

Barriers to Implementing a ‘Secured by Design’ Program for the Lexington-Fayette Urban County Government

Master’s Capstone Project
Martin School of Public Policy and Administration
University of Kentucky

Brent Burchett
Spring 2010

Contents

Executive Summary.....	3
Project Background	4
Research Overview	5
History, Program Principles	7
Table 1: Secured by Design Basic Concepts.....	8
Evaluation Challenges	9
Emergence of Secured by Design	10
Implementation Approaches	12
Table 2: Implementation Approaches and Interpretations of Program Principles	13
Lexington Political, Organization and Logistical Context	16
Table 3: Secured by Design Project Interviews.....	17
Table 4: Matching Crime Prevention by Design Implementation Approaches.....	19
Likely Program Approach for Lexington	24
Conclusions, Limitations	27
References	33

Acknowledgements

Thanks to the Lexington-Fayette Urban County Government Division of Police, Division of Planning, City Council, the Home Builders Association of Lexington and Dr. Ginny Wilson and Dr. Ed Jennings of the Martin School for assistance with this project. Opinions of those interviewed do not officially represent the view of any organization or government body.

Executive Summary

Officers from the Lexington Division of Police have begun planning the implementation of a popular United Kingdom crime prevention program, Secured by Design, in Lexington, Kentucky. Many municipalities in the United States operate crime prevention by design programs, focusing on how the built environment affects criminal behavior. Secured by Design, a specific crime prevention by design program privately owned by the U.K.'s Association of Chief Police Officers, partners with U.K. police and urban planning departments to encourage adoption of building and design practices believed to prevent crime. Lexington would be the first U.S. city to have a Secured by Design program.

The objective of this analysis was to review existing literature on crime prevention by design programs to identify best practices and barriers to effective program implementation, adapt Secured by Design program requirements to equivalent LFUCG divisions and Fayette County-area housing developers and to interview relevant Lexington program implementers to compare initial preferences on the program structure and approach against best practices identified in existing literature. Among interviewed representatives from the Division of Police, Division of Planning, Lexington-Fayette Urban County Council and the Home Builders Association of Lexington, a preferred approach to implementing Secured by Design was evident; Secured by Design will be a voluntary program led by Lexington Police. Apart from agreement on the general structure, plans for implementation did not always match practices used in other municipalities or factors identified by researchers as important for program success. Furthermore, duplicating the effect of the U.K.'s Secured by Design program in Lexington may depend largely on political and contextual factors that do not exist in the U.S.

Project Background

Secured by Design is an English crime prevention certification program that brings police, architects, urban planners, product manufacturers and housing developers together to “design out” burglaries and other criminal activity prior to new housing construction. As explained by one Lexington police officer, "Secured by Design considers the relationship between crime and design at the level of a single window and an entire neighborhood." Physically securing entrance points through locks and quality construction materials, fostering clear lines of sight through lighting and the placement of windows, managing neighborhood foot traffic by strategically placing walking paths and other design techniques have been found to discourage criminal behavior (Cozens 2005). A Secured by Design program is currently being developed for Lexington, Kentucky in conjunction with the Lexington Division of Police and the Eastern Kentucky University Center for Crime and the Built Environment.

In March 2009, Lexington police representatives traveled to the United Kingdom to learn about how the 20 year-old program might work in Fayette County (Eblen 2010). As part of Lexington's November 2009 Sustainable Communities Conference, community leaders and area academics hosted a roundtable discussion of environmental sustainability through architecture, urban planning and crime prevention (UK COD 2009). Included at the conference was a presentation by Calvin Beckford of the United Kingdom's Association of Chief Police Officers entitled "Crime Prevention and Sustainability: The English Experience."

Members of the Lexington Home Builders Association are involved in development of the program. Two of the association's largest housing developers, Ball Homes and Anderson Communities, attended Secured by Design training seminars in Maryland provided by the National House Building Council, a United Kingdom warranty and insurance provider for new

homes (Johnson 2010). The Lexington Home Builders Association presently has sent doors, locks and other building materials to be tested for Secured by Design compliance.

Does Lexington, Kentucky have a uniquely high crime rate that caused officials to seek out information on Secured by Design? No. Lexington's total Part 1 crimes (homicide, rape, robbery, aggravated assault, burglary, larceny, motor vehicle theft, and arson) were 14,074 in 1980, 16,354 in 1990, and 11,914 in 2009 (Lexington Division of Police 2010). But like other municipalities around the world, Lexington's available resources to combat crime through police, courts and corrections are increasingly strained by an economic recession (Mead 2010). For LFUCG leaders, programs with the potential to proactively reduce crime in Lexington are appealing, but deciding how to implement a Secured by Design program depends upon the initial and long-term operational costs the City can expect to incur and on the types of logistical barriers such a program would have to overcome to operate effectively in Fayette County.

Research overview

Objectives of this analysis include:

1. Review components of the Secured by Design program and existing literature on crime prevention by design to identify best practices and barriers to effective program implementation by:
 - o Defining components of crime prevention through design programs by compiling a history of academic theories and later adaptations by police or program practitioners;
 - o Identifying implementation methods employed by municipalities to mitigate crime through design techniques; and by

- Analyzing evidence or examples of certain program implementation approaches and interpretations of the six Secured by Design theoretical components.
2. Adapt Secured by Design program components to equivalent LFUCG divisions and Fayette County-area housing developers to reveal:
- Possible LFUCG cost implications for different Secured by Design program implementation approaches;
 - Possible costs for housing developers for different Secured by Design program implementation approaches; and to identify
 - How different program approaches might interact with political, organizational or logistical factors in Fayette County.
3. Identify and interview relevant Lexington program implementers including two representatives from the Division of Police, two representatives from the Division of Planning, one representative from the Urban County Council and one representative from the Home Builders Association of Lexington to:
- Measure perceptions about beginning a Secured by Design program in Fayette County;
 - Estimate organizational capacities to comply with different types of crime prevention by design programs; and to
 - Develop a comparison between best practices identified in existing literature and what interviewees identified as preferred program components and implementation approaches.

History, Program Principles

Either consciously or otherwise, behavioral decisions may be influenced by the surrounding environment (Stark 1987). Beginning in the 1970s, criminologists and researchers began to hypothesize that certain types of crimes - burglary, home invasion, robbery, trespassing, loitering, property damage and other illegal activities - could be discouraged in a given area by changing structural and landscaping features of the surrounding environment (Cozens 2005). C. Ray Jeffrey's *Crime Prevention through Environmental Design* and Oscar Newman's *Creating Defensible Space* formalized crime prevention theories, concluding that apartment complexes, schools, parks, businesses and neighborhoods could discourage criminal behavior by increasing natural surveillance and distinguishing public areas from private areas. Potential criminals, they argued, calculate the opportunity of apprehension before committing a crime (Newman 1973 and Jeffrey 1977). The landscaping and architectural layout of a building can be designed to maximize visibility by residents of the premises. If intruders feel someone else is watching, their behavior may be affected. Shrubbery, pavement designs, fences, streets and sidewalks can be designed to delineate who is and is not authorized to be in a given area. When a sense of territoriality or ownership of a space is well-conveyed to all, potential offenders perceive what sort of behavior is not welcomed (Beckford 2008).

By the 1980s, case studies emerged evaluating the impact of Crime Prevention Through Environmental Design (CPTED), Defensible Space and similar crime prevention by design programs in public housing developments, commercial areas and other high-crime urban settings. Empirical evaluations of crime prevention by design programs proved problematic for researchers (Cozens 2005). The difficulty of separating crime prevention by design's role from other factors that may influence crime patterns hindered efforts to investigate program outcomes

and similarly limited the opportunity for lawmakers or public administrators to evaluate the value of implementing such a program.

