IMPROVING PUBLIC HOUSING THROUGH APPLICATIONS OF DEFENSIBLE SPACE

by

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(Under the Direction of Pratt Cassity)

ABSTRACT

The U.S Housing Act of 1937 was intended to provide "safe, decent, and affordable" housing opportunities for low-income Americans. For many, public housing was a vital element in the opportunity to live in a safe and secure environment. Constructed in response to an increased housing need, many of the public housing projects were designed using similar architectural styles and design patterns to produce a uniform living environment. Designed to serve as temporary housing and a suitable living environment for families, public housing has evolved to provide permanent housing for many of America's families.

Today, much of the public housing stock has fallen victim to social decline and deteriorating physical structures. Crime and violence have become common factors affecting the living conditions in these communities, producing an unsafe and unsecured living environment. The living conditions in these communities have severely declined to create deplorable housing opportunities and unsuitable socio-economic advancement. The physical setting is an essential factor in the current status of America's public housing. The manipulation of the built environment to create safer living conditions is best examined through principles of defensible space. Based on opportunities for residents to control and monitor their living environment, defensible space incorporates elements of the physical setting in relation to community building.

Through extensive review of relevant literature and detailed case study analysis, the research conducted examines the application of defensible space principles in an effort to produce safer public housing. The research on defensible space is intended to demonstrate that the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime in public housing projects.

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B.S., Auburn University, 1999

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

MASTER OF LANDSCAPE ARCHITECTURE

ATHENS, GEORGIA

2006

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May 2006

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CHAPTER 1
INTRODUCTION

Crime has always been important in determining quality of life. American society longs to live in safe, secure neighborhoods, yet residential concerns have led to extreme measures in crime prevention. Whether installing a gate or wall around a community, the degree society will go to prevent criminal activity has often destroyed the sense of neighborhood community. Unlike days past when people sat on their front porches, children played in neighborhood parks, and adults took leisurely evening walks, neighborhood perceptions of today are often focused on neighborhood isolation. Some residents are fearful of their surroundings. Making for an unhealthy environment, both physically and socially, resident fears must be addressed.

Perhaps one of the most dire residential communities needing assistance in reducing crime is public housing developments. Stricken with crime and fear of victimization, many public housing developments are becoming havens of illegal activity, rapidly descending in a downward spiral of social and physical neighborhood decline. As physical conditions worsen, the quality of life diminishes. While many factors contribute to crime in these areas, the physical environment cannot go unacknowledged as an integral element in attracting and deflecting crime.

Many crime prevention techniques have been applied to deter crime and decrease fear of victimization. From law enforcement and community policing to social agencies and neighborhood organizations, various methods and strategies have been used to reduce crime in particular settings. While realizing the social circumstances of criminal activity, several theoretical explanations on crime have focused on crime decision by location and the physical environment in which a crime occurs. One approach to deterring crime in neighborhoods is defensible space planning. Based on elements of modifying the physical environment to alleviate criminal activity, defensible space demonstrates that proper design and effective use of the built environment can lead to a reduction in the incidence and fear of neighborhood crime and improve the quality of life. Based on the

idea that communities, neighborhoods, individual homes, streets, and parks can be made safer through the application of design principles, how can design impact and promote neighborhood safety?

I intend to focus my research efforts on deterring crime and building a sense of community in public housing developments. Although there are many factors to consider, I plan to examine the affects of design principles in promoting a sense of neighborhood safety and developing a sense of community. Examining the components of the physical environment which correlate with an increase or decrease in criminal activity, I intend to demonstrate that proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime in public housing projects.

Producing a structured, systematic, and clear analysis of the design principles involved in defensible space planning, I will examine how these elements are applied in public housing development. I plan to look at elements of crime, various crime prevention strategies, and the application of physical design concepts. I will provide a detailed overview on the subject matter, stressing the importance and evolution of crime prevention, and then initiate discussion on the application of crime prevention strategies in public housing developments. In preparation for future analysis, my research will include previous efforts to provide for safer public housing projects through case studies and analysis.

The review of relevant literature lays the foundation and background research to further narrow my concentration of study to focus on the characteristics of the physical environment that escalate or decrease levels of crime. Thoroughly analyzing three public housing projects, I will present detailed case studies and identify the physical attributes that correlate with producing or limiting the occurrence of criminal activity. Developing a series of systematic research questions, I will demonstrate that proper physical planning and design of the built environment can lead to a reduction in the fear and incidence of crime and improve the quality of life in public housing projects.

CHAPTER 2
REVIEW OF RELEVANT LITERATURE

Crime: The Great American Problem

Crime and fear of crime have a dramatic and devastating impact on peoples' every day lives. In every major American city, there are daily reports of street crimes and violence against persons. Whether attacks on joggers in parks, abductions of students in school yards, or drive-by shootings in neighborhoods, criminal activity has detrimental effects on urban livability. When the places traditionally associated with refuge and retreat – our homes, neighborhoods, and workplaces – become the scenes of violence and threat, crime generates the perception that no one is safe and no place is safe. Retreating into fortified homes and communities, the American public has sought to combat crime by destroying communities. Perceptions of insecurity and consequent isolation have produced a social environment dominated by crime. Living with crime has become a detrimental adaptation to American society. In attempts to offer solutions to this ailing national problem, it is important to identify and discuss the social and physical implications of criminal activity.

Crime and Fear of Crime

Crime is defined as "an act committed, injurious to the public welfare, for which punishment is prescribed by law (Webster's Dictionary, 5th ed)." Many types of behavior define crime in everyday life. From vandalism, graffiti, and shoplifting to assault, sexual violence, and murder, criminal activity is a constant violation of personal and property rights. Modern forms of criminal violence, characterized by their randomness and violation of public spaces in urban areas, have evoked sentiments of social unrest and deterioration. Whole neighborhoods are being taken over by drug and gang activities. Neighborhood and community safety is decreasing as criminal activities increase.

In 1990, 2.3 million Americans were victims of violent crimes; the homicide rate nationally in the United States was 9.4 victims per 100,000 inhabitants. Reported forcible rapes increased 24% and aggravated assaults increased 59% between 1981 and 1990 (Crowe 1991). A 1991 U.S. Senate judiciary committee report concluded that the United States was the most violent of all industrialized nations (Wekerle and Whitzman 1995).

In the mid-1990s, crime rates began to decline. In 1997 the U.S. Department of Justice released the results of its "National Crime Victimization Survey" which tracked crime statistics between 1994 and 1995. The survey indicated that the national crime rate was decreasing. Violent crime (homicide, robbery, sexual assault, and aggravated assault) fell over 12%. Property crime (including burglary, theft, and auto theft) was down by 9% (Brennan and Zelinka 1997). Although statistics show a reduction in crime rates, 90% of Americans are under the impression that crime has worsened (Blakely and Snyder 1998).

While the rate of criminal activity may express a downward trend, fear of crime amongst the American public continues to increase. In dealing with neighborhood and community safety, fear of crime is as important an issue as crime itself. Fear of crime and victimization is often associated with fear for one's personal safety. Many fear crime or harassment in public when alone, especially after dark. Women are generally more fearful of crime and are also victim to certain types of crime, such as sexual assault, domestic violence, and street robbery (Wekerle and Whitzman 1995).

Levels of victimization, vulnerability, and social control generally measure perceptions of fear. Victimization refers to experiencing crime or knowing someone who has, whereas vulnerability refers to the likelihood of becoming a victim due to personal characteristics such as socioeconomic level or gender. Social control emphasizes the breakdown of local social community bonds in response to the threat of criminal activity (Tijierno 1998). For many, fear of crime is partly dependent on personal experience. Whether witnessing acts of vandalism or knowing someone who has been a victim, fear of crime escalates one's perception of personal safety and security. As a result, fear of crime keeps people off the streets and out of parks, plazas, and other public spaces. Fear, often unrelated to actual levels of crime or risk of becoming a victim, becomes a self-

fulfilling prophecy as residents withdraw into their homes, abandon their neighborhoods, and become passive observers as the surrounding community deteriorates (Fleissner and Heinzelmann 1996).

Crime and Neighborhood Decline

Crime and fear of crime have numerous impacts on residential communities. Levels of crime have led many Americans to consider community safety as a critical issue when selecting a place of residence. People like neighborhoods that are safe, clean, and stable. Crime disrupts neighborhood stability, often leading to neighborhood decline and deterioration. As crime increases, neighborhood quality decreases. Community bonds are broken as social networks collapse. Extensive research, particularly the "broken windows" hypothesis, links perceptions of physical deterioration and social incivilities with fear of crime and other conditions relevant to neighborhood viability (Taylor and Harrell 1996; Tijierno 1998).

Neighborhood Quality

Feeling safe and the visual representation of a residential area without obvious physical decay are prerequisites for high quality neighborhoods. Crime and physical deterioration are the most critical factors associated with poor neighborhood quality. Poor neighborhood quality can lead to crime, vandalism, physical decay, mistrust of authority, pessimism, and lack of neighborhood control. Examples of physical decay include abandoned buildings, torn-up streets, decaying sidewalks, inadequate street lighting, and garbage (Greenberg 1999).

Physical deterioration, and indirect indicators partially reflecting deterioration, is linked to resident levels of fear and changing crime rates. Neighborhood quality, combined with neighborhood attributes and resident characteristics, can have a large impact on chosen locations of criminal activity. Studies have proven that physical characteristics and appearance of a neighborhood do matter to offenders in the selection of crime locations. Neighborhood character signals how strongly residents are likely to respond when identifying criminal activity in their community (Cisneros 1995; Taylor and Harrell 1996).

"Broken Windows" Hypothesis

Continual neighborhood decline indicates a breakdown in society as the physical and social attributes of a viable community dissolve. One prevalent theory addressing the impact of neighborhood decline on crime is the "broken windows" hypothesis. Based on extensive research, the theory focuses on the concept that blighted and deteriorated neighborhoods invite civil disorder and crime. Physical deterioration of a neighborhood is considered to be a crime-enhancing agent. Regardless of actual levels of crime, poor neighborhood quality evokes a general fear of crime.

The "broken windows" hypothesis examines the pattern of neighborhood decline by analyzing physical deterioration and social isolation. Ignoring physical deterioration for long periods of time leads to increased vulnerability as residents become more concerned for their personal safety rather than the upkeep of their neighborhood. Residents retreat into their homes, decreasing community ties and allowing the neighborhood to fall further into disrepair. Sensing vulnerability, criminal offenders target declining neighborhoods as havens for crime. Criminals are drawn into the neighborhood because crimes committed there will be less likely to be detected and responded to. As a result, the neighborhood crime rate increases dramatically, residents live in a state of fear, and the physical characteristics of the neighborhood continue to deteriorate (Wilson and Kelling 1982).

Damaged or neglected property is a clear sign that resident control is lacking in a community. Absence of intervention and the deterioration of a single property can greatly affect an entire neighborhood. Neglect attracts criminals. Following the "broken windows" theory, if left in neglect, the entire neighborhood can fall into a downward spiral of social unrest and physical degradation. Neighborhood condition greatly impacts crime and fear of crime, and if left unattended crime can perpetrate further neighborhood decline. In response, is it possible to reverse the "broken windows" hypothesis? Can physical improvements to a declining neighborhood lessen residents' fear, increase community involvement, and in turn, actually reduce crime (Taylor 1999)?

Theoretical Explanations of Crime

Criminologists have attempted for years to develop explanations of crime and criminal activity. Theoretical approaches to crime often seek to explain the behavior of the criminal offender. Most philosophies are organized and structured around legal, social, psychological, biological, and political justifications. Whether economically, socially, or genetically related, many factors contribute to criminal behavior. For the purposes of my research, I will refrain from addressing the complex and undetermined causes of crime and rather focus on the criminal decision-making process in relation to crime location.

Theories associated with situational crime analysis provide an adequate basis for understanding how and where crimes occur. Based on the concept of the more opportunity for criminal activity the more crime and the less opportunity, the less crime, the rational choice and routine activity models of criminological theory are important in understanding the elements of neighborhood crime. Both theories argue that as opportunities for crime increase, more crimes will be committed, and conversely that crime declines as opportunities are reduced (Loukaitou-Sideris 1999).

Rational Choice Theory

Rational choice theory examines how criminals see and assess an opportunity to commit a crime. Rational choice theory assumes most criminals behave rationally, selecting crime locations in which they believe have high rewards and will be less likely to get caught. They commit crimes that require the least effort, provide the highest benefit, and pose the lowest risks. Rational choice theory reflects the offender's choice in crime location. Offenders look for an easy target, low visibility, easy access, and an easy exit. Perceptions of a crime site, evaluations of circumstances surrounding a site, availability of targets, visibility, and public verses private space are all factors influencing criminal activity. Offenders may consider how easy will it be to enter the neighborhood? How visible, attractive, or vulnerable do targets appear? What are the chances of being seen? If seen, will people in the area do something about it? Is there a quick, direct exit (Taylor and Harrell 1996)?

Routine Activity Theory

Routine activity is a hypothesis of community structure stating that crime is related to activities considered to be part of a person's everyday life. The theory examines how crimes occur in terms of how offenders and victims come together in routine patterns of movement. The key to understanding neighborhood crime is based upon how patterns of crime are related to the daily activities of those who routinely live, work, and play in the community (the "insiders") and those who do not routinely do so (the "outsiders"). Insiders who commit crimes know the neighborhood well, know the daily activities of residents, have legitimate access, and belong to the space socially and culturally. Insiders are harder to identify as criminals due to their daily interaction with the community. Outsiders are those that do not belong to a particular locality. Outsiders are more noticeable in the possible occurrence of criminal activity and are often deterred by resident surveillance or territoriality. Determining whether insiders or outsiders are committing crimes greatly influences the ability to interpret patterns of crime and adopt strategies to prevent crime (Brantingham and Brantingham 1998).

Crime and the Physical Environment

Criminologists consider the physical environment a determining factor in the formation of a criminal act. Through studies of sites and situations associated with crime, routine activities of criminal offenders and victims, decision-making that leads to crime, elements of places that generate and attract crime, and situations that create an increased fear of victimization, trained criminologists form an understanding of how the urban environment influences criminal activity (Brantingham and Brantingham 1998). While the physical setting on its own does not cause crime, some design elements exacerbate local crime problems. The physical environment affects potential offenders' perceptions about a possible crime site, their evaluation of the circumstances surrounding a potential crime site, and the availability and visibility of one or more target observers. Physical features may influence resident reactions to potential offenders by altering the choices of detecting them and by shaping the public-private realm of target crime areas. Serving as a

variable in criminal behavior, physical settings influence the occurrence and fear of crime in communities (Taylor 1999; Tijierno 1998).

Decisions regarding the use and management of the physical environment can have an even broader effect on overall neighborhood security. Three basic elements necessary for a person to commit a crime consist of ability, motive and opportunity. Combating crime with design offers the possibility to reduce the intruder's ability and opportunity to commit a crime, therefore reducing motivation to enact on criminal activity (Stollard 1991). Building on the ideology that the physical environment has a definitive role in deterring crime, the question becomes to what degree and process can physical features of the environment prevent crime or reduce problems thought to be crime related, such as fear of crime or resident concerns about neighborhood viability?

Evolution of Crime Prevention

Although many factors and variables influence crime, there is an overriding principle concerning the impact the physical environment has on criminal activity - - the design of the environment exhibits cues that affect behavior. The reaction of users to a particular setting is a determining factor in the perception of that space. Whether perceived as a safe or dangerous place, environmental cues in residential areas are extremely important. Decisions regarding the use and management of the physical environment can have an enormous impact on security throughout the entire neighborhood (Crowe 1991).

In recent decades, approaches to crime prevention have focused on changing the criminal rather than the crime situation. The National Institute of Justice has sponsored crime prevention research over the past thirty years. Solving crime problems by dealing with crime's sociological roots in poverty, economic restructuring, or systematic discrimination is a long-term strategy that requires massive injections of money and public – private cooperation. At a societal level, this sociological answer to deterring crime is unlikely to happen. The difficulties related to reducing criminal behavior has led to a much greater interest in approaches to crime prevention which are aimed at the circumstances of crime rather than the social and personality factors which give rise to it (Poyner 1983). Realizing the increasing problems associated with crime in American

society, crime prevention strategies have shifted from the sociological characteristics of crime to the effective management of the physical environment in reducing crime (Wekerle and Whitzman 1995).

Acknowledging the impact the physical environment has on criminal behavior, crime prevention techniques based on physical cues have transformed over time. Architects and planners throughout history have demonstrated an awareness of how the environment shapes human behavior. Theories and techniques are rapidly advancing as greater emphasis is placed on the environment. From early cave dwellers to modern crime prevention strategists, the science of crime prevention is constantly evolving (Crowe 1991).

Historical Precedents

The built environment has historically been designed to provide protection in times of social and political unrest. Since the beginning of time cultures have dealt with the problem of crime and the various successful and unsuccessful methods to reduce criminal activity. The most accepted and readily used prevention technique involved the manipulation of the built environment. From cave dwellers to French leaders, historical efforts to reduce crime have centered on the physical environment.

Cave dwellers generally had only one entrance to individual caves. Whether built into mountains or high in cliff walls, cave dwellers controlled access to dwelling units and used the location for the best possible surveillance of the surrounding areas. Along with surveillance, cave dwellers often applied methods of territoriality by clearing areas in front of caves, stacking rocks along the periphery, and decorating entrances. The dwellers differentiated public and private space, establishing ownership and areas of controlled space (Crowe 1991).

Offering limited access and impeccable surveillance, medieval cities were walled and located at high elevations. Designers of medieval castles sought to control who could enter the fortress. High walls, moats, and drawbridges were deemed the best methods for controlling access and protecting the castle (Eicher 1993). The efforts of French leaders in reducing crime were sparked by Louis XIV's extensive urban renewal efforts. His primary effort in seventeenth century Paris focused on providing adequate

street lighting to increase security and protect property. In the nineteenth century, French leader Napoleon III authorized chiefs of police to raze or demolish any building or habitat known as a detriment to society or haven for criminal activity (Crowe 1991).

The attempts of past civilizations in utilizing crime prevention techniques through the manipulation of the physical environment have greatly influenced modern prevention efforts. The physical environment has long been used to decrease crime, alter social behavior, and improve living conditions. Learning from approaches of territoriality, surveillance, fortification, and urban renewal, modern strategists have greatly benefited from lessons learned in the past.

Twentieth-Century Advocates

Modern day crime prevention techniques and strategies have evolved from the days of fortified castles and well-lit streets. Many Americans take for granted the efforts of some to create a safer environment for all. Realizing the direct impact the physical environment has on crime, recent theorists and researchers have sought to determine exact indicators of crime and how elements of the built environment can be used to deflect crime. While many theories exist addressing the relationship between crime and physical settings, the three most notable advocates are Jane Jacobs, Oscar Newman, and C. Ray Jeffrey.

Jane Jacobs

In 1961 Jane Jacobs argued that the built environment needed to be looked as an approach to address issues of urban crime. She touched on the modern implications of the relation of environmental design and crime prevention in her book, The Death and Life of Great American Cities. Jacobs argued that crime and the physical environment were related in a systematic, observable, and controllable manner. She stressed the interaction of the physical environment with its inhabitants and how important this is in the life and vitality of a street or neighborhood. Her devastating critique of modern urban planning advocated that modern city design typically undermined peoples' ability to observe public streets, thus breaking down informal social control of criminal activity. Coining the phrase "eyes on the street", Jacobs' proclamation of effective crime

prevention is consistent with methods of natural surveillance, visibility, and territoriality (Jacobs 1961).

Oscar Newman

In the early 1970s, architect and city planner Oscar Newman advocated that crime could be reduced by design through a principle known as "defensible space". Dependent upon the idea that the design of the physical environment has the capacity to either deter or facilitate crime by enhancing the resident's ability to monitor and control his or her environment, Newman's theory was essentially an approach to solving the problem of designing multi-unit public housing projects in urban America. Defensible space discourages crime by making people feel they are known to others and will be held responsible for their behavior. Believing that crime is less likely when potential criminal acts are framed in a physical space that is under surveillance, Newman proposed that residential communities be designed to allow households to supervise areas where they live. He argued that the built environment could be modified in such a manner to create a perception of a space as defended. Newman advocated crime prevention methods of territoriality and natural surveillance to promote resident control, therefore returning to a more human and less threatening environment (Poyner 1998; Stollard 1991; Tijierno 1998)

C. Ray Jeffrey

Criminologist C. Ray Jeffrey advocated crime prevention in the 1970s through an established method known as Crime Prevention Through Environmental Design (CPTED). Based on the idea that proper design and efficient use of the built environment can lead to a reduction in the incidence and fear of crime while improving quality of life, CPTED focuses on strategies and techniques used to decrease vulnerability. CPTED considers how people behave in an environment and how the environment lends itself to a productive and safe use by those legitimately using the space. Jeffrey's research examined altering the built environment to reduce opportunities for crime through access control, surveillance, and territoriality (Jeffrey 1971; Vann 1997).

Crime Prevention: Strategies, Concepts, and Evaluations

Crime prevention is the anticipation, recognition, and appraisal of a crime risk and the initiation of some action to remove or reduce the apparent risk. It is broadly defined as any practice shown to result in less crime than would occur without the practice. Any policy that causes a lower number of crimes to occur in the future than would have occurred without that policy constitutes crime prevention (Sherman, et al. 1998).

In the twentieth century, the predominant approach to crime prevention aimed at changing the criminal rather than the crime situation. This sociological approach assumes that criminals differ from the rest of society in some fundamental way which predisposes them to crime. The difficulty of this approach is properly identifying the root causes of criminal activity. Elements considered to be causes of criminal behavior include genetic make-up, parental care, up-bringing, and education. Social policies and government intervention do little to alter the attitudes that preclude criminal behavior. Compared with the social issues of poverty, deprivation, drugs, and social disintegration, the physical environment is one of the few elements that can be easily modified to create a safer community. Many assume that the search for solutions to crime in residential areas should be directed towards issues of management and social welfare. While lessening the factors associated with crime is extremely important, paying careful attention to the built environment is a proactive response to the problem of crime in residential areas. In recent decades, attempts to prevent crime by changing the situations in which crime occurs rather than the social circumstances that elicit criminal activity have risen to control crime in American society (Poyner 1983).

Neighborhoods can be designed to promote a sense of safety and security and deter criminal activity. For this reason, altering the physical environment as a method of crime prevention is an amiable attempt on the behalf of architects and planners to reduce crime in residential areas. Planners are not sociologists, psychologists, or criminologists. Through their involvement in planning and design, architects and planners can influence the establishment of safer neighborhoods and communities. Design professionals may not be able to create a residential utopia, but careful design considerations have the capability to reduce opportunities for crime and increase community security (Poyner 1998).

Crime prevention emphasizing the physical environment has the ability to improve safety, decrease fear of crime, and eliminate conditions that contribute to crime. Communities, neighborhoods, individual homes, streets, and parks can be made safer through the application of design principles that make it more difficult to carry-out illegal activities. Theories of target hardening, Defensible Space, and Crime Prevention Through Environmental Design (CPTED) are approaches related to the manipulation of the physical environment as a method of crime prevention.

Target Hardening

Target hardening is a crime prevention technique that denies access to crime targets through physical or artificial barriers. Whether locks, alarms, fences, or gates, target hardening reflects the installment of some form of security device to reduce crime. Target hardening represents a view of crime prevention that places sole reliance on securing buildings and areas so outsiders cannot gain access without approval. Conventional security devices are often used to promote neighborhood safety, yet target hardening usually leads to constraints on use, access, and enjoyment of the environment. Often taking on a "fortress" mentality, target hardening isolates residents from the environment in which they perceive to be hostile (Crowe 1991).

Perhaps one of the most controversial examples of target hardening is the on-going debate over gated communities. Gated communities are defined as residential areas with restricted access that makes normally public spaces private. Physical barriers, walled or fenced perimeters, and gated or guarded entrances control access. Becoming popular within the past fifteen years, gated communities drastically drive to redefine territory and protect neighborhood boundaries. Over 2.5 million American families live in gated communities (Blakely and Snyder 1998).

Gating is not a new phenomenon for protecting against criminal activity. Medieval and Renaissance kings and princes routinely provided gated enclaves for their families and royal servants in times of war and conflict. Whether towers, moats, or drawbridges, the idea of a strong fortification stood steadfast and true as a means of protection. In modern times, gated communities reflect the era of nineteenth-century robber barons. It was an era in which the rich built private streets to seal themselves off from the lower

realms of society. From the American elite, the Hollywood movie-star community quickly adopted the idea of walled estates. The first gated enclaves available to the mass market were master planned retirement developments of the late 1960s and 1970s. The concept quickly spread to resorts, country clubs, and middle class suburbs in the 1980s. Today, the phenomenon of walled cities and gated communities is a dramatic manifestation of a new fortress mentality growing in America (Blakely and Snyder 1998; Dillon 1994).

