk. Regarding the entrance of the park, the majority of the participants mentioned that they like the entrance and they would get to the park from the entrance. In fact, the entrance had an influential role in choosing a place for seating or to hang out. The diversity of spaces in Model A helps with the integration of a diversity of users in the park.

Analysis of responses to Model B:

As Model B focused more on the personalization of spaces by providing space dedicated just for teens, the majority of respondents said that they prefer to hang out in space A. Some of the teens also mentioned that they prefer space B, and just one person said he prefers space C. In response to why they would like to hang out in this space and why they liked it, they said because it is next to the parking lot and by the edge of the park and they can easily run away.

Number of Participants	Favorite hangout Area	Gender
1	B	B
2	A	G
3	A	G
4	A	B
5	C	B
6	B	B
7	B	B
8	B	G
9	A	B
10	B	B
11	A	B
12	A	G
13	A	G
14	A	G
15	A	G

Table 8: The most desirable space in model B by individual participants. Source: Author

Analysis of Responses to Model C:

- Comparisons among models A, B and C

To answer the question "Which park do you like the most?" 53.3 percent responded they preferred Model A; 26.6 percent answered Model B and 20 percent answered Model C, which was the model of the existing park.

Number of Participants	Favorite Model	Gender
1	B	B
2	C	G
3	A	G
4	B	B
5	A	B
6	B	B
7	A	B
8	A	G
9	A	B
10	A	B
11	C	B
12	A	G
13	A	G

14	B	G
15	C	G

Table 9: The most desirable model selected by individual participants. Source: Author

Model A: Many of the participants said they would prefer to hang out in space A in model A, but one of the features that they preferred in model A more than other models was stage activity. Participants found the stage activity very interesting. They said that's the place that they could get together and sit and listen to music and have fun with each other. In general, all of them mentioned that there are more things to do in this park; you can play, sit with your friends, and watch people.

Model B: participants who declared they liked model B more than the other models believed that there are more spaces to meet their friends in this model, and they would prefer to hang out in this park. Some of the participants pointed out that there was more privacy and therefore fewer people and less noise in the back of this model.

Model C: Teens that declared they like the existing model more than other models believed that there is more open space in this model. There is more grass and wider spaces compared to other models.

Section 2: Summary of analysis of the second phase

When the researcher asked the participants where their favorite area to hang out was in all the models, all the participants mentioned, enthusiastically, that it was the basketball court. One of the reasons for that preference could be that most of the teens are interested in playing basketball, but another reason was the location of the basketball court. Because the basketball court is located in the front of the park, it has a good view where teens can see other people in the park and street. Also, other people can see them while they are playing or hanging out there.
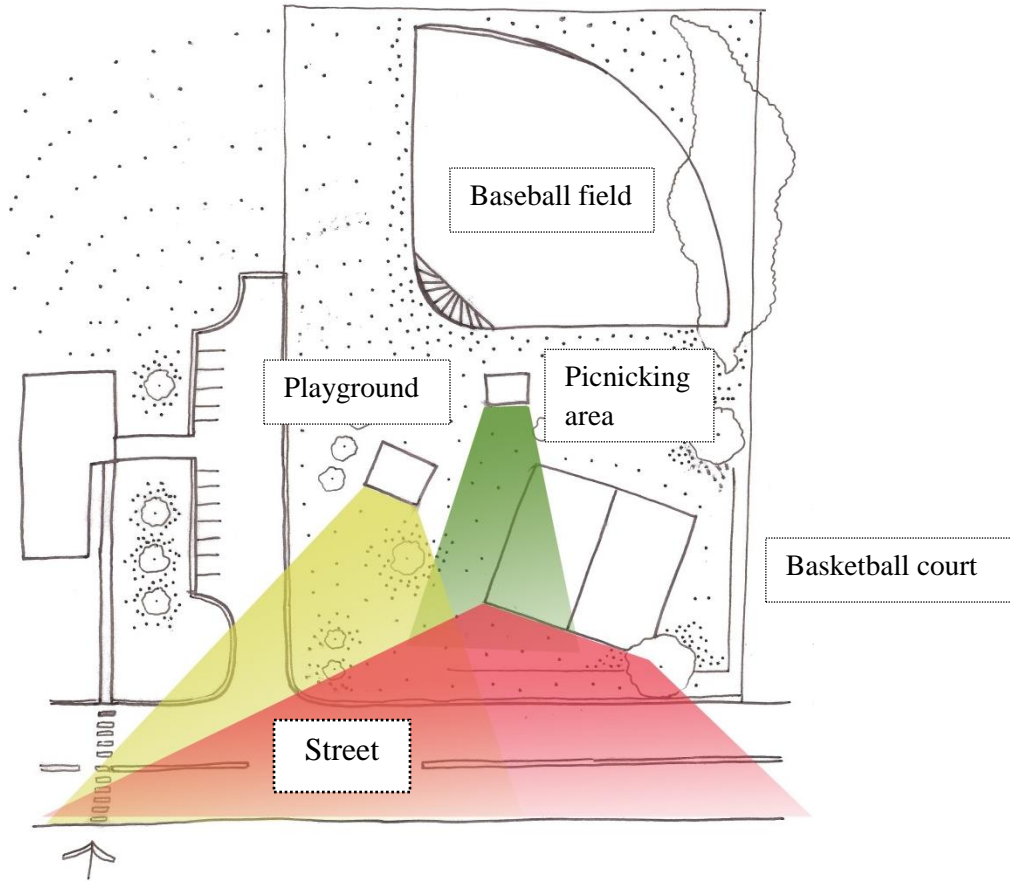
Figure 41: Comparison of view of the basketball court compared to other spaces at Horton Park. Source: Author