As environmental design usage by police departments and municipal governments grew, so too did the list of components deemed important for the program's success. Jeffrey and Newman's original Defensible Space and Safety by Design theories evolved to encompass six interrelated concepts: Ownership, Surveillance, Access Control and Movement, Property Management and Maintenance, Activity Support and Target Hardening (ODPM 2004, Moffatt 1983). Table 1 summarizes core components of each concept. What tactics should and should

not be formally included in crime prevention by design programs is not universally agreed upon by researchers or practitioners. Some definitions consider community policing, neighborhood watch and other tactics to be components of crime prevention by design programs. Target Hardening, for instance, is perhaps universally understood by property owners and police as an effective crime deterrent, independent of any

Table 1 Secured by Design: Basic Concepts	
Ownership	Pathway designs, railings, landscaping, signage or other means of signaling territorial claim of a space (e.g. public sidewalk from private porch)
Surveillance	Natural surveillance by neighbors having a window view and/or street traffic having a line of sight to property entrances and public spaces; mechanical surveillance through adequate lighting and video cameras
Access Control and Movement	Footpaths, physical barriers, building design and property layout can limit entrance points to vehicle or pedestrian traffic
Property Management and Maintenance	A property's physical appearance - cleanliness, landscaping and ongoing upkeep may discourage criminal activity
Activity Support	Buildings can be designed to encourage non-criminal activities (walking, fellowship) to occur in or near public spaces; Activity Support integrates actual resident use of spaces to increase Surveillance, Ownership and Access Control and Movement
Target Hardening	Open, unlocked or poorly maintained windows, doors and other entry points increase targeting of a property by criminals
(ODPM 2004, Moffatt 1983, Cozens 2002 and Robinson 1999)	

crime prevention by design program. The core concepts featured in Table 1 for Secured by Design are fundamentally identical to the principles of CPTED or Defensible Space.

Evaluation Challenges

Even if program principles like Surveillance and Ownership "made sense" to police and urban architects, evaluations of CPTED effectiveness in different locations and environments produced either mixed or inconclusive results (Cozens 2005, Poyner 1983, Booth 1981). A 1981 comparison of households where CPTED had been in place found it effective at deterring crimes in indoor public areas, but not in outdoor spaces. Ronald Clarke discussed the validity issues inherent in measuring situational crime prevention in his 1995 *British Journal of Criminology* article, stating that among the large number of crime prevention by design programs deemed to be a success, "it has to be recognized that in most cases the individual evaluations were comparatively rudimentary," (Clarke 1995). Most evaluations, Clarke suggested, were simple time-series or quasi-experimental designs that included only minimal follow-up reviews, creating the situation where "it was impossible to be sure that the identified situational measure had produced the observed reduction in crime."

Methodological challenges identified by Clarke, Cozens and other crime prevention by design evaluators, mirror problems in the wider body of crime prevention literature (Dershem 1990). Crime prevention programs continue to be supported by police, criminal justice professors and the general public despite conclusive evidence that such programs actually reduce crime. Evidence of the efficacy of specific crime prevention by design components (e.g. the use of dead-bolt locks) is more accepted than reviews of total crime prevention programs like community policing or crime prevention by design (Dershem 1990, O'Shea 2000, Cozens 2005). A 2000 study of home security measures found that homeowners whose entrances were not visibly obscured by landscaping, or those who employed window locks and solid wood or steel

exterior doors reduced their chance of burglary (O'Shea 2000). Similar studies abound (Cozens 2005). By including in crime prevention by design programs things that police and homeowners might consider commonsensical, such programs are predisposed to be effective.

Difficulties identifying program effectiveness have implications for Lexington. Specific evaluations of the Secured by Design program are few, the most prominent of which is a 2000 study conducted by Rachel Armitage of the University of Huddersfield for the U.K. Home Office (Beckford 2008, Armitage 2000). Armitage attempted to select two neighborhoods whose only relevant difference was Secured by Design certification and compare crime changes for the same two periods. Burglary rates were found to be twice as high in non-Secured by Design homes than in homes certified by the program (Armitage 2000). But even if a larger body of Secured by Design research existed that further validated the program's effect, program implementers in Lexington would still have to cautiously appraise their chance for duplicating the U.K.'s apparent successes. Evaluation limitations seen in other Secured by Design and crime prevention by design programs in general will also characterize Lexington's program. Even if the program does prevent crime, it will be difficult to demonstrate Secured by Design's specific influence. Identifying actual program outcomes will be difficult, as will be justifying to city leaders that the program warrants expansion or funding support.

Emergence of Secured by Design

Widespread adoption of crime prevention by design concepts first occurred in 1980s England, but such programs have become increasingly common in the United States since the 1990s. CPTED or Defensible Space programs have been implemented to varying degrees by municipalities, school districts, neighborhood associations and police departments ranging from

Fargo, North Dakota; Tampa, Florida; Oakland, California to Louisville, Kentucky (Feins 1997 and NICP 2009). Interest in designing out crime from the community may be explained to some extent by factors beyond a desire to increase safety. The U.S. judicial system increasingly holds landlords accountable for not preventing crime under premise liability law (Gordon and Brill 1996). As judge or jury awards to residential tenants, convenience store patrons or pedestrians who are victims of a crime increase, the willingness of property owners to implement and maintain crime prevention by design standards or other crime prevention strategies may increase.

In 1989, the United Kingdom's Association of Chief Police Officers (ACPO) established Secured by Design as a collection of police initiatives that promote quality design techniques for homes, businesses and other physical locations. One of Secured by Design's primary initiatives is a testing and certification program (ACPO 2010). The ACPO approves products like doors, locks, windows, roofing, and storage devices in addition to providing certifications for architects, developers and home security installers. In January 2007, for instance, Decra Roof Systems became the first manufacturer of roofing tiles to receive Secured by Design accreditation (Decra 2010). Criminals have gained access into buildings containing expensive equipment or pharmaceuticals by removing roof tiles and breaking in through the ceiling. Decra's tiles and roof installation products were tested for resistance to tampering and removal with pry-bars and other tools. More than 350 product manufacturers to date have been granted usage of the Secured by Design logo after submitting products for testing, being approved and agreeing to pay an annual membership fee based on the size of the company and the number of certified products (ACPO 2010). Developers can request inspection of a newly-constructed building and receive Secured by Design designation at no cost. As a not-for-profit company, Secured by Design is funded by licensing fees and grants from the UK Government. Police departments of

local governments bear the costs of hiring 'Crime Prevention Design Advisers' who conduct property inspections and offer advice on designing out crime.

Variations of crime prevention by design are common in the U.S., but Lexington would be the first to implement a Secured by Design program (Jones 2010). While some components of the U.K.'s Secured by Design program are distinct from other crime prevention initiatives in the U.S. (e.g. the certification of building materials), their shared principles make an examination of implementation approaches by U.S. local governments applicable. Understanding how the concept of Surveillance or Ownership should be formally interpreted by a new Secured by Design program in Lexington necessitates a review of the approaches taken in other U.S. local governments' crime prevention by design programs. Given that the Secured by Design program is supported by a structure unique to the United Kingdom, Lexington will still have to adapt its program to the current bureaucratic structures and policies in Lexington and the United States.