Gated communities raise serious questions about the long-term impact prevention measures have on building or destroying a sense of community. Gates are an artificial means of security that diminish the ideal and realistically active, inclusive, and interdependent society (Tijierno 1998). The private street plans indicate that as the level of security increases, less social interaction occurs and the sense of community diminishes. Gated communities deter public access to roads, sidewalks, parks, open space, playgrounds and other resources typically accessible to all citizens. Gated communities can lead to an increase in the social isolation felt by residents and reduce the fragile community support networks that are important defenses against crime. The formation of gated enclaves can create problems by visually marking communities as fearing crime and displacing crime to surrounding communities. Gated communities may enhance the perception of security, but many communities continue to face high rates of burglary and vandalism (Canin 1994; Stollard 1991).

Most crime experts agree that walled communities are an expensive and unsuccessful solution to reducing crime. Communities are realizing that it is cheaper to design against crime rather than pay for expensive gates as a means of physical protection. Alternative approaches to security and crime control through careful design can reduce crime without the excessive use or social disadvantages of neighborhood fortressing (Felson and Peiser 1998; Crowe 1991).

Defensible Space

Defensible space is a mechanism that deals with the physical design features of a neighborhood that are crime inducing. Originated by Oscar Newman, the theory depends on the perception and reality of a social fabric that defends itself. The willingness of

residents to defend a public space establishes a link between the built environment and criminal behavior. Defensible space relies on the design of the physical environment to either deter or facilitate crime by enhancing individual abilities to monitor and control the built environment. Assuming most criminals behave with some rationality and select sites with low risks and high rewards, the primary strategy of defensible space is to deter crime by assigning spaces that say criminals are observed, identified as intruders, and have a difficulty escaping (Cisneros 1995; Tijierno 1998).

Neighborhood design and layout influences how an individual evaluates his or her setting. Settings where feelings of security and the physical nature of the built environment intersect promote the feeling of a civil space. A civil verses uncivil space is a pacified social space that is expressed and perceived as safe through its physical characteristics. The perception of an unsafe social and physical setting can greatly decrease feelings of security. The human need for protection from physical threats is a condition that allows for social interaction without the presence of fear. The perception by residents that a space is defended is characterized by familiarity, visibility, refuge, and possible escape (Tijierno 1998).

A defended space is an environment that exhibits physical characteristics that allow residents to assume primary authority for ensuring their safety (Loukaitou-Sideris 1999). Defensible space provides architectural guidelines for the design of a safe residential community. Whether arranging entrances or exits to increase visibility, organizing public spaces to decrease vandalism, or placing structures to calm traffic, methods in managing the built environment through the principles of defensible space have the ability to lessen criminal activity and behavior. Key principles of Newman's defensible space theory include territoriality and natural surveillance (Tijierno 1998).

Territoriality

Territoriality is a concept centered on feelings of ownership and responsibility for taking care of the built environment. Defensible space depends on resident involvement to reduce crime and remove the presence of criminals. Territoriality is a means of achieving this goal. Territorial features promote feelings of ownership within a neighborhood, which have the potential to reflect a physically clean and beautiful

community with involved and watchful residents (Taylor 1999). Defensible space planning principles restructure the physical layout of a community to allow residents to control the areas around their homes. Giving private ownership of once public spaces promotes attitudes and perceptions of community cohesion and safety. By assigning value to a space through community ownership, a clear demarcation of public and private spaces has the capability to reduce the fear of victimization and prevent crime. Allowing resident control of the built environment presents a social fabric that defends itself by proprietorship, ownership, and community responsibility (Newman 1995; Tijierno 1998).

Natural Surveillance

Stemming from Jane Jacobs' concept of "eyes on the street", defensible space supports the capacity of physical settings to provide surveillance opportunities for residents. Neighborhoods should reflect the message that if entered, one will be observed and noticed. Research has found that visibility and the presence of potential witnesses discourage potential offenders from victimizing persons or destroying property. According to defensible space principles, the residential environment should be designed to allow households to supervise and be responsible for the places where they live. One such way this is achieved is by designing homes with windows facing public spaces to allow for residents to naturally survey surrounding areas. Presenting a neighborhood 'watchful eye', natural surveillance discourages crime by making criminals feel they are known by others and will be held responsible to account for their actions (Greenberg 1999; Poyner 1998; Stollard 1991).

Newman's theory of defensible space, through methods of natural surveillance and territoriality, emphasizes the use of the physical environment to promote resident control and strengthen community bonds. Whether a neighborhood is defended depends on resident involvement and perception of the built environment. Clearly demarcated public and private spaces, visibility, lighting, removal of visual barriers, and windows with good views are examples of design elements key to aiding communities in creating defensible spaces (Cisneros 1995).

Crime Prevention Through Environmental Design (CPTED)

Crime Prevention Through Environmental Design (CPTED) is a program based on the theory developed by C. Ray Jeffrey that proper design and effective use of the built environment can produce behavioral effects that reduce the incidence and fear of crime. CPTED recognizes the relationship between the environment and opportunities for crime and attempts to reduce opportunities through appropriate planning and design decisions. CPTED focuses on the settings in which crimes occur and the techniques used to reduce vulnerability in these settings. The program considers day-to-day decisions regarding the location of specified land uses, the relative positioning of buildings, and design details and how these decisions influence crime and victimization (Crowe 1991; Taylor and Harrell 1996).

CPTED incorporates crime prevention strategies that enhance the effective use of space. The program requires the user to relate design and use decisions to the objectives of a particular space. Often classified as the "Three-D" approach, CPTED principles assess space to determine how well it supports natural surveillance, access control, and territoriality. Focusing on designation, definition, and design, the "Three-D" approach supports the ideology that: all human spaces have some designated purpose; all human space has social, cultural, legal or physical definitions that prescribe the desired and acceptable behaviors; and, all human space is designed to support and control the desired behaviors. Out of this approach, the challenge of CPTED becomes to design useful spaces that are not only functional but maximize the personal safety of legitimate users (Crowe 1991).

CPTED considers how people behave in an environment, how the environment lends itself to a productive and safe use by those using the space, and how crime prevention may be applied. CPTED involves the design of the physical space in the context of the needs of bona fide users of the space (physical, social, psychological needs), the normal and expected use of space, and the predictable behavior of users and offenders. In relation to designing and effectively managing the built environment, there are three overlapping strategies key to the implementation of CPTED - - access control, natural surveillance, and territorial reinforcement. By eliciting natural surveillance and controlling access through territoriality, the combination of CPTED design strategies

promote greater responsiveness by users in protecting their neighborhood and community (Crowe 1991; Vann 1997).

Access Control

Access control is a design concept directed at decreasing crime opportunity by denying access to a crime target. Access control is the physical guidance of people coming and going from a specific place by the justified placement of entrances, exits, fencing, plantings, and lighting. Strategies are typically classified as organized (security guard), mechanical (locks, physical security), or natural (spatial definition). Regardless of technique, the concept of access control seeks to provide secure barriers to prevent unauthorized admittance to individual homes and communities (Crowe 1991; Vann 1997).

Natural Surveillance

Natural surveillance is a strategy focused on improving opportunities for surveillance by physical design mechanisms that serve to increase the risk of detection for offenders. Natural surveillance is the placement of physical features, activities, and people in such a way as to maximize visibility. Criminals do not want to be seen; placing physical features in a way that maximizes the ability for residents to constantly see what is going on discourages crime. Whether implementing organized (police patrol), mechanical (lighting), or natural (home windows), the goal of natural surveillance is to increase community watch by keeping intruders under close observation (Crowe 1991; Vann 1997).

Territorial Reinforcement

Territorial reinforcement considers the contribution of physical design to resident ownership over a particular space. As users of a space develop a sense of proprietorship, they exhibit territorial control. People protect territory that they feel is their own and have a certain respect for the territory of others. Territorial reinforcement uses physical attributes that express ownership (fencing, signage, plantings). By differentiating private areas from public spaces, potential criminals perceive a sense of territoriality and

opportunities for crime is lessened. Territorial reinforcement is often considered an umbrella concept that embodies natural surveillance and access control (Crowe 1991).

The application of Crime Prevention Through Environmental Design alone cannot stop crime. The program relies on partnerships with community, government, educational, and social agencies in order to implement crime prevention strategies. CPTED contends that architects and planners can create a climate of safety in a community by designing a physical environment that positively influences human behavior. The program must be part of a comprehensive strategy for community safety and livability. CPTED involves the effort to integrate design, citizen and community action, and law enforcement strategies to reduce the propensity of neighborhood crime and fear of crime (Canin 1994; Crowe 1991; Fleissner and Heinzelman 1996).

Solving the Problem

There is no cure-all solution for stopping crime. Crime is a complex issue that is a great problem in America. Efforts over the past century present several remedies which are detailed and well-researched. Perhaps the answer is not one single prevention strategy, but a compilation of techniques to deter crime. Within this comprehensive approach, the physical environment cannot be ignored. Whether following the organized program of CPTED, target hardening, or defensible space, the crime prevention strategy with the greatest potential involves heavy reliance on design and physical changes that can help reduce criminal activity (Loukaitou-Sideris 1999).

Promoting Safer Public Housing Communities

Physically, socially, and economically, housing is one of the most important elements of American life. Housing provides shelter and protection, yet unsafe, unsanitary, and inadequate housing can greatly affect one's physical health, privacy, and security. A residential area that deserves detailed attention concerning housing quality is public housing. Trends in unsafe and unsanitary living conditions have led to many efforts the public housing stock in America. Crime and fear of crime, in correlation with physical deterioration, has led to an increased emphasis in providing decent, safe, and

affordable public housing. From tenement housing of the early 1900s to high-rise developments of the 1960s, public housing in America has transcended over time in efforts to provide housing opportunities for low-income families. In attempts to facilitate secure neighborhoods, efforts of crime prevention through physical and architectural design need to be evaluated to promote safer public housing communities.

The Rise of Public Housing in Twentieth Century America

The rapid growth of American cities in the nineteenth century resulted in the burden of an increased residential base. By 1850 nine cities had populations of more than 100,000. By the end of the nineteenth century, the American population had increased from 5 million to 76 million. In 1900, 40 percent of the population lived in cities, thirty-eight of which had more than 100,000 inhabitants. The influx in population created problems of overcrowding, inadequate housing, and insufficient growth. As more and more people migrated to urban centers, the need for affordable housing in major cities emerged. The deplorable housing conditions present in America at the turn of the century gave rise to some of the worst housing and living conditions of the modern era (So 1988).

Early twentieth-century housing in the United States for low-income families living in central cities was predominantly tenement housing. Due to higher land values in urban areas, tenement housing was typically a multi-story building with a large number of apartments within a small land area. High-density establishments, tenements were often designed as "dumbbell" style complexes. The "dumbbell" style constituted a long, rectangular building with a 'T' on each end. Apartments were poorly ventilated and many lacked available amenities such as water, plumbing, and heat. Fostering extreme living conditions, the tenements quickly became havens for crime, urban blight, and social unrest (Crowe 1991).

The U.S. Housing Act of 1937 established a federal commitment to provide "decent, safe, and sanitary" housing for low-income Americans. The program financed housing for low-income Americans by giving funds to local public housing authorities who built, owned, and operated the housing. The program was linked to slum clearance because it initially required the demolition of a slum housing unit for each public housing

unit built. Between 1937 and the outbreak of World War II, local housing authorities under the program constructed approximately 168,000 dwelling units (So 1988). The housing that developed was dependent on transportation nodes and attempted to emulate middle class values and concepts through architectural design. The projects proved unsuccessful, creating large and unmanageable residential environments with no defensible or identifiable territorial space. Public housing created an atmosphere of social decline, economic determinism, and physical deterioration. Neglect in major cities of the United States produced dangerous urban dwellings that were unfit for acceptable living standards (Crowe 1991).

Today approximately 2.6 million Americans live in public housing. Children and senior citizens make up close to half of the residents of public housing. The average household income of persons living in public housing averages $9,500 on an annual basis (HUD 1999). To assure the goals of the U.S. Housing Act, the U.S. Department of Housing and Urban Development (HUD) is tasked with maintaining secure and livable public housing communities. HUD provides funding to 3,200 public housing authorities around the country that run more than 1.2 million units of low-income housing in 14,000 housing projects. Since 1993, HUD and local communities have joined forces to provide thousands of millions of dollars for rejuvenating, revitalizing, and demolishing some of the worst housing in the country (HUD 1999; Weinstein 1998).

Crime and Fear of Crime in Public Housing

Surpassing the intentions of the U.S. Housing Act of 1937, public housing in America has become a haven for crime, immoral activity, and victimization. As a result of twentieth-century housing policy, many public housing projects have become nightmarish concentrations of poverty and neglect in major urban areas. Originally intended to facilitate decent housing for low-income families, public housing has taken on an image of unsafe and unsuitable living conditions. Although many elements of public housing are misconceived perceptions of unsafe housing, crime and fear of crime are unavoidable considerations when examining housing quality.

Empirical studies show that crime is concentrated heavily in certain residential areas (Loukaitou-Sideris 1999). Considering that many associate criminal behavior with the poor physical and social conditions of the impoverished sectors of the American population, the primary intensification of crime in residential areas occurs in low-income housing projects. Often home to the poorest of the poor, the concentration of poverty in housing projects has led to a marked increase in urban crime. Large public housing developments typically suffer from higher crime rates compared to smaller, mid to upper-income communities (Newman 1996). Crime analysis units in police departments have consistently found that public housing units have a disproportionate number of habitual offenders per capita than any other types of housing (Crowe 1991).

Determining whether crimes are instigated by 'outsiders' or 'insiders' is imperative in lessening opportunities for crime in public housing. Depending on tenant mix, the presence of more potential criminals creates proportionately more crime. A high concentration of potential offenders living in the project escalates crime rates. Some factors which facilitate higher crime rates in low-income housing developments include the percent of residents receiving welfare, the number of publicly assisted projects in the area, and felony rates of the surrounding community (Newman 1996). While there are many internal conflicts causing criminal activity in public housing projects, many of the perceived problems are created by persons living outside the development. Public housing projects often become magnets for 'outsiders' who are looking for sources of drugs, prostitution, or other illegal activity (Crowe 1991). Despite evidence that residents themselves are largely the victims and not the source of the problem, public housing projects have taken on the image as breeding grounds of criminal activity.

The United States Department of Housing and Urban Development (HUD) monitors criminal activity in housing projects. A 1997 survey of more than 1,500 housing projects found that more than 2,700 residents were evicted from housing for criminal and drug activity. HUD also found that more than 47,000 outside residents were banned from particular public housing projects due to continuous acts of illegal activity. In addition to monitoring criminal activity, HUD has classified 85,000 units of the nation's 1.3 million housing units as "troubled". In accordance with the department,

"troubled" is defined as units that are severely damaged and need both physical and social reconstruction (Weinstein 1998).

In response to the growing recognition of the need for improved safety for residents, public housing authorities have spent over $4 billion in HUD funds on crime reduction and prevention efforts since 1990 (HUD 1999). While there are numerous attempts on the federal level to improve public housing conditions, many local governments are left with the overall responsibility within their community. The cost of demolition of useless buildings and relocation of families to suitable housing has become a responsibility of local governments and housing authorities. Many communities are faced with large, inaccessible, and undesirable projects, deteriorated and unsightly areas, and a housing stock that is aging and in need of massive renovation or replacement (Crowe 1991). Whether on the local or federal level, cost efficient opportunities to improve public housing are necessary. The redevelopment or redesign of public housing should take into consideration current methods of altering the physical environment to prevent crime as a technique of cost effective security.

Physical Design and Crime in Public Housing

Concentrations of crime in public housing are detrimental to community vitality and individual security. A large portion of public housing in America appears run-down, neglected, and undesirable. As housing quality has declined and overcrowding has increased, the degrading condition of low-income housing has become a reflection on the physical environment. Many elements contribute to criminal activity. Demographics, economics, property management, location, and tenant make-up are all variables that influence crime. While the physical environment may only partially contribute to unsafe living conditions in public housing developments, there are several physical factors which directly impact resident safety and security. The lessons learned from past housing projects clearly exacerbate particular design principles having proved influential or detrimental in motivating criminal activity. While Crime Prevention Through Environmental Design (CPTED) and target hardening provide measures to deter crime, the concept of defensible space exemplifies a combination of physical elements which rely heavily on resident involvement and participation. For this reason, Oscar Newman's

theory on “defensible space” appears to be the most practical in creating safer public housing projects which foster a broader sense of community (Cisneros 1995).

Defensible Space Applied

Defensible space creates a social fabric that defends itself and deters crime. The concept of defensible space restructures the physical layout of a community to allow residents to control the areas where they live. The more a space is defended, the less vulnerable an area is to crime. This interaction between the physical environment and individual residents has a greater opportunity to build a stronger sense of community amongst residents. Defensible space considers how the impact of physical features on fear and victimization reflect resident attitudes towards securing the environment in which they live (Newman 1972; Tijierno 1999).

The concepts and principles of defensible space are the product of careful study of crime problems in public housing projects and their relation to design characteristics. In order to realize the effect defensible space can have on deterring crime and building community, it is important to examine past instances of applying defensible space practices. Three key examples to understanding the principles and applications of defensible space to public housing communities are previous case studies performed by Oscar Newman.

Pruitt-Igoe

The concept of defensible space evolved over thirty years ago when Oscar Newman evaluated the demise of the infamous St. Louis public housing development, Pruitt-Igoe. Based on modern design principles of the renowned architect LeCorbusier and the International Congress of Modern Architects, the project consisted of 2,740 units of high-rise housing. Hailed as an example of the new enlightenment in architectural design, Pruitt-Igoe offered private dwelling units for families and communal open areas for residents to congregate and share. Occupied by single – parent, welfare families, the design proved to be a disaster. The common areas were disassociated from the dwelling units, therefore gaining a lack of identity and an increased perception of vulnerability. Hallways, elevators, stairs, and entranceways, were viewed as havens for criminal

activity. The common spaces, originally intended to facilitate resident interaction, were soon vandalized, littered with garbage and waste, and abandoned by residents. As circumstances worsened and the building conditions further declined, occupancy levels decreased and crime increased. The project never achieved more than 60% occupancy. Realizing the problems associated with the project and its inability to provide adequate housing for low-income families, Pruitt-Igoe was demolished within ten years of its original construction (Newman 1996).

While Pruitt-Igoe was designed by some of the leading architects of the post World War II era, the question arose as to what went wrong? Realizing the social implications of the project and theoretical explanations of crime, Newman looked to surrounding communities in search of identifiable variables which facilitated the development's social and physical destruction. One in particular case was Carr Square Village. Located across the street from the crime-ridden Pruitt-Igoe, Carr Square Village was an older, smaller, row house complex. Occupied by an identical population, the neighborhood remained trouble-free throughout the construction, occupancy, and decline of Pruitt-Igoe. As Newman further compared the two projects, he began to draw conclusions based on the realization that if the social variables were constant in the two developments, what then was the significance of the physical differences that had enabled one to survive while the other was destroyed (Newman 1996)?

Focusing on the physical attributes of Pruitt-Igoe, Newman examined the designation of space within the project. The public spaces of the project were filthy and crime-ridden while the apartment interiors, in sharp contrast, were well maintained. Areas where only two families shared a landing were clean and well-tended in comparison to areas shared by multiple families. The condition of public and private spaces led Newman to conclude that residents maintained, controlled, and identified areas that were clearly delineated as their own. Communal spaces shared by all residents evoked no feelings of identity or control. Anonymous public spaces generated no cues on acceptable behavior and little differentiation between residents and intruders. It was impossible for residents to exert proprietary feelings over such large, unidentified spaces (Newman 1996).

The problems associated with the physical design of Pruitt-Igoe led Newman to further examine the impact building type can have on resident control and minimization of crime. Was high-rise public housing an acceptable means of providing safe, decent living conditions for low-income families? Compared to high-rise housing for upper income families, the public areas are controlled and maintained by management and staff. An expensive and unreasonable venture for public housing, Newman questioned if it was possible to design public housing without any interior public areas and to have all grounds assigned for the exclusive use of individual families. Newman suggested the ineffectiveness of high-rise public housing of the 1960s be re-evaluated to allow for smaller, more manageable two to four story apartment buildings.

Clason Point Gardens

In one of the earliest attempts to apply the defensible space concept in public housing, Oscar Newman redesigned the grounds of Clason Point Gardens. Located in a relatively high crime area of New York City, the development is a 400 unit public housing project consisting of 46 buildings. The project was built as temporary munitions workers' housing during WWII. The project was constructed of exposed cement block in an army barracks fashion. The un-kept grounds and the unfinished, cement block buildings made the project stand out against the surrounding streets of privately owned, red brick row houses. When the buildings were originally constructed in the 1950s, all of the space around them was left public. Tenants had no sense of personal responsibility for any area outside their own units. The project equated with the stigma of public housing, was viewed as unsafe and attractive to criminals. Composed almost entirely of two-story row houses, the area was redeveloped using defensible space principles in the 1970s. The redevelopment of Clason Point Gardens is an excellent example of preventing crime through physical design and strengthening community through residential control in housing projects (Newman 1996).

Clason Point Gardens was plagued with numerous problems, primarily instances of increasing criminal activity. Applying elements of defensible space, Newman redesigned the project by dividing up and assigning the previously public grounds of the

housing project to individual residents. With a rather limited budget, Newman's plan focused on five overall objectives:

1. To increase the proprietary feelings of residents by subdividing and assigning much of the public grounds to the control of individual families and small groupings of families through the use of real and symbolic fencing.

2. To reduce the number of pedestrian routes throughout the project so as to limit access and to intensify the use of the remaining walks.

3. To intensify tenants' surveillance of the grounds by giving them a greater identification with the grounds.

4. To improve the image of the project by resurfacing the exterior of the existing cement block building and by further identifying individual units through the use of varying colors and resurfacing materials.

5. To reduce intergenerational conflict among residents within the project by assigning specific areas for each group to use (Newman 1996).

Redesign of Clason Point focused on defining designated uses of space and increasing resident territorial control. Eighty percent of previously public spaces were designated to control by individual households. Residents were given front and rear yards, and the rear yards of small groups of residents were lined with six-foot iron fencing, so that access to the enclosed space would be from the interior of the units only. The facades of the buildings were modified to individualize each unit and introduce a variation in color and texture to the previously uniform, gray cement block walls. New lighting and seating were positioned on public walks to facilitate surveillance by residents (Newman 1995).

The design efforts at Clason Point reduced the overall crime rate in the development by 54% in the first year. Giving residents the opportunity to take control of the space and activities outside their dwellings proved successful in preventing crime as residents took pride in their living environment through maintenance and upkeep. The applications of defensible space applied at Clason Point Gardens can be quickly and easily modified at a minimal expense in similar public housing projects. The continued success of the project is an excellent example of manipulating elements of the physical environment to prevent crime and build community.

Five Oaks

The Five Oaks community is a half-square mile residential area located a few miles north of downtown Dayton, Ohio. It contains 2,000 households, or about 5,000 people, inhabiting one to two family homes and some small apartment buildings. The redevelopment of the community is probably the most impressive example of the creation of neighborhood defensible space (Cisneros 1995).

In the 1960s Five Oaks was predominantly a community of white, middle-income homeowners. By 1990 more than half of its residents were minorities and more than half were renters. Property values had declined substantially and crime had increased. Suffering from similar problems typical of older urban communities located near the downtown core, a major problem experienced by Five Oaks was heavy through traffic. Historically, its street pattern permitted considerable through traffic, serving as a gateway between downtown Dayton and prosperous residential communities to the north. Five Oaks' location between downtown and the suburbs turned its interior streets into a through-traffic network. The neighborhood streets were burdened with traffic, making them unsuitable for normal, quiet residential use. Eliciting illegal activity and destroying neighborly interaction, the heavy traffic streets led to an increase in crime in the neighborhoods (Cisneros 1995).

While the redevelopment of Five Oaks focused on many efforts to improve entire neighborhood quality, perhaps the most applicable method of defensible space methods in public housing projects was the emphasis placed on access and circulation patterns. Newman's redesign involved complete restructuring of the neighborhood streets. The plan removed vehicular through-traffic with the only traffic remaining having a destination within the community. The character of the streets was completely changed to become safe places for children to play and neighbors to interact. Many streets were transformed from long, narrow avenues to shorter, wider streets that culminated in cul-de-sacs. Newman proposed limited access to the neighborhood through the installation of gates. Fewer cars traveling through a neighborhood make it easier to recognize residents and intruders. By limiting vehicular access, streets are perceived as under constant control by the residents. Limited access deters crime by eliminating multiple

escape routes. Particular circulation patterns create a street system clearly perceived by criminals as too risky of an environment to commit a crime (Newman 1996).