The examples of the basketball court and stage activity show that for designing public spaces such as parks for teens we need to combine the areas for specific activities with seating areas and hang-out spaces. There is a need for a variety of spaces that work together. In other words, there is a need to create a diverse, but cohesive environment.

Public spaces perform as a stage for teenagers. As a result of the responses to Model B, we can see that the majority of the participants wanted to hang out in the spaces in the front of the park where they can be seen. That also gives them the feeling of security sometimes, especially for girls.

Teens liked spaces close to the parking lot and entrance of the park because they could easily run away. In addition, teens in this particular age group (12-17) need to have some sort of security in some areas of the park where people can see them.

Interviews conclusion:

The first phase of interviews was carried out with professionals who work with teens to discover what teenagers need to have in public open spaces. The findings from the first phase of interviews were implemented in experimental models created by the researcher for the second phase of interviews with teens. In the second phase of interviews, questions were asked of teenagers about their desires for public open spaces with reference to the models. All the interviews were used to better understand teenagers' preferences in the features of a neighborhood park. Through conducting the interviews, it was possible to discover more about what spaces the teenage group would need in their neighborhood park. The responses received in the first phase of interviews with the professionals was supported by the literature and was done in order to prepare for the second phase of interviews, which was the main part of this study.

Interviewees in the first phase of interviews presented many new ideas to develop the park for teenagers, such as having water features at the park, providing a Wi-Fi spot at the park, a large playground, installing vending machines, and adding more sports facilities. One interviewee mentioned a skateboarding space for teens, while in the second phase of interviews with teens none of them mentioned that. Since Horton Park is a neighborhood park, there is a clear definition of its function through bringing the neighborhood community together to socialize and negotiate with each other. The design suggestions of the professionals that could potentially be implemented in the concept of Horton Park were the basis for creating the models for the second phase of interviews with teens.

The findings from the literature and the first phase of interviews were depicted through the use of physical models. The reasons for making models was to help teenagers participating in the

interview better understand the purpose of the interviews and to more easily recognize the differences between different design options.

The findings from the first phase of interviews indicate that some professionals believe that teenagers need more seclusion. Therefore, secluded and enclosed spaces were incorporated in the models for the second phase of interviews. However, there was a conflict with what was stated in the interviews' first phase and what was discovered in the second phase. Most teenage participants (not all of them) specified that they prefer vast open spaces rather than secluded hidden spaces.