Implementation Approaches

Resource allocations by municipalities for administering a safety by design program vary, as do the specific approaches taken for achieving program compliance in the community. Table 2 summarizes implementation approaches and specific Secured by Design components. Some city governments formally support crime prevention by design usage, but offer voluntary compliance on the part of developers. Others may require consultation on all new property developments with a crime prevention by design-trained administrator. Program components like Activity Support are interpreted differently by particular cities and by academic researchers or program practitioners (Sorensen 2003 and Cozens 2002). Early secured by design programs administered by police departments in the United Kingdom emphasized minimizing foot traffic

Table 2 Implementation Approaches and Interpretations of Program Principles				
Practice	Supporting arguments	Opposing arguments	Determining contextual factors	Evidence or Examples
Implementation Approaches				
Crime prevention by design included as a goal of long-term city vision statements or comprehensive plans, usually as part of planning, zoning or public safety policy	Allows crime prevention by design to be adopted over a long period of time without requiring immediate funds or specific policies	By using language like "encourage" or "incorporate crime prevention by design as feasible," such plans decrease the likelihood of immediate program adoption and possible crime prevention	If matched with an action plan that breaks down long term goals into actionable steps, cities may eventually develop a working crime prevention by design program; Vision statement must have support of city officials, property owners and developers	City of Roanoke, Virginia's <i>Vision 2001-2020</i> listed "[r]evise zoning ordinance to integrate crime prevention by design in development review process" (Roanoke 2010)
Consultation with crime prevention by design administrator required for all new properties except single-family homes; Compliance with consultation voluntary	Eases resistance to program implementation by gradually raising awareness of crime prevention by design practices; Program administrator can develop expertise over best local implementation strategies	Costs required for administration of a program that does not require compliance; Does not include single-family homes or existing property	If existing city planning or public works staff can be utilized to enforce crime prevention by design, the costs of this voluntary compliance approach might be more justifiable; If efforts are not supported by area developers a consultation program is a less controversial alternative	In 1996, Broward County, Florida required site and building designs to be reviewed by Director of Development Management for crime prevention by design compliance (Broward 2010)
Crime prevention by design standards incorporated into city building codes and ordinances for all new property construction or renovation except single-family homes	Allows crime prevention by design to begin having an immediate effect; Specific standards help developers achieve program compliance	Newly adopted crime prevention by design standards might be resisted by property owners; Difficulty reaching agreement on specific standards; Standards fixed by ordinance may not be adaptable to individual properties; Does not include single-family homes or existing property	The ability to appease resistant developers and reach consensus on details of crime prevention by design standards; If crime is most prevalent in single-family homes or existing properties, the program is ineffective in the near-term	City of SeaTac, Washington adopted a crime prevention by design ordinance in 2003 that set specific standards for parking lots, street lighting, gas stations and public areas (SeaTac 2010).
Providing grants or incentives for property owners to incorporate crime prevention by design in new and existing properties	By subsidizing crime prevention by design implementation, initial adoption or compliance is less likely to be opposed by property owners	Added program expense to city; Grants may not be sustainable over time; Property owners in pervasive crime areas may be less likely to utilize than developers in lower crime areas	If grants can be made a long-term, rather than initial program component they facilitate crime prevention by design compliance; Overall program budget determines availability; Expertise of administrator determines effectiveness by awarding grants in most needed areas	Property owners ability to implement crime prevention by design depends on their available financial resources (Parnaby 2007)
Crime prevention by design principles utilized on project-specific instance	Facilitates a gradual introduction of crime prevention by design into community; Fewer resources needed to maintain program; Crime-heavy areas may qualify for federal or state funding	Does not address community-wide crime prevention; Limits opportunities to incorporate Secured by Design to only when federal funding is available or when a property developer is interested	Availability of funding or willingness of property developers; Changing city administrations may not consistently seek external funding for specific projects	Though it lacks an ongoing crime prevention by design program, Louisville-Jefferson County Kentucky Metro Government received a grant for a crime prevention by design neighborhood assessment and improvement initiative in 2005 (ACTIVE 2010)
Require a "crime impact statement" for new property construction	Forces developers to consider environmental design effect on crime prior to development; Allows crime prevention by design administrator to accumulate data over time to improve local best practices	Requires all property developers to be trained in crime prevention by design principles; Does not address existing properties; Could add costs for developers to consult with attorney for premise liability considerations	Program would have to consider whether such documents could be used in court against developer in premise liability litigation; How impact statements are used to achieve crime prevention by design compliance determines effectiveness	Crime impact statements could have the same positive behavioral-influencing effect that environmental impact statements are believed to have (Olasky 2004)
Source: Author's review of example cities or academic research.				

Table 2 (continued) Program Principles				
Principle	Supporting arguments	Opposing arguments	Determining contextual factors	Evidence or Examples
Ownership	Other crime prevention by design components directly or indirectly support Ownership; Pathway designs, railings, landscaping, signage or other means of signaling the ownership of spaces define acceptable behavior in an area; Possible to instill territoriality on existing properties	Difficult to formally define Ownership and adapt concept to specific property; May require funds by property owner to implement successfully; May create an aesthetically displeasing "fortress" look	Ownership must be achievable without large investment by property owner or in an unappealing style; Requires competent crime prevention by design administrator with local expertise and crime prevention by design standards adaptable to the local environment	Enhancing Ownership is effective at reducing actual crime and fear of crime Ratcliffe (2003); Cultural norms pertaining to Ownership are not uniform, crime prevention by design must be adjusted for individuals or neighborhoods (Merry 1981)
Surveillance	By eliminating design or landscaping barriers to provide a clear line of sight around a property, residents or passers-by can monitor activity; Surveillance indicates to potential criminals that illegitimate behavior will be seen and reported to police; Video cameras may assist police in criminal apprehension	Existing properties may be expensive to retrofit for proper surveillance; Even when a property is designed to allow for surveillance, crime may occur when residents are not watching at night; Residents may be unwilling to report crime for fear of retribution; Cameras may intrude on privacy of property users or residents	Surveillance opportunities facilitated by design require active cooperation by residents; Surveillance may be most effective if in conjunction with neighborhood watch or community police patrolling; Properties with diverse residents (age, work schedule) may be more capable of day and night surveillance	Burglars avoid targeting areas where the perception of being observed is high (Sorensen 2003 and Weisel 2002); Video cameras may be unaffordable and give a negative "Orwellian" feeling to residents or visitors (Weisel 2002)
Access Control and Movement	Access Control and Movement reinforces Ownership concept while also presenting a physical obstacle to potential intruders;	Gates, fences and other barriers can signal to potential criminals that crime is common in an area; Installing access control measures may be a financial barrier for some properties	If pedestrian traffic is local traffic, natural surveillance benefits may outweigh the added potential for passers-by to target a property and commit a crime	Conflicting opinions among researchers and practitioners as whether the added surveillance opportunities created by increased pedestrian traffic outweighs the possible increase in crime from passers-by (Poyner 1983, Sorensen 2003 and Cozens 2005)
Property Management and Maintenance	Clean properties re-enforce Ownership and indicate to others that a criminal behavior is not acceptable; Through ordinances and property maintenance requirements, cities can hold property owners accountable for the ongoing upkeep of property	Areas where crime is the highest may also have property owners with the greatest difficulty of affording long term property upkeep; Depending on cities' current code enforcement programs, raising maintenance standards or increasing the frequency of inspection adds administration costs	Existing code enforcement programs determine the cost and likely resistance to implementation by property owners	Improving the cleanliness and aesthetics of a property can reduce crime (Ross 2000); "Broken Window Theory" which states that one broken window encourages other windows to be broken (essentially the same concept as property maintenance) is disputed (Thacker 2004)
Activity Support	Activity Support integrates actual resident use of spaces to increase surveillance, Ownership and access control; Effective at moving specific crime-prone activities (ATM machines, laundry area at night) to areas of activity where natural surveillance can assist	While new buildings can be designed to encourage non-criminal activities (walking, fellowship) to occur in or near public spaces, existing property changes may not change longstanding social norms or activity patterns by residents	Cooperation by crime prevention by design administrator, property management and area residents determines the extent to which design can affect activity locations and increase natural surveillance	Mixed-use neighborhoods containing combinations of commercial, retail and residential are believed to reduce crime by increasing natural surveillance (Cozens 2005)
Target Hardening	By increasing the quality of locks on doors, windows and other entry points, criminals may be deterred from breaking and entering; Existing structures can be retrofitted to improve entrance security	Criminals may pass up a house because it has secure locks, but they may simply target another property in the area with weak locks (crime displacement); New locks may not be affordable to high crime areas; Locks are only effective if utilized by residents	The financial resources residents have available to implement changes and the participation of home building material manufacturers will determine effectiveness	Crime prevention by design components will only be effective if they consider the financial limitations and technical capacities of residents (Dershem 1990)
Source: Author's review of example cities or academic research.				

and pedestrian "permeability" around a building, while others preferred that property designs maximize activity and increase natural surveillance. Such differences highlight the problematic nature of identifying any particular strategy or component as a "best practice."