While the neighborhood of Five Oaks installed gates to deter crime, the primary emphasis on preventing crime was through limiting access and changing street patterns. Gates may not be a viable option for all communities, but the redesign of neighborhood streets can serve as an effective means of crime prevention. Street patterns can increase neighborly interaction and promote a sense of neighborhood identity.

Design Against Crime

Analysis of the conditions and applications of three very different housing projects, Pruitt-Igoe, Clason Point Gardens, and Five Oaks, offers invaluable information on successful design measures to prevent crime and reduce fear in public housing projects. From project size and building type to access control and circulation, the application of successfully creating defensible space in public housing projects possesses the opportunity to create a more livable environment, promote neighborly interaction, and in turn, prevent crime.

Project Size and Building Type

The increased need for affordable housing in America at mid-century constituted the placement of large public housing projects in many central cities. Originally developed as small projects, public housing grew to become "large warehouses for the poor" (Wekerle and Whitzman 1995). Studies have proven the larger the project size, the greater amount of crime. Project size is the measure of the overall concentration of low-income families in a project. The larger the project, the more residents feel isolated from society. This stigmatization precludes the possibility of withdrawal from community interaction and neglect of physically suitable environments (Newman 1996).

The positive health, environmental, and social effects of smaller-scale projects are being recognized as cities attempt to develop initiatives to decentralize the volume of public housing in American cities. Current policy concerning project size and scale is directed towards small projects that house a proportionate amount of low-income families. The goal of reducing public housing project size by dispersing large volumes of

housing into small parcels is in hopes of reducing crime and victimization within the projects and averting the negative impacts large complexes have on adjacent neighborhoods (Crowe 1991).

Public housing of the late 1950s was the product of social theory which focused on placing low-income families in a socially desirable, middle class definition of housing - - the high-rise apartment building. Large, high-rise tower projects were proven disasters in perpetuating crime problems in public housing (Crowe 1991). While residential towers were an attempt to provide housing in densely populated urban areas, the large number of residents living in the projects experienced higher crime rates and were more susceptible to becoming victims of violence. High-rise apartments are the most difficult building type to make defensible. Extensive high-rise public housing developments tend to have a high percentage of unused space, limited opportunities for natural surveillance, and a general sense of resident isolation. Projects such as Pruitt-Igoe exemplified the rapid physical decline and social unrest of large housing complexes (Newman 1996).

The failures of high-rise public housing demonstrated that building type has a definite effect on behavior. For this reason, building design and layout can have an enormous impact on attracting or deflecting crime in public housing (Newman 1996). Studies have shown that buildings with fewer apartments per entryway, fewer stories, and better views of outside areas have lower occurrences of crime and lower levels of fear and victimization (Taylor 1999). Crime studies demonstrate that buildings with a large number of families sharing an entryway experience higher crime rates than those with fewer families per entrance. It is easier for offenders to gain access to a building shared by 24 to 100 families rather than one shared by 6 to 12 families. The greater number of people who share a space, the less an individual is able to identify acceptable behavior in that space. Responsibility for maintaining and controlling a public space, like an entranceway, is lost when the residents do not feel ownership for a space (Newman 1995).

A priority in the redesign or redevelopment of public housing should be to minimize the number of apartments served by each entrance. Building height typically affects the ability of residents to control their living environment. A family's claim to a

territory diminishes proportionally as the number of families who share that claim increases. The larger number of people who share a space, the less each individual feels right to it. Opposite of high-rise developments, two to four story housing styles promote defensible space through resident control and limited access to individual dwelling units (Newman 1996).

Designation of Space

Many troubled public housing projects have considerable amounts of unidentified spaces, causing increased fear and victimization. In order for design to reduce crime, design principles should be used to define spaces, identify the appropriate uses of particular spaces, and limit public access to only those spaces defined as public (Zahm 1998). Defined spaces foster a sense of territorial control and create norms of acceptable behavior, therefore facilitating more opportunity for resident surveillance and less opportunity for crime (Cisneros 1995). Much of the current public housing stock was designed around large, communal, open spaces. Originally intended to serve as an area for communal recreation and neighborly interaction, these spaces have become characterized as “no man’s land”. Lack of responsibility and care has left many open spaces to be considered dangerous centers of criminal activity (Taylor 1999).

The problems associated with large open spaces in public housing projects has led to the restructuring of projects to delineate less public open space and more semi-public and private space. Similar to the design concepts applied at Clason Point Gardens, the designation of space can be influential in promoting resident control over the environment in which they live. Outdoor spaces in public housing projects should be assigned and managed by the residents of the community. A clear demarcation of private and public spaces in public housing projects is necessary if tenants are to establish a sense of territoriality, ownership, and control (Taylor and Harrell 1996). When residents identify with neighborhood space, not only their individual areas but the semi-public and public spaces that are part of their overall environment, they are more likely to look after that space and keeping intruders out (Geason and Wilson 1989). Perhaps the most successful way to designate space is to design projects that promote fewer residents sharing a space and more recognizable and identifiable private space. Studies have

shown that tenants of public housing projects feel safer and take better care of property when public, semi-public, and private spaces are clearly defined (Felson and Peiser 1998).

The use of physical design in designating space clearly indicates who should be in specific areas of a neighborhood and discourages outsiders from entering areas of the neighborhood that are not for public use. Dividing and assigning spaces contributes to a feeling of community and helps foster a sense of territoriality. An increase in territorial control and the designation of all spaces in a housing development has the capability of preventing crime (Geason and Wilson 1989; Zahm 1998).

Surveillance

A reserved climate of fear has originated in many residential areas, therefore design and planning of public areas in low-income housing projects must be improved so that they are visible, accessible, and well-used. Surveillance maximizes the ability to detect suspicious persons and illegal activities. Surveillance is widely considered to be the most basic and essential element of deterring crime by making intruders feel conspicuous. Criminals do not want to be seen. Feeling that residents are keeping a careful watch over their community reduces the overall opportunity for crime. Placing physical features, activities, and people in ways that maximize the ability to see what is going on in a neighborhood discourages crime. Using the physical environment to elicit natural surveillance is a central element in creating safer public housing projects (Coleman and Painter 1996; Stollard 1991).

Natural surveillance is achieved by designing public housing in such a way that residents can keep a watchful eye on both their own spaces and semi-public and public areas. For tenants in public housing, this means being able to watch activities in communal spaces and monitor who is coming and going from the project (Geason and Wilson 1989). The idea of surveillance extends beyond the individual's property to the observance of the entire community. Barriers such as shrubs, poorly lit areas, and blind corners make it difficult to observe activity. The removal of physical barriers is key to promoting surveillance. Plantings and lighting can be planned to foster natural surveillance from inside a home or building and from outside in public and private

spaces. Open sight lines, wide angle views, decent lighting, and planting design heighten surveillance and decrease fear in public housing projects (Brantingham and Brantingham 1998).

The use of the physical environment to promote natural surveillance is an important aspect of creating secure neighborhoods. Opportunities for surveillance of public and private spaces in public housing projects enforce the concept of territoriality and strengthen neighborhood social networks. Keeping careful watch on one's community acts as a mechanism of building community in public housing as residents observe and monitor the behavior of others (Taylor and Harrell 1996).

Neighborhood Quality

A lack of safety and security in public housing projects is a representation of neighborhood distress. Physical decay compiled with unsafe conditions is an obvious cause of low neighborhood quality. Poor conditions represent neighborhood structural decline. Often linking crime and blight, neighborhood distress and physical deterioration correlates with fear of victimization as people retreat in search of places they can defend against criminal activity. Individuals live in fear and isolation while the surrounding neighborhood declines. Social scientists observe that living in a crime-ridden environment is dispiriting, demeaning, and dehumanizing to residents. Patterns of deterioration where resident-based control of street life gives way to disorderly social and physical conditions is a detriment to upholding positive neighborhood quality (Greenberg 1999).

In efforts to improve neighborhood quality, the physical image and perception of housing projects in a community are important variables in crime prevention. The appearance of conventional public housing is relatively known for its starkness, uniformity, relatively high density, and lack of amenities or embellishment (Feins, et. al. 1997). Plagued by abandoned buildings, graffiti, litter, un-kept residences, and drug usage, a majority of public housing projects in the United States are in a serious state of decline (Taylor and Harrell 1996). The rapid decline in neighborhood quality has led residents to abandon control of the built environment, further facilitating criminal activity. In many regards physical deterioration is the primary reason for such deplorable

conditions, however neighborhood perception is also a root cause of fear. The security and livability of public housing projects is derived from the resident's and surrounding neighborhood's perception of the development. Security is an interactive mixture of perception and reality. If the development appears unsafe, the more likely the project will manufacture or attract crime (Geason and Wilson 1989).

The development of large projects caused many communities to become isolated and out-of-touch with surrounding land uses (Wekerle and Whitzman 1995). As conditions grew worse in the large projects, people moved further and further away from the crime infested housing developments. Land values decreased and the quality of surrounding neighborhoods declined. Producing a domino affect of deteriorating housing and increasing crime, many public housing projects became viewed as "islands of despair" (Crowe 1991). In efforts to incorporate smaller projects into existing neighborhoods, projects must possess the capability to blend rather than perpetuate community cohesiveness through the design of unsightly housing for the masses. Architectural and systematic planning is essential to assuring suitable design which strives to incorporate public housing with the existing housing stock.

Ensuring that a public housing project is clean, well-maintained, and livable is vital to improving neighborhood quality and perceptions of residential safety and security. Physical improvements are important in reducing signs of vulnerability and improving neighborhood livability. While image and perceptions are important, the overall goal in the redesign of public housing is to create safer environments that uphold a positive image. Reversing the negative image of public housing is a difficult task, but is best achieved through design efforts that strive to blend low-income housing within the surrounding community. Strategies for giving public housing a positive image include housing design which reflects local building customs and is consistent with the best residential images of the region. Developing a sense of place and belonging through the built environment is key to high quality housing, resident safety, and reviving a sense of community (Bothwell, et. al. 1998).

Access and Circulation Patterns

The internal layouts, boundary characteristics, and traffic patters in neighborhoods may encourage or discourage different types and levels of crime. Physical changes in street design, housing, layout, and access to public and private spaces within neighborhoods have the potential to lower crime rates by affecting the activities of probable offenders and genuine users. Properly located entrances, exits, fencing, plantings, and lighting can direct resident and offender interaction while proving effective in reducing crime in public housing projects (Taylor 1999).

Streets and neighborhood layout contribute to overall neighborhood security. As experienced in the Five Oaks neighborhood, through traffic in neighborhoods is detrimental to housing values, stability, and crime rates (Crowe 1991). A sense of insecurity exists among residents as people desert streets and public spaces in search of safer environments. Studies have found that internal layouts of low-crime neighborhoods were less permeable to offenders than those found in higher crime neighborhoods (Taylor and Harrell 1996). High traffic volumes make it harder to distinguish who is a neighborhood intruder and cause residents to use public spaces less as they withdrawing from neighborly activities.

While street layout is important in deflecting crime in public housing, access to the community is also important. Building on the concept that higher traffic volumes shrink the geographic extent of resident based informal control, access of criminals to potential crime targets is an important issue. Limited full public access to public housing projects should be considered by eliminating through traffic, pedestrian cut-throughs, and unidentified entranceways. Whether gating, privatizing, or closing streets, studies have shown that entrances clearly delineated with markers to create a sense of arrival and neighborhood identity promote safer communities (Wekerle and Whitzman 1995).

Social connectedness and civic engagement contribute to the health, vitality, and stability of a community. Well-designed streets and layouts encourage residents of public housing developments to interact and take control over the community. Safer streets allow for a decrease in fear of victimization and an increased sense of community. Neighborhood streets should be friendly and inviting to pedestrian activity. Access and

circulation patterns have the ability to reduce crime in public housing projects by limiting access of intruders and promoting neighborhood control (Canin 1994).

Deterring Crime and Building Community

The principles and approaches of defensible space, identified through the application of efforts made by Oscar Newman, have substantial potential for reducing crime and fear of crime in public housing. The impact of the built environment on living conditions can greatly influence occurrences of crime. Defensible space builds upon the key urban design principle that all urban spaces should be clearly articulated, providing strong visual cues as to their functions and ownership. The implementation of defensible space principles is a collection of relatively inexpensive techniques that define spaces in a manner that discourages criminal activity. While there is no standard defensible space package for all public housing, the right mix of applications depends on the physical characteristics of individual projects. With correct application, the defensible space approach can serve as a potentially powerful tool for alleviating problems associated with crime in public housing projects. The practical success of defensible space initiatives and the fact that they can be implemented quickly and require very little public funding make defensible space an approach well worth considering as a substantial means for reducing crime and building community in public housing projects (Cisneros 1995).

CHAPTER 3
METHODOLOGY

The public housing stock in America has fallen victim to the perception and realistic characterization as generators of criminal activity. The quality of life in public housing projects is challenged by the threat of crime and victimization. Realizing the influences and motivations associated with the occurrence of crime, it is imperative to promote effective crime prevention strategies in public housing developments. The increased effectiveness of crime prevention strategies in promoting safer public housing projects is essential to neighborhood security and livability. A key component to facilitating positive living conditions is a determinant of physical setting. The physical environment has a strong impact on neighborhood perception, quality, and vitality. Designing against crime uses the physical environment to dissuade and detract opportunities for crime in residential areas. Extremely useful in creating safer public housing developments, the manipulation of the physical environment is capable of producing the perception and reality of safer communities.

Neighborhood crime and resident fear of victimization are issues effecting the safety and security of public housing communities. While many social theories, explanations, and crime prevention strategies exist, the focus of my research is to examine the components of the physical environment which correlate with an increase or decrease in criminal activity. In doing so, I intend to demonstrate that proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime in public housing projects.

The basis of my research will focus on the application of defensible space principles and levels of crime in three public housing projects. The selected projects parallel one another through the consistency of several social and physical variables. Each project includes a similar tenant make-up of low-income, minority residents. A local housing authority manages each project. The building type consists of two-story,

low-rise, townhouse style dwelling units constructed between 1950 and 1970. The project size, density, and location within the community consists of approximately 400 dwelling units, at a moderately low-density, located in an urban setting. Identifying similar demographic and physical independent variables will further enable my research to focus on the physical setting rather than the social factors which are attributed to crime.

The three public housing projects I will analyze include Jesse Jackson Townhomes (Greenville, South Carolina), Piedmont Courts (Charlotte, North Carolina), and Diggs Town (Norfolk, Virginia). While each housing development provides ample similarities in the established variables, the three selected projects offer insight and investigation into the physical characteristics that attract or deter crime. The various design applications and settings of each present an arena for detailed analysis in a comparative manner to determine the relationship between the physical environment and the occurrence of crime in public housing projects. Providing detailed project descriptions justifies the comparability of the three projects in order to support accurate and consistent analysis throughout the study (Table 1).

Table 1. Case Study Description (*Author*)

	Jesse Jackson Townhomes	***Piedmont Courts***	***Diggs Town***
City, State	Greenville, South Carolina	Charlotte, North Carolina	Norfolk, Virginia
Program or Agency			
Profile of Development or Neighborhood			
Housing Condition			
Date of Design/Redesign			
Building Type			
Number of Buildings			
Project Size			
Number of Units			
Units Per Acre			
Dwelling Size			
Number of Residents			
Density (Persons Per Acre)			
Tenant Profile			

The method for my investigation is centered on four avenues of structured analysis. Based on methods for collecting and processing information through techniques of observation and data collection, the emphasis of my research will consist of accurately measuring crime and fear of crime in relation to the physical environment. Assessing the existence of defensible space principles, examining local perceptions, and processing available crime data in relation to each project allows for the formation of a descriptive analysis which supports the identification of issues and conclusions.

The first area of analysis identifies and records the physical elements of the three public housing projects selected. I intend to conduct a physical survey of each housing community. I will create a visual inventory through pictures, drawings, and site plans. Documenting noticeable and influential factors of the built environment on overall neighborhood safety, I will itemize the selected elements to produce an effective analysis of neighborhood setting. Acknowledging different physical features of each community, a physical survey will aid in determining elements respective to the occurrence of crime. For example, one development may be entirely walled or gated while another may have no definite neighborhood boundary. Do gated communities promote safer residential environments? Whether dealing with elements like gates or walls, it is important to identify the physical features of each of the three projects to determine how the physical environment relates to crime.

Building on the physical survey, the second method for study consists of a physical analysis of the application of defensible space principles (Table 2). Focusing on the design principles explored by previous studies (Newman 1972), I will evaluate each neighborhood in regards to the effectiveness of producing a defended community. The perception of a defended community promotes resident control over the built environment in an attempt to reduce opportunities for crime. Establishing a checklist to evaluate design principles, I will observe and record the use of defensible space techniques in each community. Based on the design principles discussed in previous research, the criteria established in examining the communities will further assess concepts of natural surveillance, designation of space, and access and circulation patterns.

Table 2. Defensible Space Applications (*Author*)

Application	***Jesse Jackson Townhomes***	***Piedmont Courts***	***Diggs Town***
Project Size and Building Type			
Building Type			
Project Size			
Density			
Total Units			
Total Buildings			
Total Residents			
Entranceway			
Designation of Space			
Public Space			
Semi-Public Space			
Private Space			
Surveillance			
Visibility			
Landscape			
Lighting			
Blind Corners			
“Eyes on the Street”			
Neighborhood Quality			
Surrounding Uses			
Neighborhood Design			
Architecture			
Access and Circulation Patterns			
Traffic Patterns			
Additional Elements			
Police			
Management			
Resident Association			
Social Programs			

Similar to the method mentioned in identifying and recording the physical elements of each community, I will also create a visual inventory of effective defensible space applications through pictures, drawings, and site plans.

The third area of study focuses on local perceptions of crime in the given communities. The primary method of analysis will be based on local interviews. The purpose of conducting interviews is to establish a connection between neighborhood perceptions and crime. Often a difficult component to measure, interviews concerning the overall perception of crime and fear of crime in relation to the physical environment in public housing communities will strengthen my study. I intend to interview community leaders, city officials, property managers (local housing authority officials), and community patrol officers. The questions asked will vary slightly depending on who is being interviewed.

The final method for analysis is based on data collection. I intend to collect detailed information on reported and recorded crimes. While looking at crime statistics, I will also examine the frequency and consistency of residents reporting crimes. Residents may report acts of criminal activity which did not actually concern an illegal act but rather the perception that a criminal act may have the possibility to occur. The intent of this data collection is to measure actual crime in relation to fear of crime. The use of local and national crime statistics is essential to determine the levels and rates of criminal activity in each of the public housing communities. Realizing that available local police data varies, I intend to collect and compare information in a detailed and consistent manner. Looking at the types of crimes, victim and offender characteristics, and frequency of criminal activity, the data collected will correspond with the physical design and neighborhood perception elements of my study.

Each of these methods is equally important in my research. The results achieved by each will be used in a comprehensive manner to demonstrate the influence the physical setting of public housing projects has on crime. The data collected will be thoroughly analyzed in a quantitative and qualitative manner to produce a substantial argument over the impact of defensible space principles applied to the built environment

to promote safer communities. Providing a descriptive analysis of physical design characteristics, neighborhood conditions, community perceptions, and crime statistics, the research conducted will allow for the identification of specific issues and conclusions related to the impact of the physical environment and criminal activity.

CHAPTER 4
JESSE JACKSON TOWNHOMES

Project Background

The need for affordable housing in the Greenville, South Carolina escalated as available housing for low-income residents declined in the 1940s. Realizing the desperate need for appropriate housing for all income levels, the City of Greenville and Greenville Housing Authority (GHA) constructed a variety of government assisted residential communities in the 1950s. Woodland and Pearce Homes was the first public housing available for low-income whites and Fieldcrest Village was the first designated public housing for low-income blacks. Both communities were constructed at the same and were designed as townhomes, but the community designed for the white population was built on more land, making the community less dense. Construction of the buildings at Woodland-Pearce presented a less institutional design component. Fieldcrest Village on the other hand was built on less land but contained more dwelling units. The community was considered to have a much higher density than the white counterpart community and was constructed in a way which represented an institutional design style.

As the first government subsidized housing in Greenville, South Carolina for blacks, Fieldcrest Village was considered a good place to live. The public housing project was adjacent to Nicholtown, a historically strong and active traditional black neighborhood. The geographical location of Fieldcrest Village provided numerous job opportunities for the residents. The neighborhood was placed along the public bus line, offering transportation opportunities for residents. Stable employment existed along Pleasantburg Drive, one of the city's major commercial thoroughfares. Many of the women living in Fieldcrest Village were domestic workers for the upper income white families living in nearby Cleveland Park (Sweeney 2006).

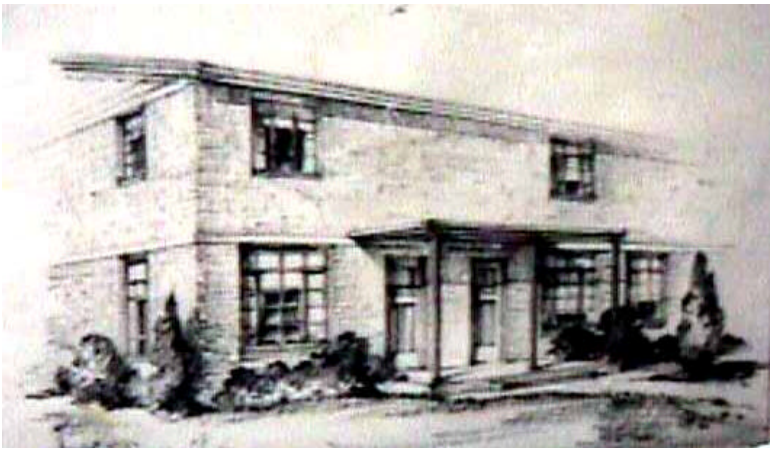


Figure 1. Fieldcrest Village, 1951 (*Greenville Housing Authority*)

The community of Fieldcrest Village had many positive attributes at the time of construction, but as time passed conditions worsened in the neighborhood. A haven for drugs and criminal activity, recognized problems occurring in the community stimulated continual efforts for neighborhood improvements. One of the most recognized attempts to revitalize the community occurred in 1989. After consideration by the City of Greenville, Greenville Housing Authority, and the residents of Fieldcrest Village, the name of the project was changed to Jesse Jackson Townhomes. Renamed for the social and religious activist, Jesse Jackson, Jackson lived in Fieldcrest Village for a short time during his childhood. Honored as the community's most famous resident, the community was renamed in hopes of reviving the neighborhood and dissolving the common negative perceptions of problems in the community. At the dedication ceremony in December of 1989, Jackson remembered pleasant memories of living in the community in hopes of one day transforming the neighborhood into once again a livable environment. "We want to change the character of the place, not just the name," Jackson said. "We have to find solutions to the problems of the underclass that we have been grappling with for so long. We want to make this a model community, an oasis in the drug culture" (Isbell and Burns 1989). Recognizing that "the problems of the area are complex, and they have defied solutions for years", Jackson has been an advocate to improving the living conditions within the public housing project (Isbell and Burns 1989).

While the name of the community may have changed, the problems that characterized Fieldcrest Village now characterize Jesse Jackson Townhomes. An element of an on-going effort to improve the community, conditions of crime, safety, and livability continue to decline. Today, Jesse Jackson Townhomes is the largest public housing project located within the City of Greenville. Plagued with problems of drugs, crime, and violence, the project continues to fall further into a state of decline and disrepair.

Project Location

Jesse Jackson Townhomes is located approximately two miles southeast of the City of Greenville's central business district. The major roadways surrounding the complex are Laurens Road to the north, Pleasantburg Drive to the east, Faris Road and Cleveland Avenue to the south, and McDaniel Avenue to the west. The project is surrounded by various commercial and residential land uses. Land uses adjacent to the community consist primarily of single family dwelling units to the north, south, and west. Numerous office parks and commercial developments are present along Pleasantburg Drive. The Phillis Wheatley Community Center and Beck Middle School are located directly adjacent to the community. Jesse Jackson Townhomes are considered to be part of the Nicholtown neighborhood.