It is interesting to note that the teenagers who participated in the interview did not see the need to have a space dedicated especially for them, just the need for more entertaining spaces in general. These results show that teenagers may not want to separate themselves from other age groups in public spaces. As long as they feel a sense of acceptance in public spaces, they do not prefer to be separate from other age groups. This finding is supported by the fact that eight of the interviewees out of fifteen stated that they preferred Model A compared to Model B (in model B special spaces were designed just for teens).

Teenagers participating in the second phase of interviews seemed to be concerned about their contextual location within the space, particularly with regard to proximity to the entrance, sidewalk or parking lot.

Both professional people and teenagers mentioned pedestrian accessibility and comfort as significant factors in the use of public spaces. Views available to the teens were an important factor for them to determine where to hang out. The view of the street and other people, or in other words, a view of places that people pass through was more attractive for teens. Nevertheless, there were some interviewees who preferred to be in a space in which there was less noise, and where they could be away from other people.

Furthermore, all participants in the first phase pointed out the importance of good maintenance and cleanliness of the spaces, which seemed to be an issue for teenagers participating in the second phase of interviews as well.

Relating the interview results to the thesis questions: what are the aspects of public open spaces that could enhance the social development of teenagers? And what is the level of required privacy for this age group? It is a finding of this research that patterns exist within specific user ages based on the location and planning of the spaces in the neighborhood park. It is also a finding of this research that there is no significant need to design spaces in public open spaces dedicated in particular to teenagers, but it is better to plan for parks with more emphasis on designing the spaces close to the entrances or parking lot to increase the use of the park by teenagers.

This finding is supported primarily by the fact that when the interview subjects were asked questions regarding the gathering spaces with their friends at the park, the majority of answers were that they preferred the spaces in the front of the park close to the street, entrance and parking lot. Correspondingly, in the comparisons that they made among all the models, more than half of the participants agreed with Model A.

Chapter 5: Implications and Recommendations

As was discussed in the previous chapter, teenagers prefer to hang out with their friends in spaces more in the front of the park and by the edges of the park, close to the entrance, or close to the parking lot. Based on these findings, the reason is that teenagers in these spaces feel they have control of the space and they can leave the park whenever they want. Another reason is that in these spaces they feel secure and at the same time, they can display (show off) their talents, their clothes, and their hair styles.

Findings show that the need for privacy for teens will be achieved as long as their parents are not available in the park. Most of them are not interested in going in the spaces in the back of the park unless their parents are present in the park. Especially, most of girls did not show an interest in hanging out in the back of the park, which is more hidden.

In the example of Horton Park, the basketball court was one of the most desirable spaces in which the majority of teenagers showed the most interest, to hang out, which may be because the basketball court has all of the requirements that were revealed in the findings. It is close to the front of the park, and close to the sidewalk and street. It also allows teens to see (view) as well as be seen and is a safe place for teens.

It could also be said that the basketball court offers some level of privacy. Privacy for teenagers means that no one is supervising them. If they are in a space where their parents and teachers are not present, they have the privacy that they need.

Part 1: Implications

Section 1: implications of the Research Findings

The findings of this research suggest several implications regarding both the assumptions contained within the literature and interview analysis.

Based on the findings of this study, in the planning for public spaces for teenagers, there is no need to design a specific space dedicated for teenagers; rather there is a need to consider teenagers in designing of public spaces. This means that when we want to design a space for teens' specific needs, it does not have to be a separate space as long as it meets their other needs. In designing spaces just for teenage groups, we put them in a separate category, while the goal of public open spaces such as neighborhood parks is to bring the people in the community together.