Table 2, Implementation Approaches and Interpretations of Program Principles, combines experiences in crime prevention by design from local governments with external reviews from academic researchers. Determining which specific program structure to adopt or how to interpret a particular crime prevention by design principle is subjective (Cozens 2002). What a crime prevention by design police officer may have been determined to be a best practice in one city may be considered ineffective by a researcher evaluating a similar practice in a different city. For instance, researchers have reached opposite conclusions on the effect cul-de-sacs have on Access Control and Movement, some arguing that they limit natural surveillance opportunities from neighborhood traffic, others concluding that cul-de-sacs deter criminal activity by delineating public spaces from private ones (Poyner 1983, Sorensen 2003, Cozens 2005). Analysis of one city could take into account other variables that might influence crime, be it changes in local unemployment rates, changes in commuter or pedestrian traffic near a property, demographic changes in the local population, or usage of neighborhood watch programs. Other evaluations of crime prevention by design could simply measure changes in crime rates before and after a property or neighborhood incorporated program principles.

Furthermore, among the variety of implementation approaches, some are limited in practice to only a single city, meaning that the same approach in Lexington may not produce the same outcome. Table 2 is structured to summarize factors that could facilitate or hinder various crime prevention by design efforts of a local government. Whether examples come from an academic review or a current program practitioner, they may have equal relevance to developers

of Lexington's Secured by Design program. In public policy-making settings, program implementers may have to make decisions "even when they lack full or scientifically rigorous information about what works," (Bardach 2003). As such, information about certain cities or particular situations may be somewhat valuable irrespective of whether they have been empirically evaluated. Implementation approaches or program components listed in Table 2 may not be mutually exclusive.

Lexington Political, Organizational and Logistical Context

Identifying barriers to implementing Secured by Design in Fayette County depends upon the specific approach taken by city leaders. Some program approaches naturally align with planning efforts already in place by Lexington-Fayette Urban County Government's Police and Planning Divisions, others require investments and strategies not currently being considered. Table 3 lists individuals interviewed for this analysis. Of all the LFUCG-employed individuals interviewed, including a Councilmember, a Senior Planner of the Division of Planning, the Director of the Division of Planning, a Commander of the Division of Police and a Lieutenant, there was agreement that voluntary compliance for home builders was the best implementation approach. As might be expected, the Executive Vice President of the Home Builders Association of Lexington reported that area developers prefer a voluntary approach to incorporating Secured by Design in property development.

In addition to initial agreement on voluntary program compliance, all interviewees believed the Division of Police was currently best suited to manage the program. As all of the efforts to implement a Secured by Design program in Lexington to date have been Police-initiated, agreement that Police should initially lead the program may not indicate how it will be

governed indefinitely.

Interviews conducted for this analysis took place during what should be considered a preliminary planning process. If a Secured by Design program becomes established and long-term plans to encompass all of Fayette County are pursued, the role of the Division of Planning will have to be defined (Eblen 2010). Interviews with the Division of Police suggested that police will maintain authority over the program, while the Division of Planning staff could

Table 3 Secured by Design Project Interviews	
Commander Mark Barnard, Lexington Division of Police	Com. Barnard manages the Lexington Police Department's Training Section and Recruitment Academy. Barnard attended Secured by Design training events in conjunction with the Eastern Kentucky University Center for Crime and the Built Environment.
Lieutenant Gregg Jones, Lexington Division of Police	Lt. Jones is the Accreditation Manager for the Lexington Police Department's Bureau of Professional Standards. Jones currently serves on LFUCG's Land Subdivision Technical Committee managed by the Division of Planning and has attended Secured by Design training events.
Chris King, Director, Lexington Division of Planning	King oversees the all activities of the LFUCG Division of Planning. King is familiar with crime prevention by design and has a goal to include the concept in the Division's review processes in 2010.
Jimmy Emmons, Senior Planner, Lexington Division of Planning	Emmons focuses primarily on Infill and Redevelopment efforts for the Division of Planning. Emmons is familiar with the crime prevention by design and its possible application to Lexington.
Councilmember K.C. Crosbie, Lexington City Council	Councilmember Crosbie is seeking a third term as 7 th District representative on the LFUCG Council. Crosbie has worked with Police on crime prevention and design issues of neighborhoods in the 7 th District.
Todd Johnson, Executive Vice President, Home Builders Association of Lexington	Johnson represents over 1,200 area businesses involved in Lexington residential construction and remodeling. Johnson has attended Secured by Design training events and is coordinating efforts to have local construction materials accredited by Secured by Design.
(Barnard 2010, Crosbie 2010, Emmons 2010, Johnson 2010, Jones 2010, King 2010)	

not envision a comprehensive (county-wide) program that did not involve Planning having a major role (Emmons 2010). As explored in detail in a subsequent section, *Likely Program Approach for Lexington*, interviewees are less certain as to how Police should specifically structure and operate Secured by Design.

All interviewees cited the influence of the current economic recession on creating a new program. Like nearly any other policy initiative being developed in 2010, the reduced budget environment greatly defines the scope of a Secured by Design program. Later discussions of the

program's currently proposed structure examine the appeal of managing the program as a new non-profit organization versus a new LFUCG division. Planning staff indicated that a new program with minimal office space and staff would easily cost \$100,000 to \$250,000 to operate (King 2010). Crime prevention by design programs implemented in other U.S. cities in the past may have enjoyed greater flexibility to hire new personnel, expand overtime budgets of municipal employees to implement a new program, or even to offset costs with state or federal assistance. Some best practices are neither realistic during LFUCG's current revenue shortfalls, nor do they align with preferences expressed by home builders or staff of the Division of Planning and the Division of Police. Certain approaches might achieve program goals identified by some individuals during interviews, but might not achieve other goals. Table 4 lists conditions in Fayette County that would either facilitate or inhibit certain implementation approaches.

Some municipalities take steps to incorporate crime prevention by design through long term planning documents. The City of Roanoke, Virginia in 2001 included in its *Vision 2020* plan a goal to develop opportunities to use crime prevention by design in the city's property review process. Citizen groups, government divisions and political activists have produced several similar 'vision' statements in Fayette County (Crosbie 2010). Some documents have managed to impact LFUCG policy, others remain unused. For example, longstanding efforts to link Lexington's bicycle trails were aided by the inclusion of bicycle planning in the *Destination 2040* report (Office of the Mayor 2009).