Project Profile

Approximately 841 residents currently occupy the 340 units in Jesse Jackson Townhomes. More than half (439) are children under the age of 18. The average age of adults living in the community is 32 and is most often female residents (92%). Over 65% of the residents have lived in the development for five years or less, while almost 11% have lived in the community for over twenty years. The average income is $6379 and the average rent in Jesse Jackson Townhomes is $72.00 (Jesse Jackson Townhomes Fact Sheet 2004).

Project Management

The Greenville Housing Authority (GHA) provides affordable housing and additional services to a majority of low-income families and adults living within Greenville County. Established in 1938 as a provision of the National Housing Act of 1937, the GHA has served and improved living conditions within Greenville for over 60 years. The agency strives to enhance the quality of life of its residents through social programs as well as housing opportunities. Initiatives involving a Resident Advisory Board and Family Self-Sufficiency program strongly enhance and empower residents. The GHA works in cooperation with the City of Greenville Community Development department to further serve the need of supplying affordable housing opportunities for Greenville's low-income residents.

The GHA has had early success obtaining and utilizing the HUD Hope VI program to fund the redesign of the Woodland and Pearce public housing community. Built at the same time as the Jesse Jackson Townhome, this federally funded redevelopment project was largely considered a success when it replaced barrack style homes with 100 owner-occupied single family homes, 45 townhouses, and 34 garden style apartments (City of Greenville Consolidated Plan 2004).

The GHA anticipates a need for more public housing as Greenville continues to have dramatic growth. GHA anticipates that it will need to make an aditional 250 homes pavailable by 2010. GHA has refocused its organization on initiating development of programs and educational opportunites designed to assist the residents occupying these communities in their efforts to improve the quality of life for themselves and their children and to break the cycle of government depedency. GHA hopes that these programs will reduce the amount of subdized housing that GHA needs to provide.

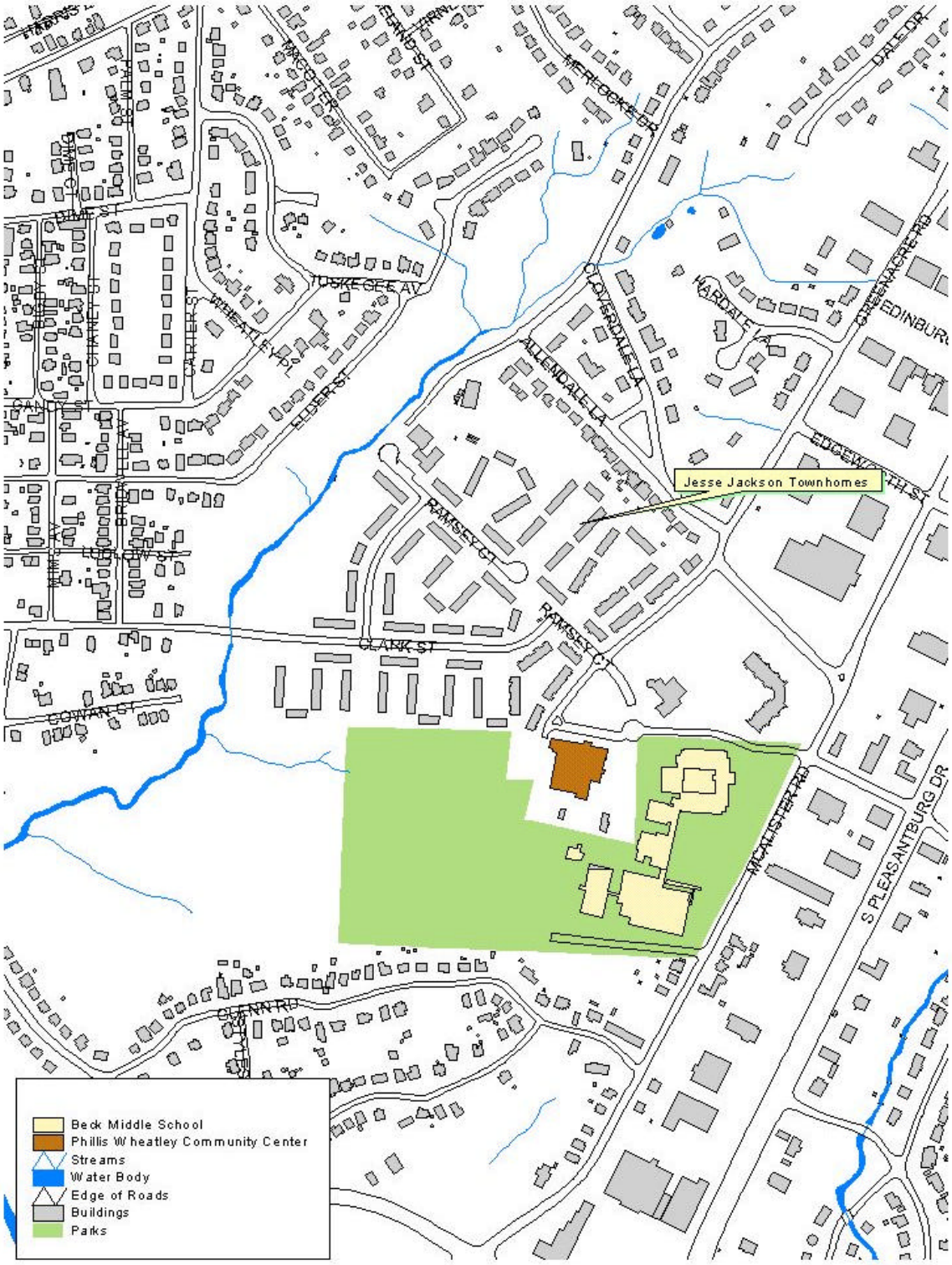


Figure 2. Jesse Jackson Townhomes, Project Location (*City of Greenville*)

As one of eight public housing communities in Greenville, Jesse Jackson Townhomes has an on-site management staff in addition to staffing assistance and coordination within the overall agency. A property manager and assistant operate out of an office in the community. The management office is a refurbished residential unit which has been transformed into an office. The office is shared with the community patrol officer assigned to serve Jesse Jackson Townhomes. A property maintenance office and workshop borders the community, offering on-site assistance in dealing with physical repairs and resident requests within the community.

Social Programs

Due to the ideal location of Jesse Jackson Townhomes in relationship to education and community opportunities, there are many social programs established to serve the residents of the community. The Phillis Wheatley Community Center provides a variety of programs for adults and children living in the community. With a multitude of resources available, a majority of youth programs focus on after school tutoring, mentoring, and drug prevention. Various partnerships with agencies, businesses, and educational institutions in the area provide numerous opportunities for the residents of Jesse Jackson Townhomes. The Family Self-Sufficiency program supported and implemented by the GHA, offers social and economic mobility for the residents of Jesse Jackson Townhomes through economic independence. From job training and computer classes to day care and self-help programs, the social programs available to the residents of the community are varied and plentiful. Although many programs exist to enhance and empower residents, many of the residents of Jesse Jackson Townhomes are not involved in social programs. While the residents may want to live in a better community, they are further isolating themselves socially by not participating in provided activities (Hayes 2006).

Neighborhood Design and Site Conditions

The design of Jesse Jackson Townhomes demonstrates a living environment equipped with physical constraints that attract or induce criminal activities. A detailed site analysis is an important aspect to the study of the community, primarily in regards to

existing conditions and current deficiencies. The documentation of the physical environment at Jesse Jackson Townhomes is extremely important when analyzing the community (Table 4).

The design and layout of Jesse Jackson Townhomes places barrack-style housing structures throughout the community. Similar to other public housing projects built during this time, the structures are scattered throughout the site in a uniform manner. The buildings face one another and various parking facilities are located between the buildings. The parking areas form smaller community units within the larger community by organizing the structures around parking areas. Some buildings are placed close to the street. Sidewalks and curbs separate the buildings from the roadways. Other buildings are set back from the street, limiting access and visibility.

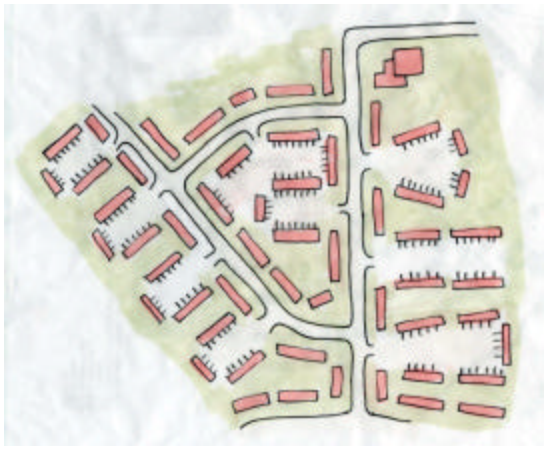
Figure 3. Jesse Jackson Townhomes, Building Design and Placement (*Author*)

Table 3. Jesse Jackson Townhomes Physical Description (*Author*)

Jesse Jackson Townhomes	
City, State	Greenville, South Carolina
Program or Agency	Greenville Housing Authority (GHA)
Profile of Development or Neighborhood	Declining neighborhood conditions; crime has led to various concerns about safety and security in the neighborhood. Slated for Hope VI revitalization
Housing Condition	Traditional
Date of Design/Redesign	1952
Building Type	2-story, brick, barrack-style, "super block"
Number of Buildings	54
Project Size	26 acres
Number of Units	340
Units Per Acre	13
Dwelling Size	1 – 5 Bedrooms
Number of Residents	841
Density (Persons Per Acre)	32
Tenant Profile	Low-income, minority residents (welfare recipients)

The original design of Jesse Jackson Townhomes established a viable street pattern and network which connected the public housing project to the surrounding communities. The design of the development was based on a modified grid pattern, allowing for several points of access to the community. As mentioned, the residential buildings in the community are aligned around the streets and adjoining parking areas. The streets are narrow and limit on street parking. Over the years local area traffic increased in the community. A lack of residential collector streets for surrounding communities led to an increased amount of vehicular traffic passing through the neighborhood. Cut through traffic became an issue, both in terms of speed, safety, and volume of traffic. As a result, the street pattern throughout Jesse Jackson Townhomes was re-directed in 1994. Today there is only one formal entrance into the community and several cul-de-sacs are now placed to deter unnecessary and unwarranted vehicular traffic.

Before



After

Figure 4. Jesse Jackson Townhomes, Street Pattern (*Author*)

Defensible Space Applications

Jesse Jackson Townhomes is regarded as a physically distressed and economically depressed community (Jesse Jackson Townhomes Fact Sheet 2001). Several physical elements contribute to unsafe and dangerous living conditions. The 1950s barrack-style design produces an institutional image of uniformity and distress. The community lacks a distinct sense of place, therefore reducing resident pride in the neighborhood. This lack of community reiterates that Jesse Jackson Townhomes is a traditional public housing "project" rather than a "neighborhood". The physical environment clearly contributes to the deplorable housing conditions in Greenville's largest public housing project.

Project Size and Building Type

The original design of Jesse Jackson Townhomes was intended to provide housing for over 1500 residents. Consisting of 348 units, the buildings constructed in the public housing project resembled institutional military barracks. The two-story red brick structures have double hung sash windows with brown, metal window frames. Temporary air conditioning units are placed in many of the windows. Concrete slab front porches are covered with pitched roofs and supported by metal columns. Each unit has an individual front door and designated entryway. There are no interior entrance hallways to any of the units, therefore giving residents privacy in their unit. Past efforts to revitalize the community led to a slight reduction of density in the community. Eight units were transformed into offices in the 1980s leaving 340 designated residential units. Jesse Jackson Townhomes is regarded as the largest public housing project in Greenville.

Table 4. Jesse Jackson Townhomes, Defensible Space Evaluation (*Author*)

Jesse Jackson Townhomes	
Defensible Space Application	**Description**
Project Size and Building Type	
Building Type	Two-story, brick structures
Project Size	26 acres
Density	Moderate
Total Units	340
Total Buildings	54
Total Residents	841
Entranceway	One per unit
Designation of Space	
Public Space	Yes (not identifiable use)
Semi-Public Space	No (no designated space connecting units to public space)
Private Space	No (no designated private space - individual units)
Surveillance	
Visibility	Building pattern limits visibility
Landscape	Barren (earth yards), some areas overgrown
Lighting	Inadequate street lighting (not enough)
Blind Corners	Areas surrounding buildings
“Eyes on the Street”	Small porches offer some opportunities
Neighborhood Quality	
Surrounding Uses	Residential/Commercial
Neighborhood Design	Cul-de-sacs (eliminated grid pattern)
Architecture	Separates project from vernacular Greenville architecture
Classification	“Project”
Access and Circulation Patterns	
Access	One formal entrance
Traffic Patterns	2 – way traffic
Traffic Calming	Speed humps, cul-de-sacs
Additional Elements	
Police	Community Patrol Officer
Management	On-site (4 staff members)
Maintenance	On-site (10 staff members)
Resident Association	Not active
Social Programs	Variety of programs provided, resident participation limited

Figure 5. Jesse Jackson Townhomes, Building Type (*Author*)

Designation of Space

There is little differentiation between public and private space in Jesse Jackson Townhomes. The only designated private space is within the individual units. For the most part, the entire community is perceived as being public space. For this reason, the physical setting of Jesse Jackson Townhomes promotes no sense of ownership or territoriality. The residents of the community have no element of control over the activities which occur around their dwelling units. The lack of designation of space has truly led to community decline in Jesse Jackson Townhomes. Lacking a sense of ownership, the residents of the complex assume no territorial control over their living environment. They become captives in their own homes as crime and violence openly occurs around the dwelling units. People loiter and assemble anywhere within the complex due to the lack of designated space. Space originally designated as green space and recreational areas for the community have become vast areas of “no-man’s land”.

Serving no designated public purpose, the land has become an acceptable location for drug dealing and other illegal activities. The back yards of the units open onto this no-man's land. Areas between buildings are unidentifiable spaces and have become havens for criminal activity.

Figure 6. Jesse Jackson Townhomes, Designation of Space (*Author*)

Surveillance

The concept of natural surveillance in relation to defensible space requires resident participation and watch over the community. Corresponding with designation of space, the residents of Jesse Jackson Townhomes have limited opportunities for natural surveillance. There is no designated exterior space for residents to formerly interact and watch over the community. The only opportunity for natural surveillance within the community involves resident observations inside individual dwelling units. A valuable

component of surveillance, site lighting, is lacking in the community. Adequate lighting is a serious safety concern in Jesse Jackson Townhomes. A limited amount of typical street lights attempt to illuminate the community, but the lighting is constantly disrupted by gun fire. At night the community is extremely dark and criminal activity is common. Outside lights are provided to each individual unit but residents seldom turn on the lights. The physical conditions in the community severely limit opportunities for natural surveillance.

Figure 7. Jesse Jackson Townhomes, Natural Surveillance (*Author*)

Neighborhood Quality

Designed as a "project" rather than a "neighborhood", the physical conditions of Jesse Jackson Townhomes present a community of neighborhood decline and distress. Living conditions within the community continue to decrease as resident safety and

security are jeopardized by incidences of crime and illegal activities. Witnessing numerous crimes in the community, residents have removed themselves from taking preventative actions against crime. A sense of community and community pride is absent in the complex and is enhanced through the physical decline of the community. Trash and garbage litter the complex while trespassing and physical destruction are common occurrences in the neighborhood. Designed to promote an institutional design style, the architecture prevalent in the community visually and psychologically separates the project from the surrounding community. The physical plan of the community creates an image of isolation from Greenville society due to the form and design of the community.

Figure 8. Jesse Jackson Townhomes, Neighborhood Quality (*Author*)

Access and Circulation Patterns

Access and circulation patterns have been a central element in addressing crime problems in Jesse Jackson Townhomes. The original design of the community was situated along a modified grid pattern. The streets within the complex connected the community to the surrounding neighborhoods. Over the years local area planning efforts were not able to provide residential collector streets. As a result several of the streets in the complex became used as connecting streets to the major collectors and arterial roads in the area. An increasing amount of vehicular traffic driving through the community became a concern in the 1990s. Cut-through traffic and neighborhood access became an issue and concern of the GHA and Greenville Police Department because of the difficulty of apprehending suspects linked to criminal activities in the area. In 1993 a traffic study was requested and conducted through the Greenville Housing Authority. In a partnership with the Housing Authority, City of Greenville, and Jesse Jackson Townhomes residents, a detailed transportation study was conducted (Dyar 1995).

Figure 9. Jesse Jackson Townhomes, Street Pattern (*City of Greenville*)

Realizing the increasing problems associated with transportation issues within the community, the study was designed to encompass alternative elements and solutions to traffic concerns. Residents played an active role in the traffic study, providing vital information on resident concerns and traffic issues affecting the community. Based on discussions with various residents living in the community, community leaders advocated the desire to have a peaceful and quiet neighborhood, especially in terms of safety for themselves and their children. Residents perceived traffic and crime as disruptive forces to the quality of life in the community. Vehicular volume, vehicular speed, cut-through traffic, and cruising vehicles were identified problems. Conversations with police officers assigned to the neighborhood and the City of Greenville Chief of Police agreed with the traffic concerns expressed by the residents and indicated that if traffic could be better managed, positive impacts on crime in Jesse Jackson Townhomes would occur. The study confirmed that reducing the vehicular volume of traffic throughout the community would improve the quality of life and foster resident safety in the community. Recognizing the concerns by the citizens of the community, the Greenville Housing Authority saw the need for roadway improvements in a desire for the complex to truly function as a neighborhood. Demonstrated from a traffic perspective, the transformation of the "project" to a "neighborhood" would involve the elimination of cut-through and cruising traffic.

In January 1994, a plan was implemented on a trial basis as a result of the traffic study conducted in the community. The plan encompassed several elements and improvement to the community, including:

1. Construction of three cul-de-sacs to limit access to the community (done on a trial basis with barricades and signing).
2. Removal of a confusing one way stop at an intersection.
3. Installation of a four way stop at an intersection.
4. Signing and marking improvements to control parking and improve safety (Dyar 2001).

After a six month trial basis, the community voted to endorse the project on a permanent basis. As a result, various traffic alterations and roadway improvements along with two cul-de-sacs placed on Ramsey Court to discourage cut-through traffic.

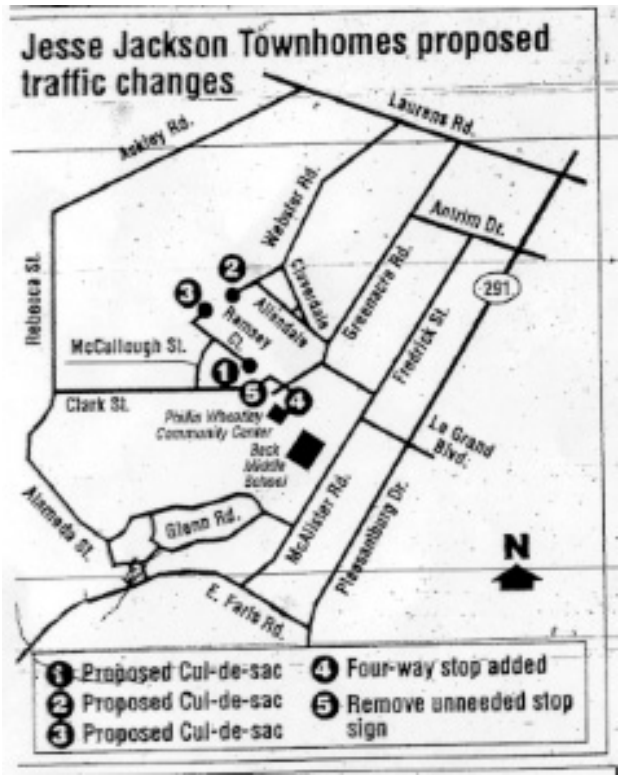


Figure 10. Jesse Jackson Townhomes, Traffic Changes (*Greenville News*)

The traffic improvements at Jesse Jackson Townhomes have been well-received by the community and act as a central component of addressing defensible space issues in the community. Marynell Hammond, past-president of the Jesse Jackson Townhomes resident association is appreciative of the efforts made in the community to curb traffic. "It is really, really working. The residents say the traffic has slowed down on the main street . . . the barricades (temporary street closings) are making it easier for police to make arrests. You can really tell the difference. The drug dealers used to have so many ways to get in an out of Jesse Jackson Townhomes" (Wilson 1994).

Figure 11. Jesse Jackson Townhomes, Access and Circulation Patterns (*Author*)

The street pattern improvements and alterations at Jesse Jackson Townhomes have helped in decreasing traffic problems within the community. In addition to numerous cul-de-sacs and additional intersection controls, various traffic calming devices (speed humps) have been installed in the community to reduce speeding. While the street pattern in the community has been drastically modified to produce a community with limited access, the changes were perceived as necessary by the community to reduce the deplorable conditions consistent with traffic and safety in the community.

Resident Perceptions

Stephen L. Evans lived in Jesse Jackson Townhomes for five years as a child. Then known as Fieldcrest Village, Evans has only happy memories of the time he spent living in the community. His memories are filled with a vision of a neighborhood where children played in the streets, people sat on their front porches, and residents planted

flower beds and grass in their yards. There was a dominant sense of community pride when Evans lived in the public housing project in the 1970s. Residents looked out for one another and a village network formed as families worked together to better themselves and the community. Reflective of older generations living in the community, a sense of hope and inspiration exposed younger residents to the positive attributes associated with employment, education, respect, and personal success (Evans 2006).

Current conditions in Jesse Jackson Townhomes are perceived as dangerous and unsafe. Residents no longer take pride in their living environment as they further lose control of the community. In relation to neighborhood quality, the residents of Jesse Jackson Townhomes recognize crime and safety as an integral concern associated with quality of life in the community. Long-term residents have pride in their neighborhood and many actively work to improve the living conditions of the community. The elderly population is a strong force for resident involvement and activism in the community. Planting flowers in their yards and leaving their porch lights on at night, many of the elderly residents living in Jesse Jackson Townhomes play an active role in reducing crime in the community (Sweeney 2006).

In relation to the concepts installed through defensible space principles, a sense of ownership, natural surveillance, and designation of space are integral factors in promoting resident involvement in the community. Pride in the neighborhood and a connection with the community facilitate the need for residents to take an active role in assuring the safety and security of their living in environment. While studies show that active residents can reduce crime, overall resident perceptions are dominated by criminal activity in the community. Often times the residents of Jesse Jackson Townhomes recognize that there is a problem of crime in the neighborhood, but many times are afraid to report crimes. Residents live their lives in fear, therefore further isolating and reinforcing the deplorable conditions of the unsafe community. Residents want to make Jesse Jackson Townhomes a better community within the City of Greenville, but are hesitant to get involved with established crime prevention programs.

Crime Data and Analysis

Crime is an increasing problem in Greenville's largest single-site public housing community. The rate and occurrence of criminal activity in Jesse Jackson Townhomes has led to the perception and reality of an unsafe and dangerous neighborhood. The community is widely recognized as one of the worst crime areas in Greenville (White 2006).

There is a community patrol officer within the Greenville Police Department who patrols Jesse Jackson Townhomes. There is a constant problem with keeping a designated police officer in the community at all times. Many of the officers within the Greenville Police Department do not want to patrol the area, making it an undesirable place to work. For this reason, over the years the community patrol officer has not had a large presence in the community. A feeling of distrust exists between the residents of the community and the community patrol officer. Residents are afraid to report crimes due to potential consequences and common occurrences of crime in the area. Many crimes go unreported because of this fear. Police patrol in Jesse Jackson Townhomes is outnumbered by the amount of criminal activities occurring in the community. The only enforcement tactic that has helped in reducing crime has been the process of a multitude of officers performing a crime sweep in the area (White 2006).

People not living in the community commit a majority of the crimes reported in Jesse Jackson Townhomes. Ranging from 85 to 90%, many of the problems occurring in the community are the result of outside sources of activity. Although various attempts have been made to reduce cut-through traffic, cruising, and speeding, the community remains easily accessible for drive through drug traffic. The community presents an image of a place to hide and escape from the police. Criminals often run within the confines of Jesse Jackson Townhomes to escape police pursuit. An element of organized crime exists in the community as people warn one another of police patrol areas. A variety of problems occur as a result of people loitering around units with nothing to do. Many of the problems in the community are a reflective of petty arguments, but a majority of the crimes are related to gun and drug activity. Corporal Gladys White, the community patrol officer assigned to Jesse Jackson Townhomes believes, "Residents are going to do what they are going to do. I just want to find a solution to it" (White 2006).