Designers should consider paying more attention to designing the spaces by the edges of public spaces and close to the streets, entrances, exits, parking lots and sidewalks. When applying this priority to the design of neighborhood parks, in particular, designers should pay more attention to the design of the marginal spaces. This means the spaces close to the parking lot or the spaces close to the entrances of the park. These spaces are the best spaces for teenagers, but other age groups may use them as well. These spaces may be too close to the traffic of streets or parking lots for the safety of children, however.
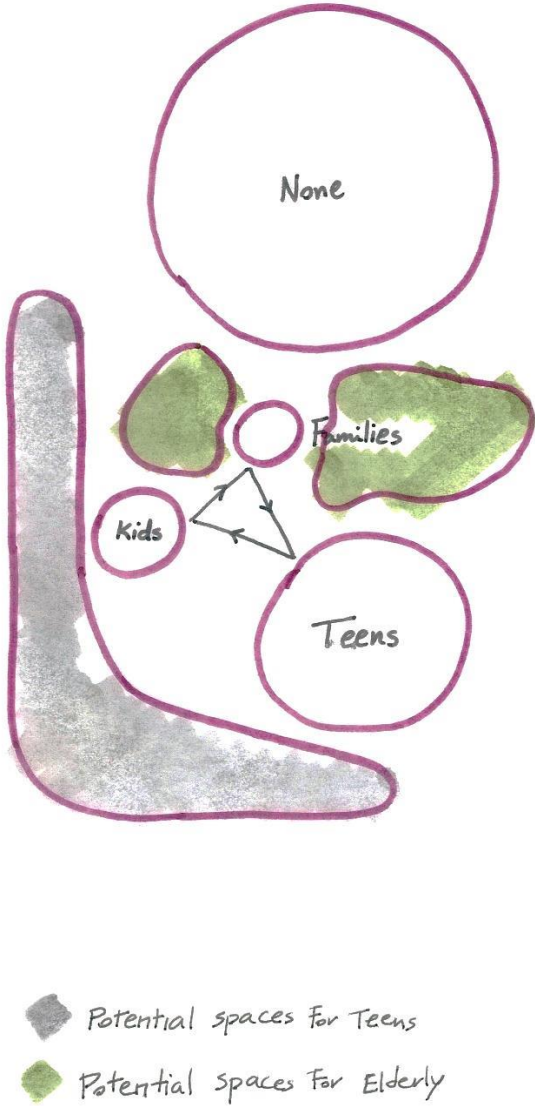

Figure 42: This diagram shows the priority of spaces in Horton Park for teens, kids and families and elderly regarding the existing spaces in Horton Park. Source: Author

Those marginal spaces may not be appropriate or comfortable for older people as well, because usually there is too much noise in those spaces, which may make them uncomfortable, compared to more peaceful areas.

The findings of this research hold implications for the broader conversation regarding design for teenagers. This research has demonstrated that providing appropriate public open spaces for teenagers has an influential impact on the social development of teenagers.

Based on the overall findings, it is not the public space itself that is important regarding social interaction; rather it is the type and quality of spaces that are designed in the public realm in neighborhood areas.

It is important to understand that the findings that have emerged from this research may not be applicable to public open spaces in larger cities. This is because the user populations of different public open spaces vary considerably in cities with larger populations.

Section 2: Research constraints and challenges

There are many challenges when doing research in a multidisciplinary subject. Unfortunately, there is very limited literature about the subject of teenagers and outdoor environments, and most of the literature is old. Researchers have discovered that the conception of the public teenage group is usually as a trouble-maker group and even in the field of psychology, most of the research focuses on juvenile delinquency.

There is very little interdisciplinary work that makes connections among fields. An interdisciplinary approach connecting the psychology field with urban planning and landscape architecture is needed. Interdisciplinary work could provide additional insights and more profound theories about the importance of teenage experiences in outdoor environments.

All of the factors mentioned in this research are for young teenagers ages 12 to 17. It does not account for older teenagers. As teenagers get older, they also change psychologically, have different needs, and also become more independent once getting a driver's license.

The sample used in this study was chosen for a special study area in Roanoke. Even though it worked for this thesis, for future studies with a larger sample and studies of similar sized cities would be better. This research did not specify results for different genders. Teenage boys and girls have different needs, and it would be better to put them in two different categories and specify their different needs, which could be possible with a larger sample size.

Part 2: Research Conclusion

This research develops findings that influence the design of public open spaces with emphasis on neighborhood parks for teenagers by focusing on that age group, with the goal of providing social and physical benefits through neighborhood parks. The purpose of this research is to provide insights into how landscape architects and urban planners may design neighborhood parks that better meet the needs of teenagers.