Other goals in *Destination 2040*, like the completion of a monorail feasibility study for Fayette County, have not experienced similar momentum. The differences in success may come from the length of the respective plans' existence, the scope of the projects, the availability of

Table 4 Matching Crime Prevention by Design Implementation Approaches to Lexington		
Practice	Facilitating factors	Inhibiting factors
Crime prevention by design included as a goal of long-term city vision statements or comprehensive plans, usually as part of planning, zoning or public safety policy	Other Fayette County vision statements have included near-term action items; November 2010 local elections in Fayette County present an opportunity for Secured by Design to be included in administration vision plans; Long-term planning document approach may be conducive to current reduced budget environment	Lexington currently has at least five long-term planning documents, most of which include zoning or public safety issues that will not be revisited for several years; Other initiatives previously included in Lexington vision plans have not been implemented; Priorities in council and mayoral administrations may not align with vision statements produced in conjunction with previous administrations
Consultation with crime prevention by design administrator required for all new properties except single-family homes; Compliance with consultation voluntary	Current Planning Division staff and Police are familiar with Secured by Design principles possibly allowing a small number of property consultations to begin immediately; If Secured by Design consultation is required, voluntary compliance program may be preferred by housing developers	Planning staff and police interviewed believed this approach would impose excessive bureaucracy; Current LFUCG employees trained in Secured by Design would be insufficient if consultation was required; As developers of single-family homes are currently involved with Secured by Design planning, an approach that includes single-family homes may be more feasible; As developers are currently involved with planning the Secured by Design program, inclusion of any sort of mandatory component could discourage their support
Crime prevention by design standards incorporated into city building codes and ordinances for all new property construction or renovation except single-family homes	New building codes could be formed with current Planning Division and Police staff familiar with Secured by Design principles; Home builders already familiar with material testing component of Secured by Design; Planning staff said that to achieve other current safety and aesthetic standards, zoning ordinances coupled with enforcement have been necessary to influence property owner behavior	Planning staff and police interviewed believed this approach would impose excessive bureaucracy; Planning staff reported that additional resources required for this approach were unlikely to be allocated in current budget environment; As developers of single-family homes are currently involved with Secured by Design planning, an approach that includes single-family homes may be more feasible; Requires training of Building Inspection staff and possibly new personnel
Providing grants or incentives for property owners to incorporate crime prevention by design in new and existing properties	Interviewed individuals said if federal grants became available, then a grant program for existing homes should be pursued; If properties are remodeled, then developer has an incentive to use Secured by Design materials to increase resale value	No plans by current Planning Division staff or Police to include a grant component to program; Added expense of grant component not likely in reduced budget environment; No permanent funding source for existing property grants might make program participation and awareness sporadic
Crime prevention by design principles utilized on project-specific instance	Interview responses indicated this is the currently preferred approach; Facilitates ability to operate Secured By Design with existing resources and personnel	Does not address community-wide crime prevention that Planning Staff suggest might raise political support for Secured by Design program; Accumulation of local crime prevention by design expertise from ongoing program operations is limited given smaller number of homes being reviewed; May over-rely on developers to initiate projects or over-rely on federal funds for targeting high crime areas
Require a "crime impact statement" for new property construction	Aligns with Planning Division and Police's desire for program to eventually have community-wide effect on crime; Facilitates Planning and Police's goal for Secured by Design to be considered a part of "sustainable communities" initiatives in Lexington by requiring a crime impact statement in addition to currently required environmental impact statement	No support by developers for requiring a crime impact statement; Planning Division, Police and developers expressed concerns for creating additional legal liability for property owners; Current budget environment not conducive to hiring additional Planning or Police staff to review and approve crime impact statements

(Barnard 2010, Crosbie 2010, Emmons 2010, Johnson 2010, Jones 2010, King 2010)

outside funding or other factors. As such, including plans for incorporating Secured by Design into future planning documents does not preclude any other implementation approach. The only possible barrier such an approach presents is the risk of including Secured by Design plans in vision plans that never generate action, creating a perception among city leaders that the program does not merit further discussion in the near future. No LFUCG division or community organization has announced plans to produce another long-term planning document this year, but

2010 is an election year. For purposes of generating public discussion of a new program, campaign platforms by mayoral and council candidates could present an opportunity (Jones 2010). If a new mayoral administration or contingency of councilmembers include Secured by Design as one of their public priorities, the program may be more likely to be adopted in coming years. Building support to initiate Secured by Design in Fayette County in conjunction with a particular campaign could discourage future cooperation if an excluded non-supportive candidate was elected.

The approach taken by Broward County Florida in 1996 designated the Director of Development Management to review all site and building designs for compliance with crime prevention by design standards adopted by Broward County in 1996 (Broward 2010). The equivalent position in LFUCG would be the Director of Planning. Planning staff reported that its current divisional capacities would not allow for an additional specific review process for crime prevention (King 2010, Emmons 2010). The crime prevention by design program specifically being considered by Fayette County, Secured by Design, does not include a mandatory review process for all new property developments (Jones 2010). However, if Lexington's Secured by Design is to grow and eventually cover all properties in Fayette County, the program could likely not remain a solely police-administered effort. The personnel necessary for mandatory property evaluation would be a significant barrier to program implementation if this approach were pursued in Fayette County (Emmons 2010). Similarly problematic would be the approach taken by the City of SeaTac, Washington in 2003, in which the city's entire building and zoning code was revised to include crime prevention by design principles (SeaTac 2010). For Fayette County-area developers, costs would have to be incurred to ensure architects and construction professionals became familiar with new property standards. Broward County and the City of

SeaTac excluded single-family residential homes from the review requirement. Current discussions between LFUCG officials and area property developers center around an entirely voluntary program, with new, single-family homes being the primary focus (Johnson 2010).

The goal expressed by those interviewed in the Division of Police and the Division of Planning to have widespread participation from home or property owners in high-crime neighborhoods is at odds with the current absence of an identified funding source for a homeowner grant program. Added building costs to reach Secured by Design certification were estimated by one Lexington police officer to be \$650 (Jones 2010). Armitage's 2000 study of Secured by Design estimated developer costs for including certified building materials to be between \$150 and \$1,500 (Armitage 2000). Incorporating Secured by Design-certified materials may be less expensive during the initial construction phase as opposed to property renovation (Jones 2010, Johnson 2010).

What level of costs will be a barrier for homeowners will vary, but in low-income, high-crime neighborhoods where renovations may be more frequent than new housing construction, costs may discourage program participation. A 2007 study of crime prevention by design program compliance found that the availability of financial resources dictated the extent to which property owners incorporated program principles into existing buildings (Parnaby 2007). If Secured by Design is intended to reduce opportunities for home invasion, assault, loitering and other illegal activities, it cannot ignore the areas where crime is most prevalent. By not identifying financial assistance for property owners in low-income area, Secured by Design may be ignoring its most relevant constituents. Not focusing on Lexington neighborhoods with the greatest perceived need of crime prevention could reduce political support by Lexington leaders and create a significant barrier to growing or implementing Secured by Design.

Preliminary interaction with the Home Builders Association of Lexington indicates that new residential homes may be the most regular beneficiary of Secured by Design, but new residential subdivisions may not experience the same problems as older neighborhoods in other parts of Lexington (Johnson 2010). Of course, it is impossible to predict whether Secured by Design program administrators might engage in partnerships with low-cost housing programs like Habitat for Humanity or seek sponsorships with developers or building supply companies to retrofit properties in low-income neighborhoods. Lexington Police, in fact, led a 2009 initiative to help residents, owners and apartment complex managers limit their exposure to criminal behavior. The "Lexington Crime Free Multi-Housing Program" included a ten hour seminar by police, civil attorneys and other city officials, and allowed building owners to have their property inspected and certified as adhering to crime prevention by design (Division of Police 2009). No grants were made available to provide new locks, windows or any other property improvements, but if similar educational initiatives are a part of Secured by Design in the future, the lack of grant money for existing property owners might not be as great of a concern to city leaders.