Table 5. Crime Comparisons in Jesse Jackson Townhomes, 2003 - 2004
(*City of Greenville Police Department*)

Offense Classification	2003	2004	Percent Change **2003-2004**
Accident	1	0	-100%
Abandoned Vehicle	3	1	-66%
Assault & Battery	23	17	-26%
Assault: Law Officer	1	2	+100%
Assault: Simple	23	11	-52%
Assault: Intent to Kill	3	4	+33%
Auto-breaking/Auto-theft	5	6	+20%
Breach of Trust	4	5	+25%
Burglary	23	17	-26%
Crack Possession	1	9	>100%
Criminal Domestic Violence	24	14	-41%
Criminal Sexual Conduct	2	8	>100%
Disorderly Conduct/Drunk	5	6	+20%
Disturbance	5	6	+20%
Driving Under Suspension	3	4	+33%
Driving Under the Influence	1	0	-100%
False Name	1	0	-100%
House Arrest	1	1	NC
Fire Call	1	2	+100%
Firearm	8	6	-25%
Narcotics	1	0	-100%
Forgery	1	0	-100%
Harassment	2	0	<100%
Larceny	28	20	-28%
Lynching	1	1	NC
Malicious Damage	36	48	+33%
Marijuana: Possession	2	6	>100%
Murder	0	1	+100%
Prostitution	0	1	+100%
Public Drunkenness	2	4	+100%
Recovered Vehicle	4	2	-100%
Resisting Arrest	3	0	<100%
Robbery: Armed	5	6	+20%
Runaway	4	4	NC
Suicide Attempt	1	4	>100%
Threats	4	1	-75%
Trespassing	39	37	-5%
Unlawful Weapon	1	1	NC
Vandalism	1	0	-100%
Violation of Parole	1	0	-100%
Other	53	51	-3%
Total Offenses	327	306	-6%

The pattern of crime prevention in Jesse Jackson Townhomes has not been pro-active. Crime prevention has become a method of 'catching problems as they catch you'. Neighborhood crime presents a vicious cycle of problems and activities in the community, with no immediate solution available to solve the problems. The failure of crime prevention programs and implementation strategies has led to resident distrust of the police and a continued element of fear in the community (White 2006).

Jesse Jackson Townhomes Analysis

Clearly the problems present in Jesse Jackson Townhomes are not all components of the conditions of the physical environment. The inherent problems are a combination of various factors - - physical, social, and psychological. The Greenville Housing Authority and City of Greenville Police Department have attempted numerous efforts to reduce crime in the community but many crime preventions methods have failed. Realizing the importance of reducing crime in Jesse Jackson Townhomes, the physical environment cannot be ignored as a possible element in reducing crime and increasing resident safety within the community.

In 2005 GHA received a $20,000,000 Hope VI grant to provide seed money for the redevelopment of Jesse Jackson Townhomes. It is likely that this redevelopment will continue the pattern of success established by other Hope VI recipients. Initial plans for the rebuild call for the development of mixed use neighborhood that will provide subsidized homes along with market rate housing and also businesses which should provide employment opportunities for residents. The redevelopment puts forward designs strongly informed by the ideas of defensible space. This will undoubtedly lead to a safer more complete community.

CHAPTER 5
PIEDMONT COURTS

Project Background

Piedmont Courts was the first public housing community developed in Charlotte, North Carolina. Built in 1941, the community consisted of 368 residential units. Developed during the time of racial segregation, Piedmont Courts was designed to house a portion of the low-income white population living in Charlotte; a similar community, Fairview Homes, was intended to serve the low-income black population.

Figure 12. Piedmont Courts, 1941 (*The Charlotte-Mecklenberg Story, 2001*)

The design strategy implemented at Piedmont Courts created prototypical rectangular blocks of brick townhouse apartments. The structures were arranged on land previously littered with dilapidated shacks and shanties. Each two-story structure was

adorned with a gabled slate roof and massive chimneys to replicate the popular elements of Colonial-Revival architecture. Large double-hung sash windows provided light and air to each unit, and small metal-columned porches shielded the building entryways. Based on the "Garden City" design approach, the community provided interior walkways and play areas separate from automobile traffic and parking lots. The design was of solid construction and resembled middle-class apartment blocks in Charlotte (Hanchett 1985).

A housing prototype when first built, the design of Piedmont Courts developed to serve an intense concentration of low-income residents. Located amongst an economically unstable section of Charlotte, the community faced numerous social and physical constraints. The predominantly white public housing project was integrated as black residents moved into the community. Over time, living conditions in Piedmont Courts. Crime increased and neighborhood quality steadily declined.

In 1988, declining physical conditions led to an extensive modernization effort in Piedmont Courts. The density of the community was drastically reduced. Six structures were demolished, eliminating over 100 dwelling units. Project renovations produced minimal alterations and structural changes to the existing buildings. No new residential units were constructed. Awnings, porches, and some balconies were added to the structures, but interior renovations dominated the modernization process. Today the community remains a traditional public housing project based on an institutional style of design.

Project Location

Piedmont Courts is adjacent to downtown Charlotte. The community is bound by I-277 to the west, Seaboard railroad to the north, 10th Street to the south, and Seigle Avenue to the east. Set in a traditionally economic unstable area of town, Piedmont Courts is considered to be part of the section of North Charlotte known as Belmont.

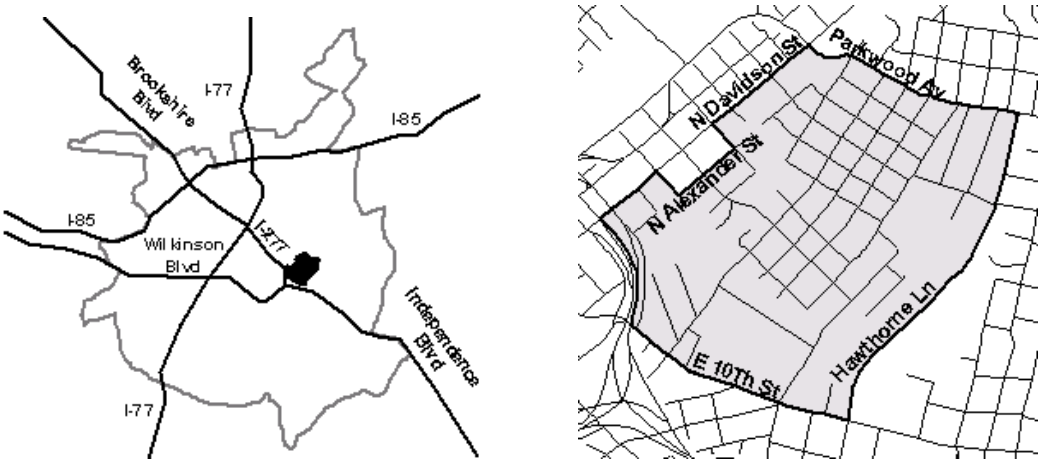


Figure 13. Piedmont Courts, Project Location
(*Charlotte-Mecklenburg Police Department*)

The community is situated amongst various low-income residential, commercial, and industrial land uses. While adjacent to downtown, the neighborhood is relatively removed from the central core of the city. The surrounding freeway and boundaries of Piedmont Courts physically separate the community from downtown. The low-income neighborhood now known as First Ward links Piedmont Courts to downtown. Located along the freeway, First Ward has come to represent the possibilities for housing reform in the city. Redeveloped through the Hope VI program into market rate housing, the neighborhood represents the strenuous efforts within the City of Charlotte to revitalize its low-income communities.

Project Profile

A total of 625 residents currently live in Piedmont Courts. Predominately an African-American community, a majority of the tenants of Piedmont Courts are extremely low-income residents. Over 61% of the residents are living below the poverty level. The median household income in the public housing community is $12,503, compared to the city's overall median household income of $41,385. The family structure within Piedmont Courts is primarily single family head of household. A high percentage is female head of households. The average family size is 2.8, with an average of 1.6 children per family. Of the 625 residents, 36% are under the age of 18.

Approximately 7% of the tenants are over the age of 65 (2000 census Data). The socio-economic status of the residents of Piedmont Courts clearly demonstrates the declining social and economic conditions prevalent in the community.

Project Management

There was an increasing need for affordable housing in Charlotte in the 1930s. An era of social and economic unrest for many Americans throughout the country, it was determined that "unsanitary or unsafe inhabited dwelling accommodations existed in Charlotte, and that there is a lack of safe or sanitary dwelling accommodations in Charlotte and surrounding areas" (CHA Annual Report 2003). Limited housing opportunities for low-income residents contributed to a "lack of safe and sanitary dwelling accommodations in the City of Charlotte, North Carolina, available at rents which persons of low income can afford compels, such persons to occupy overcrowded and congested dwelling accommodations . . . conditions cause an increase in and spread of disease and crime . . . the clearance and reconstruction of the areas in which unsanitary and unsafe housing conditions exist are public uses and purposes . . . now constitutes an emergency, necessary to the immediate preservation of the public peace, health and safety" (CHA Annual Report 2003). Recognizing the need for housing reform in the municipality the Charlotte Housing Authority was founded on June 14, 1939.

Today, the Charlotte Housing Authority (CHA) is a public housing agency which provides housing opportunities and programs for low-income residents living within the city and surrounding areas. The mission of the CHA is to "serve those Charlotte families from diverse social and economic backgrounds with housing needs requiring the services provided by the Authority . . . support and assist these families to enhance their quality of life while requiring those who are capable or who can develop capability to transition from dependency to self sufficiency and economic independence" (CHA Annual Report 2003). Providing Section 8 vouchers, scattered site housing, and conventional public housing, the CHA owns 35 properties. Today the agency operates and manages 3,156 units of conventional public housing in 29 developments scattered throughout the city. The total number of residents served by the CHA is 22,400 with 10,800 residents living in public housing. There are currently 4,000 Charlotte families on the public housing

waiting list. Piedmont Courts is one of the 29 public housing communities operated by the CHA. The neighborhood has an on-site management staff to assist with tenant needs and services. Consisting of a property manager and assistant manager, the management staff has an active presence in the community (CHA Annual Report 2000).

Social Programs

The Charlotte Housing Authority (CHA) promotes various social opportunities and programs to serve the residents living in public housing. The CHA participates in HUD's Family Self Sufficiency (FSS) program along with several other economic advancement programs. The CHA's Resident Services Department is responsible for assessing the needs of residents and developing, coordinating, administering, monitoring and evaluating social and human service programs and services affecting residents. The mission of the department is to endure that all families and individuals have every opportunity to achieve their highest level of economic and social independence (CHA Annual Report 2003).

Many social programs are available to the residents of Piedmont Courts. The YWCA Day Care Center adjoins the community offering child services and other programs. The Seigle Avenue Presbyterian Church, located within walking distance of the community, offers various services and support to the residents of Piedmont Courts. Children and youth involvement programs offer structured activities to improve social conditions for the community's youth. The Gateway Housing Program, Food Bank, Community Services Center, Community School of the Arts, and the Safe Neighborhood Awareness Program are examples of community activities, services, and programs which increase and encourage socio-economic mobilization. Numerous training and economic advancement opportunities are present and accessible to the residents of Piedmont Courts. The social programs in place at the community provide a variety of advancement opportunities to all residents of Piedmont Courts.

Neighborhood Design and Site Conditions

A documentation of the physical setting in Piedmont Courts is extremely important when analyzing the physical conditions of the community. Based on building

design and site layout, Piedmont Courts is a prime example of a traditional public housing project. A densely populated low-income community, the current status of Piedmont Courts facilitates and demonstrates the effect of the physical environment on crime and safety in the neighborhood.

There are 30 buildings in Piedmont Courts, each consisting of approximately six to eight residential units. Individual units range from one to three bedrooms, with 35 one bedroom, 114 two bedroom, and 93 three bedroom apartments. The buildings are two-story, red brick townhouse structures. Resembling the typical barrack-style construction of conventional public housing, the buildings at Piedmont Courts are uniform, barren, dark, and institutional. A majority of the units have metal awnings with metal columns surrounding the doorways. There is one front door per unit which faces onto either an open area or parking lot and one back door per unit opens onto the backs of surrounding buildings. A concrete sidewalk and concrete slab porch acts as the entranceway to each unit. The buildings have double-hung sash windows lined with black frames. The 1988 modernization efforts in the community resulted in some units having a second story balcony. The units with balconies are scattered throughout the development. Past renovation efforts have also helped to improve handicap accessibility.

The physical layout and design of Piedmont Courts organizes the structures in a uniform fashion. A large "super-block" design, the buildings front one another and open onto communal green spaces. The area behind and between buildings is left open and the use of this space is unassigned. The street pattern clearly designates the building layout and form by controlling access to the buildings. Similar in shape to a horseshoe, the buildings are situated around the roadways and are organized into “spurs”. The spurs organize a set of buildings which are removed and setback from the road. The buildings share a central parking area. The streets in Piedmont Courts are lined with sidewalks, curbs, and gutters.

Landscape features in the community are practically non-existent. Some random trees placed within the community sit amongst a barren landscape of compacted earth and weeds. Grass grows in some areas, but foot traffic has disrupted plant growth. Low-cut shrubs line the fronts of the residential buildings, but minimal plantings have produced a desolate and barren image of the neighborhood.

Table 6. Piedmont Courts Physical Description (*Author*)

Piedmont Courts	
City, State	Charlotte, North Carolina
Program or Agency	Charlotte Housing Authority (CHA)
Profile of Development or Neighborhood	Deplorable neighborhood conditions; crime has led to several redesign efforts; project now undergoing complete HOPE VI revitalization
Housing Condition	Transition
Date of Design/Redesign	1941/1988
Building Type	2-story, brick, barrack-style, “super block”
Number of Buildings	30
Project Size	22.6 acres
Number of Units	242
Units Per Acre	10
Dwelling Size	1 – 3 Bedrooms
Number of Residents	625
Density (Persons Per Acre)	27
Tenant Profile	Low-income, minority residents (welfare recipients)

Figure 14. Piedmont Courts, Buildings (*Randal Beaver, Charlotte Housing Authority*)

Figure 15. Piedmont Courts, Site Plan (*Author*)

Defensible Space Applied

The physical environment and current living conditions at Piedmont Courts produces an unsafe and unsecured environment. Building conditions and site layout contribute to numerous accounts of crime and illegal activities. Several factors related to the physical setting strongly enhance the level of safety in the community. The examination of Piedmont Courts in relation to the application of defensible space principles presents an analysis which demonstrates the negative effects the built environment can have on neighborhood quality and livability.

Project Size and Building Type

Piedmont Courts presents a physical setting collectively consistent with defensible space principles. Originally consisting of 368 units, building density was greatly reduced during 1988 modernization efforts. Today the project consists of 242 units, reflecting a moderate density public housing project. Covering 22.6 acres, there is an average of 10.7 units per acre. The two-story, rectangular structures allow for well-distinguished individual units. Each unit has an individual entrance, therefore eliminating any interior hallways. Recognizing that fewer people per entryway helps in preventing crime, the building type at Piedmont Courts facilitates a setting of identifiable access to the individual units. While the project size and building type of Piedmont Courts promotes some central elements of defensible space principles, the building layout and design is representative of design constraints and safety limitations associated with the construction of traditional public housing.

Table 7. Piedmont Courts, Defensible Space Evaluation (*Author*)

Piedmont Courts	
Defensible Space Application	**Description**
Project Size and Building Type	
Building Type	Two-story, brick structures
Project Size	22.6 acres
Density	Moderate
Total Units	242
Total Buildings	30
Total Residents	625
Entranceway	One per unit
Designation of Space	
Public Space	Yes (no designated use)
Semi-Public Space	No (not defined)
Private Space	No (individual units)
Surveillance	
Visibility	No clear visibility from units
Landscape	Barren, not maintained
Lighting	Standard street lighting ineffective
Blind Corners	Areas surrounding buildings
“Eyes on the Street”	No opportunities associated with units
Neighborhood Quality	
Surrounding Uses	Residential/Industrial
Neighborhood Design	Super-blocks
Architecture	Traditional public housing townhomes
Classification	“Project”
Access and Circulation Patterns	
Access	One entrance, one exit
Traffic Patterns	1 – way traffic
Traffic Calming	Speed humps
Additional Elements	
Police	No assigned Community Patrol Officer
Management	On-site (2 staff members)
Maintenance	On-site
Resident Association	Not active
Social Programs	Variety of programs provided

Figure 16. Piedmont Courts, Project Size and Building Type
(*Randal Beaver, Charlotte Housing Authority*)

Designation of Space

The layout and design of Piedmont Courts produces an anonymous environment of public space. The original intent of the community's design was to foster community recreational areas and greenspace, however, the use of such spaces remains unclear. Many un-identifiable areas in Piedmont Courts are characterized as "no-man's land". The eight acres of undevelopable land in the neighborhood is a primary example of the problems associated with unidentified space in the community. Set in the flood plain, the area remains an open field set behind the buildings. No designated use has been declared for the site, therefore allowing an expanded area of no-man's land. Recognized as an area of concern, the undeveloped land has become a setting for illegal activities.

Residents have no control over the areas around their units. Yards are desolate with few plantings and minimal grass. The barren landscape is a result of having no ownership of space and therefore results in decreased community pride. Due to the lack of designated private and public space, residents have removed themselves from the

physical upkeep of the neighborhoods, therefore allowing crime and other illegal activities to occur in these areas.

Figure 17. Piedmont Courts, Designation of Space
(*Randal Beaver, Charlotte Housing Authority*)

A community of unidentified space, a limited degree of ownership or resident territoriality exists in Piedmont Courts. Open areas are rampant with criminal activity because there is no way to monitor and maintain the public spaces. Most of the open space is hidden behind and between the residential structures, therefore making it difficult to watch and patrol from surrounding streets. While crime is recognized as a problem in the community, the residents are unable to assemble to take action due to a missing presence and element of ownership of space. Feeling no connection to the community, residents fail to prevent and correct visible problems in the community.

Surveillance

The design and site plan for Piedmont Courts allows for a limited degree of natural surveillance. A concept indicative of defensible space principles, the physical setting of the community solicits an environment not accommodating to surveillance. In reference to designation of space, many areas within the community are hidden and shielded by the surrounding buildings. Removed from the street and major surrounding thoroughfares, many of the public spaces in Piedmont Courts are not easily accessible or visible. Areas not seen from the street are difficult to maintain and control, therefore denying the concept of "eyes on the street".

A minimal amount of lighting is present in Piedmont Courts. The streets of the community have industrial style street lights, but the lights are often damaged as a result of people shooting the lights out with guns. Each unit has a porch light but not all residents turn on their lights. As a result of ineffective street lighting and poorly utilized porch lighting, the community remains relatively dark. Limited lighting and corresponding pockets of darkness weaken visibility, producing unsafe and unmonitored venues for criminal activity.

Residents of Piedmont Courts have become captives within their own homes and therefore are not taking an active part in watching over their own community. The fear of crime and victimization limits resident control and involvement in community crime prevention efforts. While police routinely patrol the community, an integral element in the application of defensible space principles constitutes resident involvement.

Figure 18. Piedmont Courts, Site Lighting
(*Randal Beaver, Charlotte Housing Authority*)

Neighborhood Quality

Neighborhood quality is often a difficult element to measure. From site visits, observations, and neighborhood perceptions, the quality of life in Piedmont Courts appears relatively low. While the residential buildings are of sound brick build and construction, the institutional style of the buildings clearly delineates the public housing community from the rest of the city. The architecture and design elements applied at Piedmont Courts do not blend with the common vernacular architecture of Charlotte. The surrounding land uses of the community clearly represent a declining area of town, placed within industrial and commercial land uses. Limited and constrained within the boundaries of a freeway, railroad, and flood plain, the faces psychological and physical barriers. While design and land use are integral components of determining neighborhood quality, perhaps resident perceptions and actions help to more clearly define the quality of life in the neighborhood. The physical decline and lack of maintenance in Piedmont Courts represents an environment prone to diminishing control

and management. Lack of designed landscape, the need for building repair, and general neighborhood upkeep presents a physical setting of decline and despair. As a result, a sense of pride and sense of community dissolves as residents further isolate themselves from the community as a whole.

Figure 19. Piedmont Courts, Neighborhood Quality
(*Randal Beaver, Charlotte Housing Authority*)

Access and Circulation Patterns

Limited access is representative of the street pattern in Piedmont Courts. There is only one way in and one way out of the community. Both entrance and exit are accessible from Seigle Avenue. While the limited entrance and exit to the community help in monitoring traffic flow, the street pattern is not designed to accommodate heavy amounts of vehicular traffic. Similar to other public housing projects built during this time, the community was designed for pedestrian rather than vehicular traffic. There is

no available or designated parking associated with individual residential units. On street parking and various central parking facilities are available to serve the residents with vehicles. The streets are relatively narrow in width and various traffic calming devices such as speed humps have been installed to slow traffic.

There is little control over pedestrian access to the neighborhood. A perimeter fence surrounds the community, limiting pedestrian and vehicular access. Sidewalks are prevalent in the community, yet compacted soil walking paths have become the norm for pedestrian travel within the community. Organized in vast territories of no-man's land, people walk freely through these undefined areas. The pedestrian walkways are difficult to monitor because the sidewalks are away from the street and behind the buildings. A sidewalk runs behind the residential units which often elicits unregulated and illegal activities behind the buildings. Foot traffic within the community has come to facilitate people not living in the development to cut through the community.

Figure 20. Piedmont Courts, Fencing (*Randal Beaver, Charlotte Housing Authority*)

Resident Perceptions

The residents of Piedmont Courts are an integral component to determining levels of crime and fear associated with living in the community. The fear of crime and victimization is a community faced by many of the tenants. The overall resident perceptions relate to conditions of the physical environment as a result of housing and

neighborhood quality. The deteriorating physical structure of Piedmont courts reflects and determines resident perceptions of the community in which they live.

Resident participation and interaction is limited at Piedmont Courts. In recent years there has not been an organized or active resident association in the neighborhood. High amounts of crime and lack of control within the community have stifled resident involvement. Many residents want to make the neighborhood safer but some feel efforts are hopeless. As a result, residents rely primarily on the housing authority and the on-site management staff to address neighborhood issues and concerns. Forming an relationship of trust and respect with the housing officials, the management staff has strongly encouraged the residents to consider forming a neighborhood association. Believing that a strong sense of neighborhood organization can reduce crime and increase a sense of community, the housing authority recognizes the need for the residents of Piedmont Courts to work together to build a better community. Formulated to address resident concerns and foster resident interaction, a neighborhood association was formed in Piedmont Courts in February 2001.

Public perception has greatly weakened as a result of overall housing quality and high crime. The negative perceptions attributed to the quality of life in the community have led to an increase in vacancies. Of the 242 residential units in Piedmont Courts, only 190 were occupied in late 2004. A total of 52 units remain vacant (Beaver 2001). The high vacancy rate in Piedmont Courts clearly demonstrates the declining quality of life and deplorable living conditions found in the community.

A recent survey done by the Charlotte Housing Authority to determine levels of safety and security in the city's public housing projects, identified issues and concerns of residents living in Piedmont Courts. Safety and security issues were major concerns identified by the residents of Piedmont Courts. Over 40% of the residents were not satisfied with the overall safety and security of the public housing project. Numerous questions were asked to determine the extent to which various activities were neighborhood problems. Of the questions asked, residents identified drugs, public drinking, loitering, and prostitution to be major concerns in the community. The most common problem identified by the residents were gun shots. Over 60% of those

interviewed reported gun shots to be a major detriment to neighborhood safety and security.

Perhaps one of the best representations of resident perceptions and neighborhood safety in Piedmont Courts is conveyed in the writings of one of the community's young residents. Ashley Hill, a student at Piedmont Middle School, writes: "The place where I live is called Piedmont Courts. I would not recommend that anybody live there . . . my neighborhood can be dangerous at times, and if you have not lived in a neighborhood like that then you will not know how to be when you see or here certain things . . . lucky for me, I am finally moving" (Hill 2003).

Crime Data and Analysis

The location of Piedmont Courts within the City of Charlotte places the public housing project in an economically unstable area. Considered part of the Belmont neighborhood, Piedmont Courts is surrounded by pockets of poverty and despair. Situated to the north of downtown Charlotte, the section of the city is characterized by high crime and social discrimination. The community surrounding Piedmont Courts presents an image of safety and social constraints. Belmont's high crime rate transcends to Piedmont Courts, categorizing the neighborhood by increasing crime and violence.