As most current research on developing public open spaces has concentrated on the age groups of children and the elderly, this research fills a gap in addressing teenage needs with an emphasis on social and privacy needs through neighborhood parks. This research argues that public spaces can enhance the quality of life of neighborhood residents by focusing on better planning and considering users' needs.

Neighborhood parks are among the most popular spaces in the public realm and can serve as one of the first public spaces that teenagers will use. Neighborhood parks can be an opportunity for teens to start being independent from their parents. A neighborhood park could be a place where teens can begin to develop their first social interactions with people outside of their families and schools.

This research provides guidance on how we can better design these spaces. The design findings presented in this research provide planners and site designers with an effective tool to determine the design of spaces for teenagers in neighborhood parks.

Based on the findings of this research and the suggested relationship between design attributes in neighborhood parks and teenagers' use of space, this research verifies that providing public spaces is tied to increased opportunities for the social development of teenagers.

Responding to the users' characteristics, criteria were developed to create the public open space qualities that satisfy individual needs, with emphasis on teenagers' needs. This research also indicated that beyond the provision of basic needs, what the teenage group wanted most was a sense of security, acceptance and positive identity, in places where they could socialize, play with friends and find interesting activities to join or observe.

It is hoped that this research will provide insights as to the needs of teenagers in public spaces in the neighborhood. In addition, it is possible that the methods used to conduct this research could be modified and applied to the study of other public open spaces in other neighborhoods, so that landscape architects and urban planners could evaluate these spaces in existing urban environments in terms of their use, in particular, by teenagers.

This information then could be used to improve existing spaces, and therefore could improve the quality of life of all the residents of a neighborhood. The primary implication of the findings of this research for landscape architects and urban open space designers is that this research could help them in designing future public open spaces for teenagers.

Appendix A:

Interview protocol for the first phase of interviews

Virginia Polytechnic Institute and State University

This interview examines the importance of neighborhood parks for teenagers to understand how improvement of neighborhood parks can help the social development of teenagers. The following interview protocol is divided into two parts. The purpose of the first part is to find out how important neighborhood parks are for teenagers and how teenagers use neighborhood parks. The second part includes open-ended questions to identify what can be done to improve neighborhood parks for teenagers and what are the opportunities and constraints. Both parts of the interviews were conducted with professionals in the city of Roanoke who work with teenagers.

Part one

1. In your own words describe who you are and how you have worked with teenagers in the past.
2. In general, in what types of activities do teenagers participate in their spare time?
3. In general, where do teenagers hang out in most neighborhoods?
4. How often do you believe teenagers use neighborhood parks?
   a. Are there particular times of day and for how long do teenagers use parks?
   b. How do teenagers benefit from using parks?
   c. Are there any problems associated with teenagers using parks?
   d. Are you familiar with Horton Park?
      i. If yes, are these same things true for Horton Park?
      ii. Is Horton Park different in any way from other parks that teenagers use?
5. What activities do teenagers engage in in neighborhood parks?
   a. What activities do they engage in in Horton Park?
      i. Describe the types of teen social behavior or events for teenagers that happen in Horton Park.
6. Who do teenagers visit neighborhood parks with?
   a. Please describe them (number, age, sex and etc.)?
7. Do teenagers interact with adults in neighborhood parks?

        a. How so?
8. Where do teenagers gather in the park?
        a. Where do they gather in Horton Park?
        b. What do they do in these areas?
        c. Which areas do teenagers in neighborhood parks use the most?
             i. Is this true for Horton Park?
9. How do most teenagers get to the park?