If Lexington takes a voluntary program compliance approach, increasing the number of developers and property owners who incorporate Secured by Design could be difficult. The program aspect cited by those interviewed as being most likely to attract participants was the opportunity for reduced insurance rates (Barnard 2010, Jones 2010). "Reducing insurance bills is the main part of the economic risk-management strategy of Secured by Design. By utilizing the program, developers and homeowners are reducing their risk of crime as much as a home alarm system," suggested one Lexington police officer. Area insurance companies do currently offer discounts for using deadbolt locks and alarm systems, but tying discounts to a specific program like Secured by Design could be problematic (Kentucky Farm Bureau 2010). U.S.

insurance companies will be operating in a different governmental environment than exists in the United Kingdom. Particularly, the U.K. national government's backing of Secured by Design's product certification will not be the same in the United States, at least initially. As there are currently no Secured by Design programs in the U.S., there is no federal government agency that specifically endorses Secured by Design as being an effective reducer of crime. Staff from the Division of Planning believe that until Secured by Design became a nationally-adopted program, similar to the federal government's Fire Rating System and the Federal Emergency Management Agency's Community Rating System for flood insurance relief, insurance reductions would be difficult to negotiate (Emmons 2010).

Peter Olasky considered how property developers might be influenced to incorporate crime prevention by design if governments required "crime impact statements," (equivalent to environmental impact statements) for new development proposals (Olasky 2004).

Environmental impacts statements, he argued, have allowed local governments to increase awareness of environmental issues by developers. Apart from trying to comply with minimum local standards, impact statements make developers mindful of future risk of environmental litigation. LFUCG currently requires developers to identify potential environmental issues in planning proposals, but extending this requirement to include possible criminal behavior impact could be a significant expansion in the responsibilities of the Division of Police or the Division of Planning (Emmons 2010, Jones 2010).

But as a new program containing somewhat subjective principles, Secured by Design administrators could benefit from accumulating data and having a record of how developers interpret and incorporate crime prevention principles. Requiring a crime impact statement would facilitate Secured by Design proponents' goal of expanding the program to all of Fayette County,

but it conflicts with Police's desire to not impose "additional bureaucracy" on developers (Eblen 2010, Jones 2010). Currently, a Lexington police officer is included on LFUCG's Land Subdivision Technical Committee, allowing crime prevention by design principles to be conveyed during development planning. The 34-person Land Subdivision Technical Committee consists of LFUCG staff from the Division of Water and Air Quality, Planning, Engineering, Building Inspection, Traffic Engineering and representatives from utility companies, among others. Environmental impact statements are currently a part of the Committee's review process. Planning staff indicated that this committee would be the ideal place to consider crime prevention by design if an impact statement or similar documentation was a component of Lexington's Secured by Design program, but said manpower does not currently exist to examine crime impacts for all of the properties reviewed by the committee (Emmons 2010, King 2010).

Likely Program Approach for Lexington

Given that no U.S. municipality has implemented a Secured by Design program, the approach described in Tables 2 and 4 as "Crime prevention by design principles utilized on a project-specific instance" may best mirror the currently favored approach in Lexington. The cited example, though, Louisville Metro Government's hiring of a crime prevention by design adviser funded by a 2005 grant from a national philanthropy foundation to assess an urban neighborhood, is not entirely equivalent to the current plans by Lexington officials (ACTIVE 2010). Louisville used one-time funds to incorporate crime prevention by design into an overall redevelopment plan for a particular area. Police and Planning staff indicated that Lexington's Secured by Design program will likely focus on new home development, particularly testing and licensing of materials used in home construction.

Additionally, as found in every other U.S. local government's crime prevention by design program, Lexington officials cited parks, trails, bus stops, schools and other public spaces as being a focus of Lexington's Secured by Design program (Jones 2010). Incorporating a government-sponsored crime prevention program into properties like parks and schools that are taxpayer-financed, naturally is less controversial than imposing standards on private development. Work on such public projects will likely not pose any special barriers to Secured by Design's implementation. It is already LFUCG policy to include Police and Planning staff in such projects (King 2010). It is not clear from interviewees what role Secured by Design would play in government-owned property development if the program was privately administered (e.g. through a privately managed non-profit organization).

LFUCG Planning and Police appear to agree on a general approach to implement a Secured by Design program; they believe a voluntary program that does not require funding from LFUCG will give Secured by Design the best opportunity to be embraced by developers and to "get off the ground," (Barnard 2010, Johnson 2010). There is even agreement among home builders, elected officials, and staff from the Divisions of Police and Planning that Secured by Design should be a police-managed program, at least initially (Crosbie 2010, Johnson 2010, King 2010, Jones 2010). A police-managed program though, may currently be interpreted in distinct ways (Barnard 2010, Jones 2010, Emmons 2010). One option is for the Division of Police to operate Secured by Design as part of normal, crime prevention duties. Police would use their current budgets for training and personnel expenses, and their authority to administer Secured by Design would come from a resolution passed by the Lexington-Fayette Urban County Council. Planning, Building Inspection, Engineering and other LFUCG divisional staff

would be primarily involved in the production of a Secured by Design "design guide" that would interpret crime prevention by design principles and adapt them to Lexington (Jones 2010).

A second interpretation of "police-managed" program was offered (Barnard 2010). Lexington Police, with assistance from the Eastern Kentucky University Center for Crime and the Built Environment would create a local non-profit organization to manage Secured by Design. LFUCG officials, including representatives from the Division of Planning and the Division of Police, would serve on the board, but the program would operate independent of any specific government division (Barnard 2010). Similar to the first interpretation of a police-managed program, the non-profit Secured by Design organization might seek a formal resolution passed by the Urban County Council to designate the organization as the primary authority on crime prevention by design efforts in Fayette County. Such a resolution could also define the organization as a "Partner Agency," possibly allowing the Urban County Council authority to review program operations and financial records.

As a non-profit organization, one police officer explained, Secured by Design might have more legitimacy in the community than if it were controlled by any one government division (Barnard 2010). Such an arrangement, though, may not automatically lend credibility. Lexington leaders will have to consider the unique nature of the funding sources likely to support Secured by Design's operations. Secured by Design designates doors, locks, windows and other materials as being built to "Police Preferred Specifications," and in turn receives a fee for use of the Secured by Design logo (ACPO 2010). Lexington Police were not certain as to how revenue from licensing fees would be shared between Lexington and the Association of Chief Police Officers (the U.K. organization that owns and manages Secured by Design's trademark). Depending on how management of program revenues is structured for Lexington's program,

challenges could arise in defining transparency requirements of the managing board or LFUCG's authority to oversee operations. If Secured by Design is to any degree endorsed by or partnered with LFUCG, city leaders might feel a responsibility to investigate the program if some perception or allegation of mismanagement ever emerged. Recent misconduct at LFUCG partner agencies like the Bluegrass Airport and Lexington Public Library have brought a renewed focus on oversight and accountability among city leaders (Crosbie 2010, Blackford 2009). The possible semi-public, semi-private nature of a non-profit structure, could be a barrier to program implementation.

Conclusions, Limitations

Beyond problems specific to particular implementation approaches, the subjectivity of some of Secured by Design's six core principles pose a challenge for Lexington's program. The Property Management and Maintenance principle implies that program administrators must somehow monitor properties designated as Secured by Design over time. Such an interpretation suggests that Secured by Design designated properties would have a perpetual obligation to maintain upkeep, and accordingly, program administrators would have to maintain inspection of properties indefinitely (Beckford 2008). If Secured by Design was implemented similar to SeaTac, Washington, where city building codes were revised to reflect crime prevention by design principles, enforcing Property Management and Maintenance could likely be accomplished through existing Code Enforcement efforts. But interviewees indicated a complete revision of building codes would be too great of a strain on human and financial resources for LFUCG. If building codes were revised or if the LFUCG Division of Code Enforcement was needed for enforcement in some capacity, Secured by Design could not be managed by a non-

profit organization; if government employees are being used to carry out a program, it would require a unique arrangement for that program to not be controlled by the government.