Table 8. Piedmont Courts, Crime Rates, 2003 – 2004
(*Charlotte-Mecklenburg Police Department*)

	2003	2004	+/-	% Change
Population	562	625	63	11%
Part I Offenses	41	54	13	32%
Part II Offenses	123	113	-10	-8%
Total Offenses	164	167	3	2%

The high degree of criminal activity present in Piedmont Courts is best discussed utilizing and analyzing available crime data. From 2003 to 2004, Piedmont Courts experienced an overall increase in the number of reported criminal offenses. For Part I offenses, which are the most serious and violent of crimes, Piedmont Courts reported a 32% increase from 2003. The crime trend for Piedmont Courts varies from 1999 to 2004. In comparison to the other six large family public housing projects in the City of Charlotte, Piedmont Courts has one of the highest crime rates. The violent, juvenile, and property crime rate in Piedmont Courts well exceed the overall crime rate for the City of Charlotte (Piedmont Courts Fact Sheet 2004).

Table 9. Piedmont Courts, Total Offenses, 1999 - 2004
(*Charlotte-Mecklenburg Police Department*)

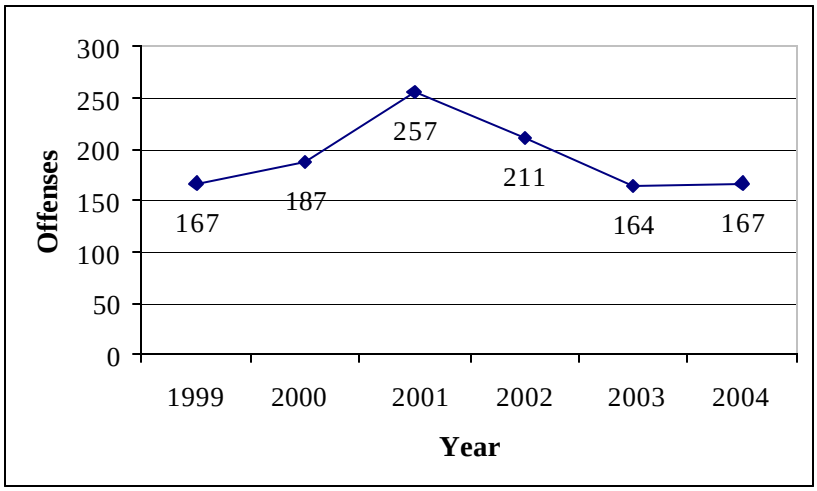


Table 10. Piedmont Courts, Crime Comparisons (2000 *Census*)

	Piedmont Courts	City of Charlotte
Violent Crime Rate	4.7	1.0
Juvenile Crime Rate	3.1	1.0
Property Crime Rate	1.4	1.0

The management team at Piedmont Courts reports that drugs are one of the community's biggest problems. High crime induces associated with drug activity are reflective of young men selling drugs in the community. When looking at the demographics of the community, this poses an interesting question. The largest portion of crimes committed in Piedmont Courts is from non-residents. In a community primarily comprised of single-family mothers, young males who are not legally living in the project are coming into the community and committing crimes. A total of 85% of criminal activity occurring in the neighborhood is from someone living outside the community or an unauthorized resident living in the community (Beaver 2005).

In dealing with issues of crime and safety in the community, Piedmont Courts does not have a designated community patrol officer. While the police have a presence in the community through routine patrols, police patrol is limited in action. The lack of an aggressive, active community patrol effort clearly demonstrated the need for a full-time assigned community patrol officer in Piedmont Courts. The primary established element for crime prevention and safety in the community is the CHA's Resident Safety Department. The department focuses on providing safe housing for all residents, investigating crimes in the community, providing residents with crime prevention measures and methods, and empowering residents to be involved in the revitalization of crime prevention measures in the community (CHA Annual Report 2003).

The Community Safety Supervisor for the Charlotte Housing Authority believes that the increasing crime rate in Piedmont Courts is not caused by one solitary reason, but a combination of numerous conditions. Authorities attribute the problems of crime in Piedmont Courts to physical design, social constraints, and surrounding land uses. Many argue that the physical build of the residential structures in Piedmont Courts are sound, sturdy, and not the root of the problem. The problem arises in that there are too many people of a depressed socio-economic nature living in the community. This has the capability to lead to a self-perpetuating state of neighborhood decline. A lack of education, job opportunities, and socio-economic mobility further constrain the population living in Piedmont Courts. The surrounding areas and land uses adjacent to the community, consisting of low-income residential, commercial, and industrial land

uses further contribute to the situation of an increasing crime rate in Piedmont Courts (Beaver 2005).

Piedmont Courts Analysis

The current status of Piedmont Courts constitutes a declining public housing project desperately in need of physical improvements and social mobilization. Crime and fear of victimization are probable considerations in the future stability of the community. Recognizing the needs, conditions, and concerns currently effecting the quality of life in Piedmont Courts, the Charlotte Housing Authority applied for and received a substantial revitalization grant through the HUD Hope VI program. Hope VI is a federal program enacted by the U.S. Congress in 1992 to address isolation, despair, and poverty in severely distressed public housing communities. Its goal is to create livable, affordable public housing that is an asset to the community, rather than a liability. The focus of the Hope VI program is to transform the physical structures of public housing while transforming the lives of its residents through community services (Hope VI Grant Application 2003). Eligible revitalization efforts applicable for Hope VI funding include resident relocation, demolition of buildings, major rehabilitation, new construction, infrastructure development, and other physical improvements. In addition to physical improvements, funding can be designated for social support services and community service programs.

The deteriorating conditions prevalent in Piedmont Courts coupled with a high vacancy rate, criminal activity, poor housing conditions, and high density made the community a prime candidate for Hope VI funding. As of Feb. 2006 the Charlotte Housing Authority has relocated all residents and construction has just begun. The community will become a mixed-income community, housing very low, low, and moderate-income families. The 242 units currently on-site will be demolished and replaced with new structures. The new structures proposed for the community include townhomes, apartments, and elderly homes. The potential number of replacement units is still being debated, but it is probable that the density of the community will be greatly reduced.

Figure 21. Piedmont Courts, Hope VI Site Plan (*Charlotte Housing Authority*)

The design of the new Piedmont Courts community was be determined by the input and vision of the stakeholders and residents who participated in the planning process conducted by the project's master planner. The new community of varying housing types and styles will include multi-family rental units, single family for-sale homes, senior rental units, and various community amenities such as recreational space and greenways. The rebuild of the community will focus on regaining resident control and truly transforming the "project" into a "neighborhood". The application of defensible space principles in the planning and design of the community will produce a physical setting conducive to socio-economic improvement and advancement. The revitalization efforts

soon to take place at Piedmont Courts will transform Charlotte's oldest public housing project into a safe, secure, and viable neighborhood.

CHAPTER 6
DIGGS TOWN

Project Background

After World War II, the City of Norfolk, Virginia realized the need to provide affordable housing opportunities to accommodate the increasing numbers of low-income residents living in the city. Redevelopment and displacement efforts throughout the city caused 2,930 low-income families to move into newly developed public housing projects (Cosco 1995). Deplorable housing conditions led to the development of Diggs Town in 1952. As the first public housing project built in Norfolk under the U.S. Housing Act of 1949, Diggs Town consisted of 428 dwelling units to accommodate 1,200 minority residents. Considered an innovative method for housing low-income segments of the population, the project was characterized by large "super block" street patterns with a common greenspace placed between two-story rectangular buildings. The buildings resembled military barracks and appeared institutional in style. The development of Diggs Town offered an immediate solution to Norfolk's shortage of affordable housing.

The design of Diggs Town contrived no variation in architectural details, no clear distinctions between front and back yards, and no easily distinguishable spaces for community interaction. The physical setting and concentration of low-income residents produced an environment conducive to criminal activity. Public areas lacked appropriate location, scale, and character. Common areas were out of public view and failed to provide safe and diverse recreation activity space for the community. Outdoor spaces were difficult for residents to use and for management to maintain. Foot traffic subdivided the desolate landscape and made it increasingly difficult to plant or maintain the land around the dwelling units. Residents feared for their lives and their children’s safety, feeling as if they had lost total control of their community (UDA 1990). Like many public housing projects typical of the era, Diggs Town fell victim to despair, disrepair, and physical degradation.

Figure 22. Diggs Town, 1970 (*Norfolk Redevelopment and Housing Authority*)

Project Location

Diggs Town is located across the Elizabeth River from Downtown Norfolk. The major roadways surrounding the complex are Campostella Road, Melon Street, and Indian River Road. The project is bound by a low-income single family neighborhood, Oakleaf Forest (a public housing community), and the City of Chesapeake. The neighborhood is severely removed from the central core of the city due to its separation by the Elizabeth River.

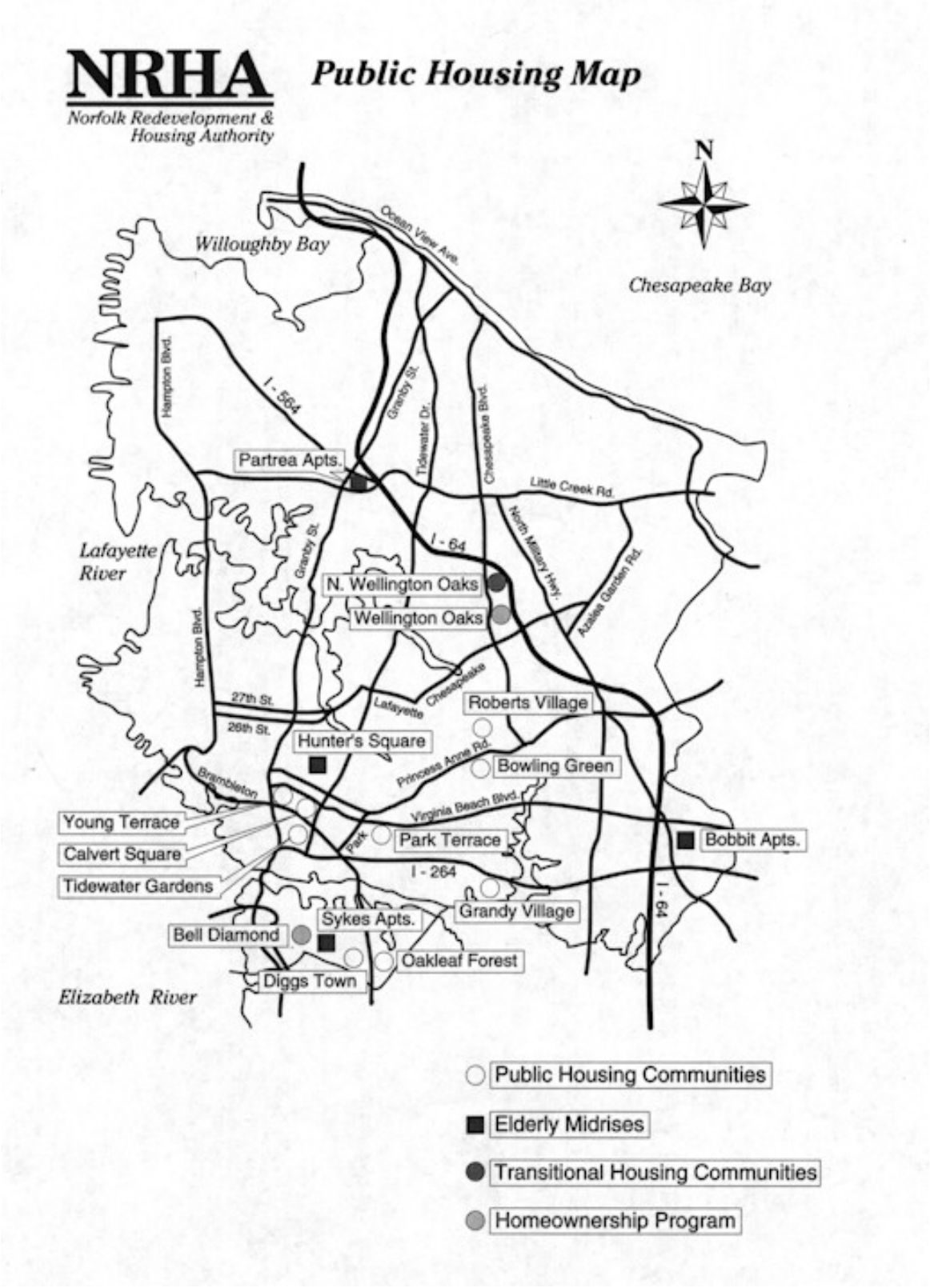


Figure 23. Diggs Town, Project Location
(*Norfolk Redevelopment and Housing Authority*)

Planning Process

Living conditions in Diggs Town were rapidly declining in the early 1990s. Drugs, crime, and safety were several issues that plagued the community. There was no clear definition of public or private space. Gangs took over available open space as residents became virtual prisoners in their individual units. It was becoming increasingly difficult for residents to plant and maintain gardens or lawns because of uncontrolled traffic patterns. There was no clear distinction between front and back yards. "Common" areas appeared remote from the street and public view. The form of buildings was neutral, making it difficult to distinguish one unit from another. Units faced onto un-protected common lawns rather than active streets. Like many public housing projects in America, Diggs Town was designed as a "project" and not a "neighborhood" (UDA 1992).

Realizing the deplorable living conditions in Diggs Town, the City of Norfolk embarked on a strenuous revitalization effort in the community. In 1990 the Norfolk Redevelopment and Housing Authority (NRHA) initiated a $17 million redevelopment effort to transform Diggs Town from a “project” to a “neighborhood”. Appropriate financial backing was leveraged by public housing modernization funds through the U.S. Department of Housing and Urban Development (HUD) Comprehensive Improvement Assistance Program (CIAP). Urban Design Associates (UDA), an architecture and planning firm based in Pittsburgh, Pennsylvania, was awarded the contract to create a master plan and implementation strategy for the redesign of the site and rehabilitation of the buildings. Guided by the approaches and principles of New Urbanism and traditional neighborhood design, architect and designer Raymond Gindroz, co-founder of UDA, provided an insightful plan and design scheme which transformed the desolate barracks of Diggs Town into a neighborhood of recognizable streets, porches, gardens, and play areas (Bothwell 1998).

A key element in the planning process for the redesign of Diggs Town was resident involvement in all phases of the project. Throughout the six month planning process of Diggs Town, regularly scheduled meetings took place with residents, designers, and NRHA staff. The process of resident participation helped project

designers to understand community problems, but the process itself helped to restore a sense of community through resident interaction. The residents of Diggs Town were key to defining the problems and establishing the process that led to the redesign of the community.

Acknowledging the declining status of Diggs Town, the design team and residents of the community sought to develop a redesign strategy to create neighborhood cohesion, bolster safety, and foster a sense of community pride. The redesign, rather than demolition of Diggs Town, was intended to:

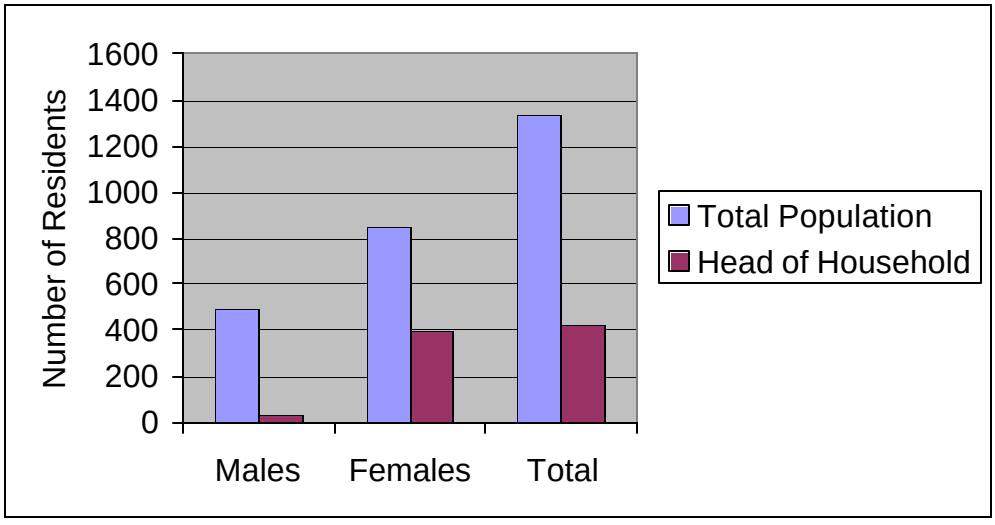
1. Transform units into individual houses.
2. Transform common areas into clearly defined front yards and back yards.
3. Provide streets, frontages, and addresses.
4. Clearly articulate public infrastructure of streets and public parks.
5. Treat the project as a neighborhood and community (UDA 1990).

The central component of the redesign of Diggs Town was the fundamental need for residents to regain control over outdoor spaces. The design techniques implemented in the redevelopment of Diggs Town were based on an "architecture of engagement". Providing residents with a physical environment in which social capital may flourish, architecture of engagement is defined as a design method that organizes space in a way that maximizes social interaction so that individuals can build the trust which underlies social order. Physical design constitutes an independent variable that influences social behavior. Physical design stimulates social interaction, social interaction encourages resident participation in civic life, and civic life contributes to an increase in quality of life in the community. The physical environment in which one lives proves essential to economic and social life by linking the individual to society. The design team of Diggs Town strongly advocated the importance of architecture and design in facilitating safer living environments. The urban design plan proposed for Diggs Town was intended to serve as a demonstration project to coordinate physical design changes with social programs enabling residents to create a safe, stable neighborhood and to increase economic and social mobility (Bothwell 1998; UDA 1990).

Project Profile

Economic, social, and demographic information is an important consideration in the examination of Diggs Town. A community comprised of approximately 1300 residents, Diggs Town offers affordable housing accommodations to over 400 Norfolk families. Situated on 30 acres of land, the population density of the community is of moderate proportion in relation to total population and available land. A total of 1,339 residents live in Diggs Town. Many of Diggs Town's tenants are welfare recipients. The majority of residents (711) are under the age of 18. There are 493 males and 846 females living in the community. Of the 420 Diggs Town households, 27 males are heads of households compared to 393 females. Primarily single parent households, the average family size in Diggs Town is 3.3 (James 2006). The housing stock of the community is regarded to be in good condition, providing adequate sized units to accommodate various family sizes. Diggs Town provides housing for primarily low-income minority residents.

Table 11. Diggs Town, Head of Household Comparisons, 2005
(*Diggs Town Police Beat Profile*)



Project Management

The Norfolk Redevelopment and Housing Authority (NRHA) provides housing, redevelopment, and conservation programs in Norfolk, Virginia. Created in 1940 in response to overcrowding and substandard conditions, NRHA is tasked with providing and managing safe, decent, and affordable housing within the city. Continually involved in community building, housing, and redevelopment initiatives, the organization acts in accordance with its mission to improve the physical and social environment, thereby enabling the people and the neighborhoods of Norfolk to reach their greatest potential. Today NRHA has a total of nine public housing communities, four elderly and disabled mid-rise dwellings, four apartment buildings, scattered site, and Section 8 housing. There are 4,081 total assisted housing units and 2,541 units of Section 8 certificates/vouchers. Approximately 11,001 people live in NRHA's public housing communities and 6,299 reside in Section 8 housing. NRHA's communities boast a low-crime rate in reflection of efforts made by citizen patrols, community patrol officers, and NRHA staff (NRHA 2005).

As one of nine public housing projects, Diggs Town has a centralized management staff assigned to directly serve the community. Comprised of a Property Manager, Assistant Manager, Community Service Specialist, Maintenance Supervisor, and Security Specialist, the management team at Diggs Town provides tenant services, social programs, and resident assistance. The management staff is well-received and respected by the residents of Diggs Town, therefore establishing a positive presence and association within the community. The management office is located in a central, visible location easily accessible to all residents. The office resembles a small town hall set on a deep lawn that functions as a common greenspace (Bothwell 1998).

Social Programs

The NRHA sponsors a variety of social programs and activities available to residents of its communities. Parenting classes, adult education programs, job training, and other opportunities are examples of activities sponsored by the housing authority. All of the available programs and services encourage resident involvement in an attempt to improve social and economic conditions (NRHA 2005).

Perhaps one of the most effective programs in Diggs Town has been the community's self-sufficiency program. In 1993 the Diggs Town Economic Empowerment Demonstration program (DEED) was established in the community. A partnership effort involving the NRHA, Norfolk Division of Social Services, Diggs Town Tenant Management Committee, and Norfolk Public Schools, the program promotes self-sufficiency through economic independence. Today implemented under HUD's Family Self-Sufficiency program (FSS), the program focuses on a family self-sufficiency plan, employment and education counseling, and family and personal counseling.

Realizing the limitations for economic betterment installed through the Federal welfare system, the program offers welfare waivers, work incentives, rent incentives, job training, childcare, and a comprehensive support system. The waivers give welfare recipients an opportunity to work and not immediately lose welfare assistance. Addressing the traditional problem of rents escalating as income increases, a common disincentive against working or saving money, the incentives provide program participants an opportunity to work and save money in an escrow account regulated by the housing authority. Diggs Town has a $354 cap on monthly rents. Within the first two years, 125 residents became actively involved in the program. By the second year, 33 participants had achieved a sufficient income, enabling them to no longer need welfare assistance. In 1998 there were 199 participants (174 families) in the self-sufficiency program. The Diggs Town FSS program currently has 203 participants with a total escrow balance of $258,551. The average individual escrow balance is $2,600 and the highest individual escrow balance is $12,000. Over 77% of Diggs Town participants are employed (UDA 1990; Bothwell 1998; Major 2006).

The DEED program (FSS) is the primary social element instated in accordance with the redesign of Diggs Town. Recognizing the social implications associated with problems in housing conditions, the program evolved as a method to alleviate social and economic distress. The program has been highly successful and since 1995 more than 100 families have moved out of public housing into individual homes or rental properties. Employment and average household income have increased. The NRHA continues to support the FSS program in Diggs Town and the program greatly contributes to the social successes experienced with the redesign of the community.

Along with fostering resident advancement, the various social programs sponsored by the housing authority strongly encourage resident involvement in the community. By resident involvement and interest in social programs, neighborhood pride and togetherness emerge. A primary example in Diggs Town is the neighborhood clean-up and resident patrol activities. An annual clean-up campaign amongst residents is organized to clean-up the neighborhood and promote neighborhood pride. The resident patrol program in Diggs Town involves active volunteers who participate and encourage various neighborhood programs. One particular program involves residents who patrol the neighborhood every morning to assure the safety of children walking to school. The program success clearly demonstrates resident involvement and community pride associated with Diggs Town (Major 2006).

Neighborhood Design and Site Conditions

The physical elements present in Diggs Town constitute a considerable respect for the physical environment. It is important to examine and document the physical conditions of the community in order to form a more accurate description of defensible space principles. Site conditions and observations preclude a detailed description of the physical design and justification for the redesign of the public housing project.

Applying the concept that dwellings and their sites should be designed in an architectural style that draws on the best of regional and local tradition while allowing for individual expression, the buildings at Diggs Town were redesigned to resemble a house in a traditional Norfolk neighborhood. Perhaps the installation of front porches are the most noticeable attribute imperative to the redesign of the community, however many additional architectural and design elements contribute to the successful redesign of the structures. The basis of structural improvements involved transforming the units into individual residences. Select colors were used on trim, panels, doors, and shutters to offer variety yet uniformity. Existing gray window frames were replaced with heavy, solid white frames. Producing a visually prominent attribute, the rather simple architectural detailing of the originally barrack-style structures advocate a character and image of the brick buildings which more closely resemble a typical neighborhood.

Table 12. Diggs Town Physical Description (*Author*)

Diggs Town	
City, State	Norfolk, Virginia
Program or Agency	Norfolk Redevelopment and Housing Authority (NRHA)
Profile of Development or Neighborhood	Poor neighborhood conditions; crime led to comprehensive redesign of project using defensible space principles; today neighborhood provides a safe and secure living environment
Housing Condition	Transformation
Date of Design/Redesign	1952/1994
Building Type	2-story, brick, “neighborhood” design
Number of Buildings	68
Project Size	30 acres
Number of Units	420
Units Per Acre	14
Dwelling Size	2 - 4 Bedrooms
Number of Residents	1,339
Density (Persons Per Acre)	44
Tenant Profile	Low-income, minority residents (welfare recipients)

Figure 24. Diggs Town, Building Design
(*Norfolk Redevelopment and Housing Authority*)

Through landscape design, fencing, and walkways, the redesign of Diggs Town re-organizes the communal spaces around the dwelling units. Rather than physically re-arranging the existing structures to accommodate a more communal residential setting, the buildings were left in tact while the spaces around them were transformed. Explored through the establishment of a "village" concept, the redesign of Diggs Town features 16 villages. The village idea consists of buildings grouped around communal back yards that are secured through a combination of fencing and the configuration of buildings. The backs of the buildings are visible from nearby streets and sidewalks. Patios, yard fences, and storage buildings define a private space for each individual unit within the communal back yard areas. Play areas for children are included within the back yard areas, making the playgrounds easily seen, accessible, and monitored by residents.