Part Two

1. What activities or things could be provided that would enable teenagers to better use neighborhood parks?
2. Do neighborhood parks enhance social interaction of teenagers? If so, how do neighborhood parks enhance daily activities of teenagers?
3. What are the greatest limitations to increasing teenagers'use of neighborhood parks?
4. Does the presence of teenagers in a neighborhood parks pose any problems?
        a. If yes, what are the problems?
        b. Are there additional safety concerns for teenagers?
5. Are there other places in the neighborhood where teenagers like to gather?
        a. If so, how do they use them (how long, how often and for what purpose)?
        b. What is needed that is not there (particularly about Horton Park)? (for example, different benches, bigger playground, a place for skateboarding, vast open spaces, small open spaces, more facilities, more recreational spaces, etc)
6. What do you wish to have in neighborhood parks to make them a better place for social activities and events for teenagers?
7. What could a community gain from making desirable public spaces for teenagers?
8. What can a community do to develop better neighborhood parks for teenagers?
9. If you could do one thing to make Horton Park a better place for social activities and interaction for teenagers what would it be? Please describe it.

Design recommendations by each participant (part one responses):

1
Sports events: basketball
Horton park needs love
Cover
Destination for community events
Benches near basketball courts
Wi-Fi, Hot spot
Inviting space
Make a place for socializing and hanging out
Include biking and walking trail from urban sidewalk that they can get there without crossing line
Water fountain
Accessibility
Public benches
Better maintenance
Sports facility
Easy access to spaces
Clean gathering spaces
Hammock
Something that has playfulness but it is not for kids
Something that brings them back to park
Beautification
Fitness fair

2
Hang out spaces
Wi-Fi
Basketball court
Water fountain, cold water
Community center
Bring boys and girls club
Community garden
Make more shade spaces

| Big playground |
| Water features |
| Have electricity |
| Tennis court |
| Bathroom |
| Football, ping pong |
| Something that they can do in groups |
| Connecting the park to the Roanoke greenway |
| Organized activities |
| Supervision but not security force |
| Walkway from the Melrose library to the park |
| Welcoming space |
| Food |

3
Skateboarding
Wi-Fi
Trail for biking and jogging
Tree cover
Basketball court
Stage for playing music
Teen sports
Running dogs
Multi-generational planning for activities at park
Water features, splash waters
Lighting for night time
Better access visual sidewalk
Transparency of the park
Athletic facilities
Drinking fountain
Improve the basketball facilities
General seating
Larger shelter
Food, vending, snacks
Organized community group
Greenway movement
Public art
Rain garden

4
Online life
Water park
Lighting
Trees
Sports…Frisbee
Outdoor galleries
Non-parental area
Treating teens like people not kids
Walking trails
Nice seating areas
Playground
Mix of enclosed spaces with sitting areas
Variety of spaces
Communal space
Sports league
Live music
Activity stage
Art walk
Outdoor exhibition
Covered area
Water features
Stands
Something that draws teenagers to the park

5
Exercise area
Spaces for socializing
Swimming pool
Basketball court
Big open areas
Lights for night time
Transportation to the park
Bathroom
Good maintenance

6
Basketball
Hang out spaces
Physical activities
Park benches
Organized activities at park

Skateboarding and bicycling
A space just for events
Eating, food, vending
music
Small outdoor amphitheater
Swimming pool
Teens like to be in a space for themselves
They like to claim the space
Shaded area

Appendix C:
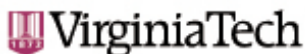
VirginiaTech

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website http://www.irb.vt.edu

MEMORANDUM

DATE: June 6, 2013

TO: Fatemeh Saeidi-Rizi, Patrick Miller

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)

PROTOCOL TITLE: Teenagers and Public Open Spaces

IRB NUMBER: 13-444

Effective June 6, 2013, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 6,7**
Protocol Approval Date: **June 6, 2013**
Protocol Expiration Date: **June 5, 2014**
Continuing Review Due Date*:   **May 22, 2014**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

VirginiaTech

MEMORANDUM

DATE: September 17, 2013

TO: Patrick Miller, Fatemeh Saeidi-Rizi

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)

PROTOCOL TITLE: Teenagers and Public Open Spaces

IRB NUMBER: 13-793

Effective September 17, 2013, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 6,7**
Protocol Approval Date: **September 17, 2013**
Protocol Expiration Date: **September 16, 2014**
Continuing Review Due Date*: **September 2, 2014**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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