Interviews with LFUCG staff and property developers indicated that Lexington's Secured by Design program will focus on preventing crime at the planning stage of development, primarily by advocating the usage of building materials built to Police Preferred Specifications. As more empirical evidence exists for the effectiveness of specific crime prevention tactics like Target Hardening than exists evidence for Secured by Design, an initial program focus in Lexington on building materials may be advantageous (Dershem 1990, O'Shea 2000, Cozens 2005). More simply, whether homes in Lexington have new locks installed as part of a Secured by Design program, as part of another crime prevention by design program, or entirely absent of any program, the property is less likely to be targeted by criminals. Given the current testing of building materials in conjunction with the Lexington Home Builders Association, it appears that the logistics of Secured by Design's primary focus are being actively thought-out and evaluated. How to achieve Target Hardening through use of Secured by Design-approved building materials will likely not be a barrier to implementation. But the manner in which other Secured by Design principles (e.g. Property Management and Maintenance, Access Control and Movement) will be incorporated into a working program has not been fully considered. As discussed earlier, researchers of city planning and criminology continue to debate the usage of cul-de-sacs versus grid layouts in neighborhood planning, some arguing that passing traffic discourages crime, others contending it facilitates crime (Cozens 2005). Lexington program implementers will have to reconcile conflicting interpretations of crime prevention by design's subjective principles.

Trips to the United Kingdom to see Secured by Design in action helped build support in the Lexington Division of Police to start a program locally (Eblen 2010). The critical role of

U.K.'s national government in supporting Secured by Design may have been under-appreciated. Interviews did not clearly explain how the lack of national requirements for crime prevention liaison officers and other crime-related urban planning legislation could affect a program in Lexington. One officer stated that adapting to the U.S. environment where Secured by Design was not explicitly supported by state or federal governments would be "part of the creative process." Perhaps it can be expected that a complete understanding of how Secured by Design should be adapted is still being developed. Still, the environment in which Secured by Design will operate in will not be the same as the environment across the pond. National legislation like the Crime and Disorder Act of 1998 and the Planning and Compulsory Purchase Act of 2004, or government-issued policy memos like the Urban Policy White Paper in 2000, helped develop a broad, strategic approach to bringing police and planning authorities together to design out crime (Morton 2005). Even in the United States, enabling legislation from state governments helped develop widespread local crime prevention by design programs across Florida and Virginia (Roanoke 2010, Broward 2010).

Apart from the building material testing and certification program, Lexington's program would have to be structured differently from the U.K.'s. Being the first U.S. municipality to use Secured by Design is likely to impede the transferability of program effects in the U.K., and may inhibit the program from eventually having an impact on all of Fayette County. If the federal government or Kentucky state government was familiar with and supportive of Secured by Design to the degree that the U.K. government is, duplicating the program's success in Lexington might be easier. If the program was not perceived to be a success, Lexington Police would probably not be trying to implement it. That perceived success, though, is based on a program in the U.K.. The political and governmental environment in which Secured by Design currently

operates in facilitates program awareness and usage in the U.K.. To what degree conditions specific to the U.K. determine program success is uncertain. But, if Secured by Design in Lexington is to develop from a voluntary program into a fundamental component of the city's planning and construction process, a lack of state and national government funding or supportive legislation may be an issue. It is not certain that such support might not emerge in the future, either from government or private organizations. Nonetheless, Lexington program implementers should consider how state or federal officials might facilitate the success of Secured by Design.

Secured by Design advocates estimated that the program would not be ready to start in Lexington until the end of 2011. To what extent can interviews performed in March 2010 be used to identify barriers to effective program implementation a year from now or longer? No one interviewed for this research claimed that plans for the program were finalized. How staff members from the Division of Planning and the Division of Police envision the program today may change before implementation. Meetings with home builders, city leaders, academic researchers, planning professionals and police identified several issues that will undoubtedly have to be resolved. Some of the best practices identified by researchers or crime prevention by design program administrators offer guidance to resolve implementation barriers, others may not be applicable to the particular approach taken for Lexington's program. To effectively implement Secured by Design, program administrators may need to:

1. Pursue strategies to increase program awareness and support at the state and federal level. Recognition by higher governments of Secured by Design's possible effectiveness as a crime prevention tool could ease program growth either by providing funding directly or increasing awareness of the program in Lexington.

2. Examine the implications of managing the program through a government division or non-profit board administering the program. A non-profit program may not be as dependent on LFUCG funding, but a government program may be better suited for incorporating Secured by Design principles into county-wide planning and development.
3. Identify how usage of the Secured by Design trademark and funding from the certification of building materials will be arranged with the Association of Chief Police Officers. Partnering with the privately-owned program in the U.K. may in many ways facilitate program operations, but the arrangement could also limit the flexibility of Lexington to adapt the program's structure and policies.
4. Develop strategies to serve existing low-income area properties with high-crime. What the current focus of the program appears to be - approving building materials and designs for new residential homes - may not be addressing the most pressing crime prevention needs of the community. Secured by Design efforts may be more effective if done in conjunction with existing community policing efforts like neighborhood-assigned officers, the Lexington Crime Free Multi-Housing Program and neighborhood watch programs.
5. Structure the program to be adaptable to unique property situations, while clearly delineating methods to incorporate program principles. If program usage in Lexington grows, a program manual may be necessary to provide detailed guidance for developers or homeowners. Absent clear program interpretation, widespread usage throughout the community may be difficult.
6. Incorporate Secured by Design standards into building codes and planning ordinances if the program is to expand and include larger numbers of properties. Such an undertaking

may require LFUCG employee resources that are not currently available. Though current plans do not call for any change to LFUCG rules, the long-term growth of the program will be difficult without incorporating Secured by Design principles to some extent.

7. Negotiate with insurance providers how rate discounts could be offered for properties certified by Secured by Design. Area insurance agencies already provide similar discounts for use of certain home security measures, but tying discounts to a specific program new to the United States may be a challenge. Program implementers might seek out alternative incentives to encourage usage of the program, especially if insurance discounts are not available.
8. Define how Secured by Design should interact with LFUCG's Land Subdivision Technical Committee and other city planning processes. The role of police officers in the planning process may be more effective if it is formalized either by action of the Urban County Council or changes to internal policies and procedures. Ensuring that LFUCG reviews of building architecture or development plans consider crime prevention practices may only be possible if the responsibilities and authorities of the Division of Police are communicated to the Division of Planning.
9. Define what formal role staff from the Division of Planning should play in Secured by Design. If the program is established as a police-led non-profit organization, how will the expertise of city planners be utilized to ensure program principles are incorporated into neighborhood design projects across Fayette County? Crime prevention by design efforts will be most effective if they combine the expertise of police and urban planners.

References

- ACPO. (2010). "Secured by Design - About us." Association of Chief Police Officers. Retrieved March 2, 2010. Online at: <http://www.securedbydesign.com/about/index.aspx>
- ACTIVE Louisville. (2010). Louisville Metro Government. Retrieved March 10, 2010. Online at: <http://www.louisvilleky.gov/Health/MHHM/ACTIVE+Louisville.htm>
- Armitage, Rachel. (2000). *An Evaluation of Secured by Design Within West Yorkshire*. Home Office. Briefing Note 7/00, Crown Copyright, London.
- Bardach, Eugene. (2003). *Creating Compendia of 'Best Practice.'* Journal of Policy Analysis and Management. Vol. 22, Issue 4.
- Barnard, Commander Mark. Lexington Division of Police. (2010). Personal interview. March 12, 2010.
- Beckford, Calvin. (2008). *Secured by Design - A short guide to the history and development of the UK police service's foremost crime prevention initiative*. Association of Chief Police Officers Crime Prevention Initiatives Ltd. May 2008.
- Blackford, Linda and Ryan Alessi. (2009). "Atmosphere changing for boards, executives?" The Lexington Herald-Leader. September 6, 2009.
- Booth, Alan. (1981). *The Built Environment as a Crime Deterrent - A Reexamination of Defensible Space*. Criminology. Vol. 18, No. 4.
- Broward County Florida Division of Permitting, Licensing and Consumer Protection. (2010). *Zoning*. Retrieved March 1, 2010. Online at: <http://www.broward.org/permittingandlicensing/zoningpermits.htm>
- Clarke, Ronald. (1995). *Situational crime prevention*. British Journal of Criminology. Vol. 20. p. 136-147.
- Cozens, Paul M. et al. (2005). *Crime prevention through environmental design(CPTED): a review and modern bibliography*. Property Management, Vol. 23, Issue 5, p. 328-357.
- Crosbie, Councilmember K.C. (2010). Lexington-Fayette Urban County Council. Personal interview. March 1, 2010.
- Decra Roof Systems Limited. (2010). "Secure by Design." Retrieved March 20, 2010. Online at: <http://www.decra.co.uk/Technical%20Support/Enhanced%20Specification%20Services/Secure%20by%20Design.aspx>
- Dershem, Holly A. (1990) *Community Crime Prevention: A Review Essay On Program Evaluations and Policy*. Criminal Justice Policy Review, Vol. 4, No. 1/90, 53-68.