Figure 25. Diggs Town, "Village" (*Norfolk Redevelopment and Housing Authority*)

The application of the "village" concept produces a smaller community of neighboring residents within the larger, overall community of Diggs Town. The village setting serves as the basis for the tenant management system, social programs, and various neighborhood activities. Reflective of the block system apparent through the redesign of several streets in the community, the village image suggests a neighborhood rather than a collection of anonymous buildings with empty yards (Bothwell 1998; UDA 1992).

Respective of traditional public housing, the original design of Diggs Town consisted of a large scale "super block" street pattern. Corresponding with the goal to transform the "project" into a "neighborhood", the redesign of the street pattern in Diggs Town was imperative in achieving this goal. The redesigned street pattern creates a series of normal 'blocks' and provides an apparent linkage between Diggs Town and adjacent neighborhoods. The current street pattern is more in scale with traditional

Norfolk neighborhoods and evokes a greater sense of community within the neighborhood.

All of the streets and lanes in Diggs Town are lined with curbs and sidewalks. The streets, curbs, and sidewalks help to define building setbacks and residential blocks. Eliminating un-warranted open space and providing access to central areas of the community, pedestrian pathways allow for designated walking areas where the dimensions between buildings are too narrow to accommodate a street or lane. The paths have the same curb detail as the sidewalks along the streets and are either brick set in concrete or textured concrete. The numerous pedestrian pathways constitute a high degree of pedestrian access and create a walkable community uncommon in most public housing projects. Along with curbs and sidewalks, the streets are lined with indigenous shade trees which provide shelter, define front yards, and help to create a sense of community. Streets give the smaller scale block system more coherence and identity pertaining to an increased sense of community (Bothwell 1998; UDA 1992).

Since the redesign of the community required minimal construction or structural changes, much of the natural, mature landscape of Diggs Town was maintained. In total, the renovation efforts removed only 42 existing trees. Overgrown plants and shrubbery were removed or trimmed to increase safety. In order to maximize the visual effect of natural vegetation in the community, groups of large trees (primarily evergreens) were placed in key places, such as the center of common spaces where no trees previously existed. Lawns were re-established where years of foot traffic had created barren soil. By designating individual yards, residents are able to plant and embellish front yards. Consisting of shade trees, loblolly pines, flowering trees, and evergreen hedges, the landscape of Diggs Town appears lively and green year-round.

Figure 26. Diggs Town, Site Plan Before Redesign
(*Norfolk Redevelopment and Housing Authority*)

Figure 27. Diggs Town, Site Plan After Redesign
(*Norfolk Redevelopment and Housing Authority*)

Defensible Space Applied

The planning concept incorporated at Diggs Town followed the general goal of transforming the traditional public housing "project" into a "neighborhood". Like many large public housing projects, Diggs Town was built in the 1950s as an institutional environment In recent years, it had become plagued with serious problems of unemployment, crime, drugs, and decay. Residents felt they had lost control of their community and feared for their lives. Based on the belief that there are great benefits in quality of environment and public safety when the residents of a community can control the outdoor space around their units, the central components of the plan enable residents to regain control over the outdoor space in the development. The concepts applied in this transformation demonstrated how physical form and architectural character can contribute to community pride and public safety when residents of a community can control the outdoor space around their homes. The key elements defined by the redesign include:

1. Providing fences which define back yard areas from front yards.
2. Providing patios, yard fences, and storage buildings which define a private space for each unit within these back yard areas. These areas will give a reason for residents to leave their homes and interact with the larger community.
3. Including plan areas for small children within the back yard areas. These areas provide a safe place for children to play that parents and neighbors can monitor
4. Adding porches as outdoor living areas to the fronts of the buildings. Porches provide a gathering place where people can converse with their neighbors and reinforce the bonds of community.
5. Insert new "streets" or "lanes" to provide parking spaces near the units and to provide a street address for each unit.
6. Utilize new street network and lanes to divide community into small "villages".
7. Provide a comprehensive lighting plan with light located primarily in the newly created private areas to shield them from vandalism and damage.
8. Provide a detailed landscape design that will include plantings designed to further define public and private space. The landscape plan will also serve to add to the beauty of the neighborhood reinforcing civic pride and a sense of community (UDA 1992).

Table 13. Diggs Town, Defensible Space Evaluation (*Author*)

Diggs Town	
Defensible Space Application	**Description**
Project Size and Building Type	
Building Type	Two-story, brick structures
Project Size	30 acres
Density	Moderate
Total Units	420
Total Buildings	68
Total Residents	1,339
Entranceway	One per unit
Designation of Space	
Public Space	Yes (designated common use)
Semi-Public Space	Yes (porches, front yards)
Private Space	Yes (individual units)
Surveillance	
Visibility	Good visibility from units
Landscape	Well maintained
Lighting	Porch, street lighting effective
Blind Corners	Majority eliminated, some exist along backs of units
"Eyes on the Street"	Very effective as result of porch additions
Neighborhood Quality	
Surrounding Uses	Residential/Neighborhood Commercial
Neighborhood Design	Consistent with surrounding neighborhood
Architecture	Reflective of traditional Norfolk architecture
Classification	"Neighborhood"
Access and Circulation Patterns	
Access	Numerous entranceways
Traffic Patterns	1 – way and 2 – way traffic
Traffic Calming	Narrow streets
Additional Elements	
Police	Community Patrol Officer
Management	On-site (5 staff members)
Maintenance	On-site
Resident Association	Active
Social Programs	Residents participate in a variety of programs

Project Size and Building Type

The original design of Diggs Town was intended to provide housing for over 1200 residents. Consisting of 428 units, the buildings constructed at Diggs Town were two-story brick structures. While the placement of the buildings over 30 acres produced a living environment of intensification, the project was not as dense as some comparable high-rise projects of the era. The redesign of Diggs Town maintained the two-story brick structures, yet slightly decreased the density of the development. Eight units were eliminated therefore reducing the total number of units from 428 to 420. While the number of units decreased, a key component in the development remained - - every unit has it's own entrance. For every unit, there is a door opening onto the street. No two units share a formal entrance, therefore interior hallways and entranceways in the buildings at Diggs Town are non-existent. While a large number of families may live in a building, each residence has an individual entryway. Following the theory that buildings with fewer apartments per entryway and fewer stories have lower occurrences of crime and lower levels of fear and victimization (Taylor 1999), the project size and building type exemplified in the redesign of Diggs Town produce a safer physical environment for the residents of the community.

Designation of Space

The placement of fences, shrubbery, porches, sidewalks, and other design elements truly emulate the concept of designation of space in Diggs Town. Prior to project renovations, there was no clear delineation of spaces and uses in the community. Often characterized as "no man's land", the lack of defined public spaces in the project proved evident in stimulating occurrences of criminal activity. Residents felt they had lost control of their community as a result of no clear distinction between the uses of public areas and the provision of adequate private space for each unit. Realizing the negative consequences of undeclared spaces in the community, the designers associated with the redevelopment of Diggs Town applied planning methods and techniques to provide definition within public areas as well as assign private spaces for each unit (UDA 1990).

Figure 28. Diggs Town, Building Design Before
(*Norfolk Redevelopment and Housing Authority*)

Figure 29. Diggs Town, Building Design After
(*Norfolk Redevelopment and Housing Authority*)

Roads, pedestrian walkways, and fences separate large portions of Diggs Town. This divides the community into front yards and back yards, and destroys the large blocks of common ground that had developed into areas rampant with criminal activity. Assigning spaces within the community as public, semi-public, and private, the redesign of Diggs Town promotes resident control over outdoor space. Distinguishing the private territory of residents from the public realm of the community enables the residents of Diggs Town to establish a secure and safe environment for themselves and their families (Bothwell 1998). "We tried to create a sense of ownership for their portion of the neighborhood," recalls Ray Strutton, Assistant Executive Director of the NRHA. "We wanted people to start looking out for one another and to keep the bad elements out of their neighborhoods" (Frank 1995).

Figure 30. Diggs Town, Designation of Space
(*Norfolk Redevelopment and Housing Authority*)

Fences help to define public and private spaces in Diggs Town. Fences separate back yard areas from front yards, and provide a private space for each dwelling unit. Picket fences give all residents private front yards while tall fences enclose back yards shared by three to six buildings. The configuration of fences defines the outdoor space associated with each unit. Front yard fences define the yard that belongs to each unit and discourages pedestrians from cutting across the yard. The front yard fences are white, metal fencing which resemble the traditional white picket fence. The fences are located at the intersections of streets or where pedestrian paths meet the sidewalk. Turf grass is planted in the yards, yet residents are allowed to plant and embellish their individual yards.

The back yard fences are located and designed to blend with the architecture of the buildings. A combination of tall and low fences define the back yards. Low fences define individual back yards, encouraging individual gardening and yard plantings. Tall fences ranging from 4'6" to 7' in height differentiate front and back yards and further define the "village" concept inherent in the design of Diggs Town. The fences are metal and are dark green in color as to blend with the landscape and enhance the color of the brick buildings. Only short sections of the fence are visible from perimeter streets. The tall fences serve to alleviate security problems and clearly define and protect communal spaces (UDA 1992).

Figure 31. Diggs Town, Fences (*Urban Design Associates*)

Surveillance

Natural surveillance is based on visible observations and resident interactions. Derived from Jane Jacob's "eyes on the street" concept, the redesign of Diggs Town clearly demonstrates a degree of community safety focused on resident control and watch over community spaces. Porches, windows, and lighting are all integral design elements of the physical environment which aid residents in keeping a careful watch over the community. Perhaps the most noticeable provision for surveillance in the redesign of Diggs Town was the installation of open, covered porches on each unit. The front porches bring families outside, increasing the eyes and ears that might witness undesirable activities. The porches allow for neighborly interactions while promoting resident watch over the community.

The addition of front porches to the facades of the barrack-style structures provides individuality for each unit while encouraging tenants to come outside and get to know one another as part of the process of community building. The large, sitting porches placed on the fronts of the units offer an additional living area which enables residents to add to the security of the street. The architectural design approach implemented with the installation of porches at Diggs Town uses a series of standard

porches with minor variations to offer distinctiveness and individuality. Porches feature a roof pitch, white wood columns, and detailing that enhance the general character of the buildings. Every residential unit in Diggs Town was redesigned to accommodate a front porch. The porches act as the most significant addition to the exterior of the buildings. In reference to the scale of the development, the designers concluded that the porches would have a great deal of impact in the community. For this reason, a large portion of the funds allocated for the redesign of Diggs Town were administered to get the best possible porches that would provide the best visual effect rather than complicate the buildings with extra details (Bothwell 1998; UDA 1992).

Figure 32. Diggs Town, Natural Surveillance
(*Norfolk Redevelopment and Housing Authority*)

In addition to the front porches associated with each dwelling unit, the replacement of window frames allow for a visually prominent symbol of “eyes on the

street". Large, white framed windows allow residents to observe outside activities from inside the units. Perhaps this is best exemplified with the placement of children play areas in the community. Organized in a "village" setting, the play areas are easily visible from inside the units.

Another component associated with adequate natural surveillance in Diggs Town is the placement of lighting in the community. Recognizing the importance of a well-lit neighborhood, the design team of Diggs Town added site lighting along the streets of the community. Front and back yard lights are of a reasonable neighborhood scale and help with safety issues while further defining the streetscape. In addition to the placement of street lights, porch lights were installed on each of the units. Sensitive to natural light, the porch lights automatically illuminate the units when it becomes dark outside. The sensory porch lights guarantee that all of the units will be well-lit at night. The careful attention placed on lighting in Diggs Town advocates the importance of the safety imposed by a well-lit community (Bothwell 1998; UDA 1992).

Neighborhood Quality

The distinction and characterization between a "project" and "neighborhood" are key components in the examination of neighborhood quality in Diggs Town. Designed to serve as temporary housing for transient residents, the community was built in an institutional design-style consisting of low-rise barrack type structures organized into large super-blocks. The two-story structures resembled a sea of brick boxes and constituted an undefined element of community. The original design of Diggs Town produced an environment that lacked individuality, identity, and cohesion. The design and layout epitomized the characterization of a housing "project" rather than a "neighborhood". Due to the institutional design of the project, the physical form of Diggs Town strictly differentiated the "project" from adjacent "neighborhoods". The design disconnected the community from the rest of the city, both physically and symbolically. In response, residents were stigmatized by the image of poverty and decentralized from traditional neighborhood quality and livability. A sense of neighborhood pride and association was lacking in the community was residents felt no connection to the housing project. As time went on, the community fell further into

neighborhood decline and despair. Neighborhood quality plummeted as a result of physical, social, and economic decline (Bothwell 1998).

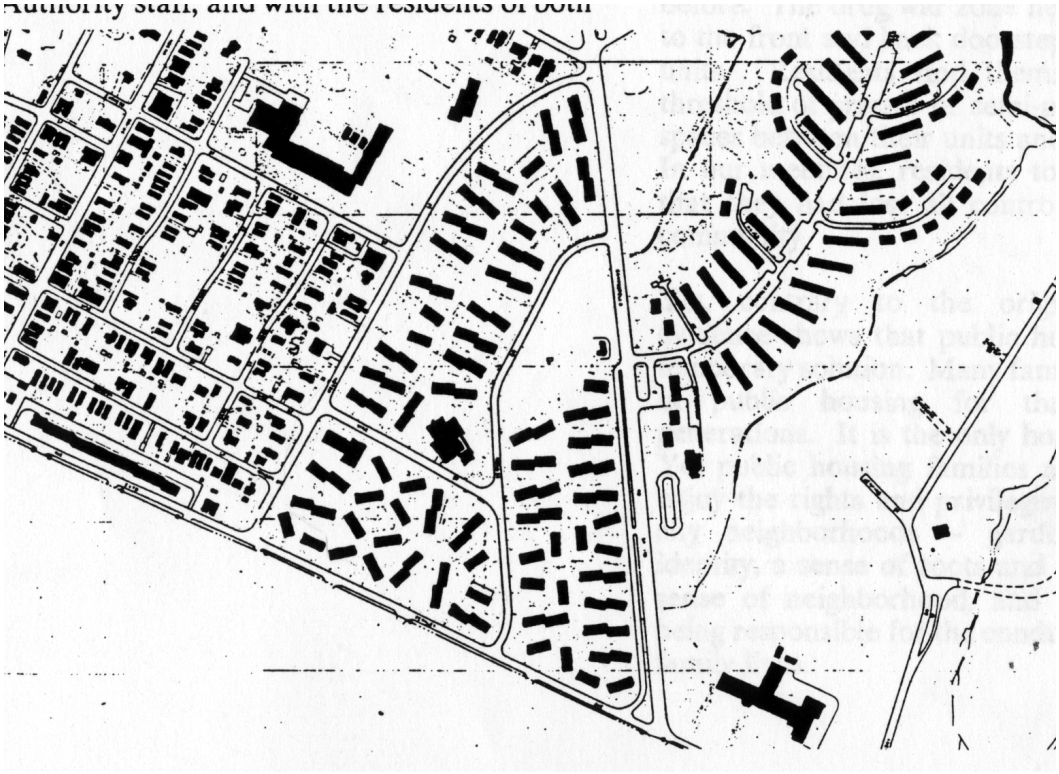


Figure 33. Diggs Town, "Project" vs. "Neighborhood"
(*Norfolk Redevelopment and Housing Authority*)

From its inception, public housing has been regarded as a temporary solution to the provision of housing for low-income families. While the original intent may have been temporary housing, the realization has emerged that public housing is not a temporary solution. Many families have lived in public housing for three or more generations. A living environment in which many have grown accustomed, traditional public housing does not express the individual identity of families or a sense of permanence. The design of public housing is institutional in character, typically consisting of anonymous, stark, and repetitive structures. Design discourages public housing families from exercising personal control of their units, or from expressing

individual identity or responsibility within the community. Instead of living in an architecture that in its form articulates segregation from the rest of the city, architecture should show that residents are part of the city. Believing that public housing should be treated no different from the rest of the city, projects should be treated as permanent city neighborhoods rather than temporary rental units. Realizing the importance of a decent looking home in improving a resident's self-esteem and sense of connection to the community, the redesign of Diggs Town produced a character and image of buildings which closely resemble a typical neighborhood. The transformation from a "project" to a "neighborhood" has greatly improved neighborhood quality in Diggs Town (UDA 1992).

Figure 34. Diggs Town, Neighborhood Quality
(*Norfolk Redevelopment and Housing Authority*)

Access and Circulation Patterns

Diggs Town was built in a time when public housing residents were not allowed to own a vehicle (UDA 1990). For this reason, the original design and street layout of the community discouraged vehicular traffic and therefore offered limited access. The only available parking in the community was along perimeter streets and was not near residents' units. Inadequate parking and a lack of streets proved difficult for resident safety and police patrol. Access to buildings was limited and criminal activity thrived in the un-accessible areas of the community.

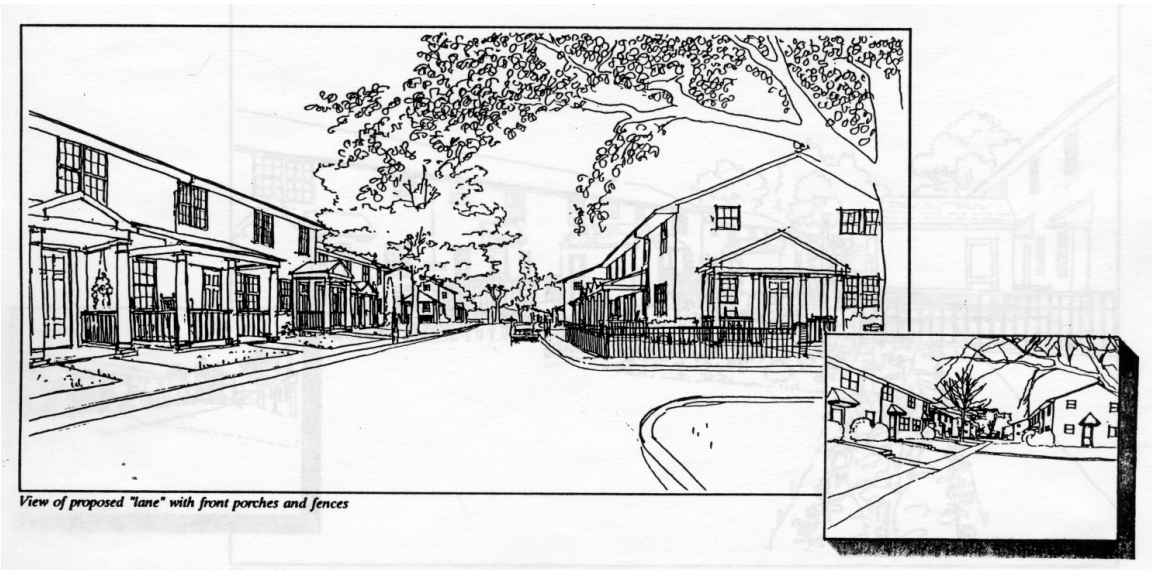


Figure 35. Diggs Town, Access and Circulation Patterns (*Urban Design Associates*)

The redesign of Diggs Town encouraged new “streets” or “lanes” where possible to dissolve the traditional super-block system. Parking lanes and small scale streets provide access to previously inaccessible areas of the community, while larger streets offer a prominent connection within the community. In doing so, each unit has a street address and a parking space directly in front of the residence. With the intent to create a more neighborhood oriented street system, the designers of the project realized the

residential streets and lanes for the development should have smaller dimensions than the current City of Norfolk zoning standards. The proportions of the spaces in Diggs Town are such that conventional streets would not be effective. Following a street pattern more common in traditional neighborhoods, the redesign of Diggs Town constituted narrow streets in order to slow down traffic. Most streets within the community provide one moving lane for vehicular traffic with either one or two parking lanes, depending upon the dimensions of the permissible road. While streets vary from standard city code, the road dimensions are acceptable to accommodate on-street trash pick-up, emergency services, and additional city services.

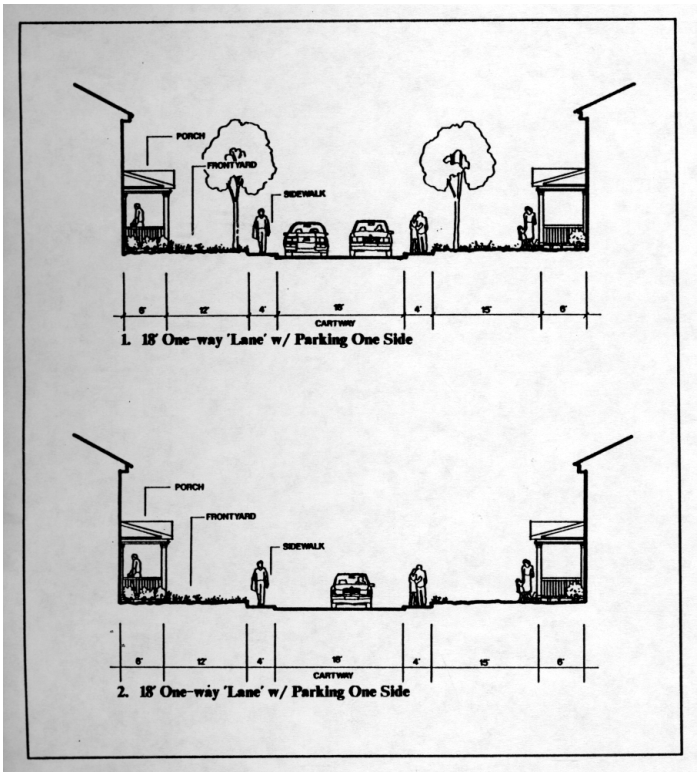


Figure 36. Diggs Town, Street Design (*Urban Design Associates*)

Realizing the complexities associated with an inadequate street pattern, the redesign of Diggs Town evoked the placement of additional streets, pathways, and

entranceways into the development. The new traffic pattern eliminated dead ends and cul-de-sacs, adding through streets that improved circulation in the neighborhood. In doing so, the new pattern of streets offered better police patrol and helped in transforming the “project” into a “neighborhood”. The additional streets planned in Diggs Town aided in making the community blend with the surrounding area. The redesign called for an open street design which centers on a grid-like pattern with numerous entranceways and vehicular traffic patterns. The new, small-scale streets provide parking, public security, and the pride of each individual unit having a visible “street address”.

Figure 37. Diggs Town, Access and Circulation Patterns
(*Norfolk Redevelopment and Housing Authority*)

Resident Perceptions

Neighborhood safety and security can be measured using crime data and statistical analysis, but perhaps the most important technique in determining safety and security is based on resident perceptions. Residents of a community may live their lives in fear while a noticeable crime problem may or may not exist. Often dependent upon elements associated the physical environment, residents' perception of fear greatly determines and affects the quality of life in the community. Believing that a crime problem exists, residents remove and isolate themselves from the community as a whole for fear of their individual safety. Recognizing the social problems and barriers associated with resident perceptions, the Diggs Town design team responded to resident concerns in order to create a safe and secure living environment.

While a formal management system exists in Diggs Town, there is also a Tenant Management Committee comprised of residents. The organization is made up of elected residents of Diggs Town that represent the tenants on community issues. The organization remains active in community affairs and offers an opportunity for resident involvement in issues affecting their community (Major 2006).

Actively participating in the design process, the residents of Diggs Town were given the opportunity to voice their opinions and concerns about problems in the neighborhood. Prior to the redesign of Diggs Town, residents of the community feared for their lives and felt they had lost total control over the community (Bothwell 1998). Residents were afraid to leave their units and therefore removed themselves from the community as problems grew worse. Losing control over the areas surrounding their units, problems in Diggs Town escalated due to a lack of resident involvement. While the residents of Diggs Town continued to fear their surrounding community, the neighborhood continued to further decline. With a lack of resident control, criminal activity became the controlling factor in the community. One resident involved in the redesign of the community noted that there used to be fences in the yards. "People were able to grow plants, sit out in the yard, but now the fences were gone and the 'others' had taken over" (Bothwell 1998). The 'others' discussed were the gangs and drug dealers typically from other parts of the city who had used the spaces between the buildings at Diggs Town to conduct illegal activities. There was no defined personal territory and no

ownership of space in Diggs Town, therefore making it easy for criminal activities to occur.