Division of Police. (2009). "Crime Free Multi-Housing Program." Lexington-Fayette Urban County Government. Retrieved April 2, 2010. Online at: <http://www.lexingtonky.gov/index.aspx?page=92>

Eblen, Tom. (2010). "Can a building discourage crime? - Yes it can, and new design program could lead to built-in deterrents." Lexington Herald-Leader. January 11, 2010.

Emmons, Jimmy. (2010). Infill/Redevelopment Planner Senior, Lexington-Fayette Urban County Government Division of Planning. Personal interview. March 5, 2010.

Feins, Judith D. et al. (1997). *Solving Crime Problems in Residential Neighborhoods: Comprehensive Changes in Design, Management, and Use*. National Institute of Justice.

Fleissner, Dan and Fred Heinzelmann. (1996). *Crime Prevention Through Environmental Design and Community Policing*. U.S. Department of Justice.

Gordon, Corey L. and William Brill. (1996). *The Expanding Role of Crime Prevention Through Environmental Design in Premises Liability*. U.S. Department of Justice.

Jeffrey, C. (1977). *Crime Prevention through Environmental Design*. (Beverly Hills: Sage).

Johnson, Todd. (2010). Executive Vice President, Home Builders Association of Lexington. Personal interview March 9, 2010.

Jones, Lieutenant Gregg. (2010). Lexington Division of Police. Personal interview. March 7, 2010.

Kentucky Farm Bureau Insurance. (2010). "Kentucky Homeowners Insurance." Retrieved March 1, 2010. Online at: <https://www.kyfb.com/insurance/insurance-products/homeowners/>

King, Chris. (2010). Director, Lexington-Fayette Urban County Government Division of Planning. Personal interview. March 5, 2010.

Lexington Division of Police. (2010). "Crime edges up because of economy." *City News*. Lexington-Fayette Urban County Government. April 8, 2010. Online at: <http://www.lexingtonky.gov/index.aspx?recordid=1294&page=24>

Mead, Andy. (2009). "Lexington mayor calls for 5% budget cut." Lexington Herald Leader. November 21, 2009. Retrieved March 1, 2010. Online at: <http://www.kentucky.com/2009/11/21/1028371/lexington-mayor-calls-for-5-budget.html#ixzz0kjF4L6m0>

Merry, S. (1981). *Defensible space undefended: social factors in crime prevention through environmental design*. Urban Affairs Quarterly, Vol. 16 No. 3, pp. 397-422.

Moffatt, R.E. (1983). *Crime Prevention Through Environmental Design - A Management Perspective*. Canadian Journal of Criminology Vol. 25, Issue 1, pp. 19-31.

Morton, Clare and Ted Kitchen. (2005). *Crime Prevention and the British Planning System: Operational Relationships between Planners and the Police Planning*. Practice & Research. Vol. 20, No. 4, pp. 419-431

Newman, Oscar. (1973). *Defensible Space: People and Design in the Violent City*. Architectural Press, London.

Newman, Oscar. (1996). *Creating Defensible Space*. U.S. Department of Housing and Urban Development.

NICP. (2009). *Client List*. National Institute of Crime Prevention. Simpsonville, South Carolina. Retrieved March 10, 2010. Online at <http://www.cptedtraining.net/index.php?page=client-list>

ODPM. (2004). *Safer Places: the planning system and crime prevention*. Office of the Deputy Prime Minister and the Home Office of the United Kingdom. Retrieved March 10, 2010. Online at: <http://www.cabe.org.uk/publications/safer-places>

Office of the Mayor. (2009). "Citizens chart course for city's future in 'Destination 2040' report, says Mayor." *City News*. Lexington-Fayette Urban County Government. January 13, 2009. Online at: <http://www.lexingtonky.gov/index.aspx?recordid=150&page=24>

Olasky, Peter. (2004). *Crime Impact Statements*. Columbia Journal of Law and Social Problems. Vol. 37 No. 329.

O'Shea, Timothy. (2000). *The Efficacy of Home Security Measures*. American Journal of Criminal Justice. Vol. 24 No. 2.

Parnaby, Patrick. (2007). *Crime prevention through environmental design: financial hardship, the dynamics of power, and the prospects of governance*. Crime Law and Social Change, 48:73-85.

Poyner, B. (1983). *Designing Against Crime: Beyond Defensible Space*. Butterworths, London.

Poyner, B. (2006). *Crime Free Housing in the 21st Century* (London: Jill Dando Institute of Crime Science, University College).

Ratcliffe, J. (2003). *Suburb Boundaries and Residential Burglars*. Trends and Issues in Crime and Criminal Justice. No. 246, Australian Institute of Criminology, Canberra.

Roanoke Virginia, City of. (2010). "Vision 2001-2020, Full Plan." City of Roanoke Planning, Building and Development. Retrieved March 15, 2010. Online at: <http://www.roanokeva.gov/85256A8D0062AF37/vwContentByKey/N254FQP9276FGUREN>

Robinson, M. (1999). The theoretical development of crime prevention through environmental design (CPTED). *Advances in Criminological Theory*, 8, 427-462.

Ross, C.E. and Jang, S.J. (2000). *Neighbourhood disorder, fear and mistrust: the buffering role of social ties with neighbours*. *American Journal of Community Psychology*, Vol. 28 No. 4, pp. 401-20.

SeaTac Washington, City of. (2010) *Prevent crime through environmental design*. Retrieved March 1, 2010. Online at: <http://www.ci.seatac.wa.us/index.aspx?page=234>

Sorensen, D. (2003). *The nature and prevention of residential burglary: a review of the international literature with an eye towards prevention in Denmark*. Retrieved March 10, 2010. Online at: http://www.justitsministeriet.dk/fileadmin/downloads/Forskning_og_dokumentation/The_Nature_and_Prevention_of_Residential_Burglary.pdf

Stark, Rodney. (1987). *Deviant Places: A Theory of the Ecology of Crime*. *Criminology*. Vol. 25, No. 4.

Thacker, David. (2004). *Order Maintenance Reconsidered: Moving Beyond Strong Causal Reasoning*. *Journal of Criminal Law and Criminology*. Vol. 94, Number 2.

Tilley, N. and Webb, J. (1994). *Burglary Reduction: Findings From Safer Cities Schemes*. Crime Prevention Unit Paper 51, Home Office, London.

UK COD. (2009). Sustainable Communities Conference. University of Kentucky College of Design Retrieved March 10, 2009. Online at: <http://www.uky.edu/Design/sustainablecommunities.html>

Weisel, Deborah Lamm. (2002). *Burglary of Single-Family Houses*. U.S. Department of Justice, Office of Community Oriented Policing Services.