Recognizing the negative perceptions instilled by the residents of Diggs Town, the redesign of the public housing community was intended to manipulate the physical environment to produce a safe and livable neighborhood. While minimal structural changes were made, the redesign of Diggs Town placed and enormous impact on the physical and psychological effects on the complex and the residents. In the planning stages for the project, Andrea Clark, past president of the Diggs Town Tenant Management Committee, noted: "We would like to have porches, real porches that you can sit on. We need them not as another room or just for the space, but so that we can come out of houses, be together, get to know each other, so that we can come together to deal with our problems" (Bothwell 1998). As the project continued, the installation of front porches on each of the units became a focal point of defining territory, promoting ownership, and fostering neighborly interaction. The front porches emulated concepts of defensible space while providing an arena to bring the residents of the community together.

The new physical framework at Diggs Town is enabling the residents to take back control of their neighborhood. Mary Cowell, a long-term resident of Diggs Town, is grateful for the changes in the community. "It just feels better around here," Cowell says. "I am very proud of where I live. Others are, too. It is nice" (McNatt 1997). The porches, fences, and streets have encouraged resident involvement and pride in the community. "It has made a difference in the tenants' attitudes," says resident Dorothy Brown. "You get to know your neighbors better. Now we sit out there and talk more" (Cosco 1995).

Residents and community police report a dramatic decrease in crime and an increase in self-esteem and community pride. Ray Gindroz, project architect and urban designer, says: "Now it is a traditional village with streets and front porches, not an ambiguous no-man's land. Before, every night residents heard three or four gunshots. Now they hear one gunshot every three or four months. And gradually people are learning to take care of their yards, plant flowers" (Cosco 1995). Within six months of project completion, Community Patrol Officer Rick James noted a rapid decrease in

crime and a "renewed sense of pride and self-esteem, which led to an identification and engagement with the community. People felt they had dignity with their new homes. They also felt that their yards had been restored and that their homes were worth fighting for" (Bothwell 1998). The redesign of Diggs Town and the application of defensible space principles in the community has greatly contributed to a decrease in crime and fear of crime and has led to an increased sense of community as residents have regained control over the neighborhood.

Crime Data and Analysis

In 1989 Diggs Town was the third largest public housing project in Norfolk. Housing over 1400 residents, the community was arguably the city's most violent neighborhood (Frank 1995). While site observations, defensible space applications, and resident perceptions are key factors in determining levels of criminal activity in Diggs Town, a vital element to the discussion is crime data. Focusing on calls for service, reported crimes, and neighborhood concerns, data collected by the Norfolk Police Department provides documentation and detailed reports on criminal activity in Norfolk's public housing communities. Supervised by eight Community Patrol Officers, the majority of Norfolk public housing has substantial data, analysis, and statistics to track levels of crime in the communities.

In addition to an on-site management staff, there is a community patrol officer assigned to Diggs Town. Established in part by the Community Officer Resource Program as a partnership with the NRHA and Norfolk Police Department, the community patrol officer maintains an office in the community, frequently patrols on foot and bicycle, and attends all community meetings and events. The officer encourages public participation, support, and cooperation from the residents as a method of reducing crime by identifying and eliminating the desire, ability, and opportunity to commit crimes. By serving as an active member of the community, the community patrol officer has built a strong relationship of trust and respect with the residents of Diggs Town (CRO 2004).

Officer Rick James is currently the Community Patrol Officer for Diggs Town. Officer James has patrolled the community for over ten years and has witnessed the changes and transformation that has occurred in the Diggs Town community. Officer

James believes that the decrease in crime in public housing is not measured or adequately represented by numbers, officials, or news reports: "The litmus test is when residents tell me, 'I see the change'. Now that is what I am getting" (Brown 1997). The types of crimes committed in Diggs Town have changed due to the redesign of the community. A community once plagued with drug and gang activity now focuses on less intense problems. There have been no homicides in Diggs Town in over eight years, whereas in the neighborhood was known for its homicides and shootings (James 2006). Domestic violence and juvenile related crimes are the biggest problems in the community now. Both are social issues that are currently being addressed in a partnership with the police and other organizations to assist in finding a feasible solution. Officer James believes that the single parent head of household greatly contributes to the high level of juvenile related crimes (James 2006).

There has been a 75% reduction in crime from 1979 to 2005. Crime dropped 25% from 1993 to 1994 primarily as a result of changes to the physical environment (Brown 1995). From 1995 to 1996 violent crime rates in Diggs Town fell 27% from a rate of 15.8 to 11.5 and robberies fell from 10 to 1. Robberies, murders, and aggravated assaults fell 50% from 1993 to 1994 as a result of the redesign of Diggs Town. Since 1990, robberies and aggravated assaults were cut by almost two thirds (Frank 1995).

Table 14. Diggs Town, Calls For Service: 1993 Compared to 1999
(*City of Norfolk Police Department*)

Month	**1993**	**1999**	**+/-**	**%**
January – June	890	369	-659	-74%
July – December	780	373	-407	-47%
Year	*1670*	*742*	*-928*	*-56%*

Table 15. Diggs Town, Calls For Service: 1995 Compared to 1999
(*City of Norfolk Police Department*)

Month	**1995**	**1999**	**+/-**	**%**
January – June	600	369	-231	-38%
July – December	530	373	-157	-30%
Year	*1130*	*742*	*-388*	*-34%*

Table 16. Diggs Town, Calls For Service: 1998 Compared to 1999
(City of Norfolk Police Department,)

Month	**1998**	**1999**	**+/-**	**%**
January – June	327	369	+42	+13%
July – December	373	373	0	NC
Year	*700*	*742*	*+42*	*+6%*

Table 17. Diggs Town, Calls For Service: 1999 Compared to 2000
(*City of Norfolk Police Department*)

Month	**1999**	**2000**	**+/-**	**%**
January – June	369	341	-28	-7%
July – December	373	411	+38	+10%
Year	*742*	*752*	*+10*	*+1%*

Table 18. Diggs Town, Reported Crime: 1993, 1995 – 2001
(*City of Norfolk Police Department*)

Offense	**1993**	**1995**	**1997**	**1999**	**2001**
Homicide	2	0	0	0	0
Forcible Rape	2	1	1	0	0
Sodomy	0	0	0	0	1
Statutory Rape	4	0	0	0	0
Robbery	11	9		4	5
Commercial Robbery	0	0	0	0	0
Aggravated Assault	16	10	4	11	9
Residential Burglary	8	6	6	6	7
Commercial Burglary	0	0	0	0	0
Larceny	6	3	6	6	4
Pick Pocketing	0	0	0	0	0
Purse Snatching	0	0	0	0	0
Larceny from Auto	18	5	1	7	8
Larceny parts Auto	20	9	6	10	11
Larceny of Bicycle	3	1	2	1	0
Larceny from Building	0	0	0	4	0
Stolen Auto	9	3	4	11	13
Unauthorized Use of Vehicle	0	0	1	0	2
Indecent Exposure	0	1	0	0	0
Vandalism	25	14	11	17	26
Total	*12*	*62*	*45*	*78*	*86*

Several design changes have helped to reduce the occurrence of crime in Diggs Town. Changes in access and circulation patterns have opened up problem areas to vehicular traffic. Before the redesign, police had a difficult time accessing the neighborhood. Poor drainage caused problems in the streets and dark alleyways often proved inaccessible by vehicular patrol. The placement of new, smaller streets are more easily patrolled and the narrow roads help to prevent speeding and cut through traffic.

The roads and designated pedestrian pathways also help to define public space. Once an area of “no man’s land”, the lack of designation of space prevented resident ownership and detracted from neighborly interaction. Limiting the occurrence of criminal activity in the community, the redesign of Diggs Town uses design to reduce the opportunity to commit crimes. Front porches increase visibility and encourage residents to watch over the community. The more witnesses present at a crime, the less chance the crime will occur. Fences set property lines in the community. The property lines establish a means of prosecution for trespassing. By arresting people for trespassing, drug dealers eventually have nowhere to go. The individual playgrounds for each residential village offer safety for children and resident control and regulation over public areas. Residents have taken an active role in crime fighting. Designing to stimulate a sense of ownership in the community, the residents of Diggs Town have regained control of their community (James 2006).

A key component to community patrol in Diggs Town involves community involvement and participation. Officer James has taken an active role in the community and in turn has become a contributing member of the community. The familiarity factor of having one Community Patrol Officer present in the community for a majority of the time, has enabled Officer James to gain the trust of residents in the community. "I am part of the community now. I have pride in the community, too. After working in one community, it becomes personal. You know the neighbors” (Brown 1999). Residents know Officer James and Officer James has come to know many of the residents. The system of trust that exists has aided in decreases of criminal activity in the neighborhoods as residents feel more comfortable in reporting crimes. Realizing the importance of a good relationship with residents, Officer James focuses on "working with the community to help them make the community a better place” (Brown 1995).

Diggs Town Analysis

A public housing community once dominated by crime, social despair, and economic degradation, Diggs Town has been physically transformed from a "project" into a livable and viable "neighborhood". Completely renovated in the early 1990s, the redesign of Diggs Town promotes the principles of defensible space in efforts to increase

safety and security in the community. Focused on improving circulation, monitoring access, designating space, renovating buildings, and increasing visibility, the redesign of Diggs Town encompasses the primary elements concurrent with defensible space principles. The design improvements have greatly contributed to a reduction in crime and an increase of community pride in the neighborhood. Residents once terrified to leave their homes have regained a sense of ownership and control over their community. The physical design of Diggs Town clearly demonstrates that it is possible to turn barren, isolated, and dangerous public housing into safe, attractive, and livable communities. The examination of Diggs Town serves as a guide and model to promoting safer public housing through the application of defensible space.

CHAPTER 7
CONCLUSIONS AND RECOMMENDATIONS

The evolution of public housing in America has become a transformation from temporary to permanent housing, "project" oriented to "neighborhood" oriented design, and institutional to architecturally significant housing for low-income Americans. The need for affordable housing opportunities continues to be an issue of concern in modern day America. Building on the U.S. Housing Act of 1937, housing opportunities across the nation have attempted to fulfill the need for safe, decent, and affordable housing. Constituted primarily through the establishment of public housing projects, for over 50 years federally subsidized housing has been made available for low-income Americans. Ranging from high-rise towers to garden-style apartments, the design of public housing has changed dramatically as a result of social, economic, and design theory.

While the need for affordable housing is a constant concern in America, the provision of safe, decent, and affordable housing cannot be collectively overlooked. Often times efforts to provide housing for low-income people is compromised in terms of safety and security. Concentrating on housing itself, safety and security within the overall community are often jeopardized. The high concentration of low-income groups living in established public housing communities generally faces a negative perception and reality of creating areas high in criminal activity. As a result, the physical setting in which people live can have a great effect on community viability and livability

The living conditions in many of America's public housing projects are facing a state of neighborhood decline and physical despair. Degradation of the physical environment coupled with socio-economic constraints facilitates numerous deplorable living situations. Realizing the declining status of public housing projects built at mid-century, housing authorities across the nation are attempting to improve current housing and formulate solutions to problems in the communities (Adler 1997).

The three public housing projects discussed provide an accurate representation of the decline and rebirth of America's public housing stock. By examining notable communities in Charlotte, North Carolina, Greenville, South Carolina, and Norfolk, Virginia, various methods of housing improvements and strategies are revealed. Based on prior research, perhaps one of the most notable elements in the analysis is the application of defensible space principles as a method of crime prevention in each of the communities. The provision, or lack of crime prevention efforts centered on improving the physical environment of the three public housing communities, demonstrates the capabilities and influence the physical setting has in either attracting or deterring crime.

The detailed analysis of the three public housing communities provides a framework for discussion on the effectiveness in the application of defensible space techniques. Demonstrated as a method of crime prevention focused on the physical environment, defensible space is a method that combines social interaction with the physical setting. The analysis of the three communities, Jesse Jackson Townhomes, Piedmont Courts, and Diggs Town, analyzes the physical environment in relation to crime and safety in the public housing communities. Each of the projects is fairly similar in reference to overall physical characteristics.

Table 19. Case Study Descriptions (*Author*)

	Jesse Jackson Townhomes	***Piedmont Courts***	***Diggs Town***
City, State	Greenville, South Carolina	Charlotte, North Carolina	Norfolk, Virginia
Program or Agency	Greenville Housing Authority (GHA)	Charlotte Housing Authority (CHA)	Norfolk Redevelopment and Housing Authority (NRHA)
Profile of Development or Neighborhood	Declining neighborhood conditions; crime has led to various concerns about safety and security in the neighborhood	Deplorable neighborhood conditions; crime has led to several redesign efforts; project has begun HOPEVI revitalization	Improved neighborhood conditions; crime led to redesign of project using defensible space principles
Housing Condition	Traditional	Transition	Transformation
Date of Design/Redesign	1952	1941/1988	1952/1994
Building Type	2-story, brick, barrack style, “super block”	2-story, brick, barrack style, “super block”	2-story, brick, “neighborhood” design
Number of Buildings	54	30	68
Project Size	26 acres	22.6 acres	30 acres
Number of Units	340	242	428

Units Per Acre	13	10	14
Dwelling Size	1 – 5 Bedrooms	1 – 3 Bedrooms	2 – 4 Bedrooms
Number of Residents	841	625	1,339
Density (Persons Per Acre)	32	27	44
Tenant Profile	Low-income, minority residents (welfare recipients)	Low-income, minority residents (welfare recipients)	Low-income, minority residents (welfare recipients)

Defensible Space Applied

The housing projects examined demonstrate the various applications and effectiveness of defensible space principles. Diggs Town serves as a model community transformed whereas Piedmont Courts and Jesse Jackson Townhomes represent public housing projects in transition. All have faced declining physical and social conditions but the comprehensive redesign efforts at Diggs Town promote an environment highly representative of defensible space principles. The success in reducing crime in the community is coupled with widespread alterations to the built environment. Rather than demolishing the structures at Diggs Town, the units and surrounding areas were refurbished and redesigned to accommodate a more livable setting. The installation of porches, sidewalks, fencing, and plantings all promote a sense of ownership and pride in the community. The physical alterations in the community aid in the transformation of the "project" to a "neighborhood". The various design elements expressed in the community offer a sense of territorial control by the residents in the neighborhood. Increased resident pride and involvement in the neighborhood has resulted as a change in the physical environment. Crime has been reduced greatly and the neighborhood continues to provide a safe and secure living environment for its residents.

Table 20. Defensible Space Applications (*Author*)

Application	***Jesse Jackson Townhomes***	***Piedmont Courts***	***Diggs Town***
Project Size and Building Type			
Building Type	Two-story, brick	Two-story, brick	Two-story, brick
Project Size	26 acres	22.6 acres	30 acres
Density	Moderate	Moderate	Moderate
Total Units	340	242	420
Total Buildings	54	30	68
Total Residents	841	625	1,339
Entranceway	One per unit	One per unit	One per unit
Designation of Space			
Public Space	Yes	Yes	Yes
Semi-Public Space	No	No	Yes
Private Space	No	No	Yes
Surveillance			
Visibility	Building pattern limits visibility	No clear visibility for units	Good visibility from units
Landscape	Barren (earth yards), some areas overgrown	Barren, not maintained	Well maintained
Lighting	Inadequate	Ineffective	Effective
Blind Corners	Areas surrounding buildings	Areas surrounding buildings	Back of units
“Eyes on the Street”	Small porches offer some opportunities	No opportunities	Front porches
Neighborhood Quality			
Surrounding Uses	Residential/ Commercial	Residential/ Industrial	Residential/ Neighborhood Commercial
Neighborhood Design	Cul-de-sacs	Super-blocks	Grid pattern
Architecture	Distinguishes project	Traditional townhomes	Vernacular
Classification	“Project”	“Project”	“Neighborhood”
Access and Circulation Patterns			

Access	One entrance	One entrance, one exit	Numerous
Traffic Patterns	2-way traffic	1 – way traffic	1 – way/ 2- way traffic
Traffic Calming	Speed humps, cul-de-sacs	Speed Humps	Narrow streets
Additional Elements			
Police	Community Patrol Officer	No Community Patrol Officer	Community Patrol Officer
Management	On-site	On-site	On-site
Maintenance	On-site	On-site	On-site
Resident Association	Not active	Not active	Active
Social Programs	Provided	Provided	Provided

The situation at Piedmont Courts and Jesse Jackson Townhomes is very different from the community atmosphere prevalent in Diggs Town. While numerous crime prevention techniques have been attempted and encouraged, the projects continue to deteriorate and foster deplorable housing conditions. While the actual buildings in both communities appear to be sturdy and structurally sound, the physical environment surrounding the dwelling units remains an area for improvement. A sense of place is indistinguishable amongst various areas of activity occurring in the developments. Both communities lack the overriding defensible space concept of designation of space. There is no clear delineation amongst public, private, and semi-public spaces in the community. Uses for certain areas of open space are undefined, causing the areas of no-man's land to become venues for criminal activity.

The street pattern and building layout in each of the communities facilitates an institutional style project design. The public housing provided is clearly separated from the surrounding communities, physically, socially, and psychologically. The original plans for the three projects were to provide temporary housing for transient low-income residents. While intended to resemble traditional middle class apartments, the buildings constructed were laid out into large super-blocks. Scattered throughout the sites, the building plan of each community clearly differentiated the "projects" from the surrounding "neighborhoods". The street pattern in each reinforced the

institutionalization of the projects. Realizing the negative connotations of the institutional super-block design, the redesign of Diggs Town divided the large blocks into smaller “village” communities. Separated by lanes and streets, the new roadways transformed the public housing “project” at Diggs Town into a “neighborhood”. The physical appearance and visual stimulation as a true residential neighborhood has helped in the reduction of crime in the community. Diggs Town revokes the typical stereotype of a barren landscape of a 'sea of brick boxes' associated with traditional public housing projects, providing an environment which residents are proud to call home.

Natural surveillance acts as a vital component in the application of defensible space principles. Acting in reference to a sense of ownership, neighborhood quality, and designation of space, natural surveillance relies on the residents' ability to control the community in which they live. Based on the “eyes on the street” principle, natural surveillance is a primary technique in reducing crime and improving security in public housing. Increased visibility and accessibility formulate an environment that is easily protected by the residents of the community. The redesign of Diggs Town clearly emulates the promotion of surveillance as an effective method for improving safety and security. The installation of front porches is an excellent demonstration of altering the physical environment to enable residents to watch and protect their surroundings. Surveillance opportunities remain fairly limited at Jesse Jackson Townhomes and Piedmont Courts.

The physical conditions associated with Jesse Jackson Townhomes and Piedmont Courts do not present a problem of hopelessness or infinite distress. Both communities will soon begin complete redevelopment. This redevelopment will be infomed by the ideas of defensible space and other new design theories that will make them communities of mixed incomes and uses. This should make these communities even stronger models for developing safe, strong, and complete urban neighborhoods.

Project Recommendations

The physical conditions present in the three communities exemplify the various effects the physical environment can have in relation to community safety and security. Efforts made on behalf of the housing authorities to improve living conditions in public housing projects should be encouraged through the application of defensible space principles. Alterations to the physical environment coupled with social activities, police patrol, and resident involvement can have a positive impact on the reduction of crime and fear of crime in public housing projects. Each of the three public housing sites discussed presents various examples for physical improvements and design ramifications to improve the built environment. From the analysis, several project recommendations can be formed in regards to improving the physical environment.

Jesse Jackson Townhomes

Jesse Jackson Townhomes is a public housing community which has witnessed numerous attempts to provide a decent living environment for the low-income residents of Greenville, SC. Primarily focusing on traffic alterations, issues of crime and safety have encouraged many crime prevention efforts. Regardless of actions, drug and other criminal activities continue to exist. The physical environment of Jesse Jackson Townhomes compliments the abundance of illegal activities in the community. The neighborhood is not well lit, buildings are placed on a stark landscape, poor visibility and access exists, and there is no designation of space in the community. Working to improve living conditions in the community, several recommendations include:

1. Monitor vehicular and pedestrian access to the community as an attempt to reduce problems of cut-through traffic, drug activity, and criminal negligence.

2. Improve visibility and recognition of the on-site management office while increasing housing authority programs in the community.

3. Support businesses and commercial ventures in or near the community. True neighborhoods are able to provide for the everyday needs of residents. Stores also provide eyes on the street during business hours when residents are at work.

4. Promote resident pride and ownership in the community through neighborhood enhancement and beautification efforts.

5. Increase police presence and awareness in the community through increased staffing and patrol.

Piedmont Courts

Until its recent closure in preparation of redevelopment the physical environment at Piedmont Courts was in a condition of neighborhood decline and despair. The buildings in the community remained large block units of housing, evoking an institutional sense of design. The physical design of the project offered limited individuality and discouraged resident pride in the community in where they lived. The physical implications of the community portrayed minimal differentiation between public and private space. The residents had lost control of their community, showing a reduced sense of ownership or territorial control over the environment. Crime is a central factor respective of neighborhood decline, both physically and socially. The problems at Piedmont Courts in relation to crime and the physical environment should be approached using defensible space principles. Future recommendations and activities to improve the quality of life in the community may include:

1. Support businesses and commercial ventures in or near the community. True neighborhoods are able to provide for the everyday needs of residents. Stores also provide eyes on the street during business hours when residents are at work.

2. Facilitate various programs and activities to strengthen resident involvement in the community.

3. Improve lighting conditions and other physical components of the project.
4. Enforce and enhance police presence in the community.
5. Maintain buildings and their surroundings, making various improvements to the physical environment.

Diggs Town

The effectiveness of crime prevention techniques through the manipulation of the physical environment is accurately demonstrated in Diggs Town. The redesign of the community promulgates the ideals of defensible space, demonstrating how changes in the

built environment can have a reduction in crime. The redevelopment project has been regarded as a success among the design profession and continues to provide a safe and secure living environment for its residents. To ensure continued safety in the community, future recommendations may include:

1. Continue the City of Norfolk Police Department community patrol officer program.
2. Enhance resident education on crime prevention methods in the community.
3. Increase resident involvement in preventing crime through continued control and ownership in the community.
4. Maintain designated uses of public spaces within the community.
5. Encourage neighborhood clean-up efforts to reinforce a sense of resident pride and ownership in the community.

Research Review and Limitations

The research and analysis presented demonstrate the application of defensible space principles in public housing communities. The study does not prove or disprove the overall effectiveness of defensible space concepts, but does strive to connect crime and fear of crime with conditions present in the physical environment. The research conducted does not constitute a methodological scientific analysis, but rather takes into consideration the various factors which stimulate socially and physically hazardous environments. Through site observations, theoretical research, interviews, and crime analysis, the methods performed throughout the study offer a consistent pattern in relation to the examination of successful applications of defensible space principles in public housing communities.

Various limitations occurred throughout the research for this analysis. Limited availability and access presented numerous problems in the collection of crime data. It proved extremely difficult to gather consistent and comparable information for each of the three public housing communities. The interviews were primarily a result of a neighborhood housing survey conducted by each of the housing authorities in the cities. In addition to talking with residents, a majority of the interviews were conducted with city officials, police officers, housing authority staff, and other associated parties. The

analysis attempted to formulate the best possible representation of resident perceptions of crime in their communities.

Another valuable limitation is that it is extremely difficult to quantitatively measure the effects of the physical environment on crime and safety. Numerous factors and concurrent elements contribute to safety and security in the community. Social and economic issues are considerable influencers of crime and safety. Especially in the examination of Diggs Town, many outside factors helped to greatly reduce crime in the neighborhood. Although many of the activities and programs were stimulated by the overall physical redesign, it is extremely difficult to analyze the direct impact the physical environment had in reducing crime in Diggs Town. The social implications alone are a considerable contribution to perceptions of safety in the community. These various factors cannot be overlooked when examining crime in public housing.

While the physical environment does play an important role in determining levels of crime in communities, there are many other concerns and considerations to decipher when analyzing overall effectiveness. For this reason, many areas for possible future research emerge as components of the built environment are perceived as a part to a larger whole. Perhaps a sociological or criminological study would best address the overall effectiveness of a variety of crime prevention techniques. Whether social programs, management activities, police enforcement, or physical structures, a possible area of study would involve integrating all of these varied factors to determine the true effectiveness of crime prevention programs.

Conclusion

The impact the physical environment has on reducing or improving the occurrence of crime in public housing communities is an integral component into a much larger picture of crime prevention. The study and research conducted presents a viable framework for the analysis of defensible space principles. The application of defensible space applications is best applied on a site-specific basis. There are no uniform set of principles which guarantee a safer living environment, but a combination of physical improvements and design analysis has the potential to reduce the occurrence and opportunity of crime in public housing communities. Housing over 2.6 million low-

income Americans, crime and safety concerns in public housing projects cannot be ignored. While modifying the physical setting is only one element to the revitalization of public housing, it is central in providing "safe, decent, and affordable" housing opportunities. The application of defensible space principles demonstrates that the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime in public housing projects.

CHAPTER 8

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