

DESIGNING OUT CRIME IN SOUTH KOREA: QUALITATIVE ANALYSIS OF CONTEMPORARY CPTED-RELATED ISSUES

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Socially Responsible Design (SRD) is to widen discussion about ethical approaches designers, architects and engineers can take in order to help 'design out' crime from society (Gamman, 2007). Specifically, CPTED is a philosophy and practice which aims at socially responsible design to significantly reduce crime within communities. Also, despite criticisms concerning the apparent lack of evidence to support this approach, CPTED or Designing Out Crime is an increasingly fashionable crime prevention approach which is being implemented on a global scale (Cisneros, 1995). This paper will explore the route taken by South Korea in the last 18 years to develop an environmental approach to crime prevention. Furthermore, this paper will illustrate the growing interest and investment in CPTED by private enterprises and public policy makers, as well as discussion on the challenges that architects, police and researchers face resulting from a series of local trials.

According to the theory of deindividuation (Zimbardo, 1970: 237-307), when we feel we are an anonymous member of a crowd, then our inhibitions against anti-social behaviour are released. We feel it is very unlikely that we will be identified and thereby punished for our behaviour. It sometimes makes people more likely to commit a crime (Diener, 1976: 178-183).

For example, with the increasing population density in Korean urban society in recent decades, (especially in the Seoul Metropolitan region) increasing crime due to deindividuation is clearly evident. This is further supported by the official police crime statistics for the past 3 decades (1976 ~ 2005) that demonstrates in Korean urban spaces where increasing numbers of people are living and working, they have become more vulnerable to crime. Importantly, as the

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number of offences is increasing, the number of cases solved is decreasing (National Police Agency, 2006: 157).

Moreover, due to mass media outlets, Korean citizens recently have abundant opportunities to view/read psychopathic serial crimes such as homicides, child kidnapping and sexual offences than ever before. It may still generate a high level of fear of criminal victimization for them despite the contrary result. The level of fear of crime perceived by the Korean people has been decreasing since 1998 according to the survey. Furthermore, it also shows that the criminal victimization experiences have been declining since 1998. However, it is yet to be explored why there is an apparent disparity between the police crime data and the survey result. of a recent Criminal Victim Survey (KICJP, 2006). As Lab (2004: 16) indicates, because of fear, people may respond in a variety of ways: some individuals will avoid certain places at certain times or stop going somewhere altogether; others may install locks and security devices and stay inside their fortress; the public may demand a greater police presence. Thus, the perception of fear per se can bring a considerable amount of direct or indirect impact on a community in terms of socio-economic costs, not to mention the first direct damage from criminal victimization.

The Charter of New Urbanism (see www.cnu.org/charter) stipulates "The revitalization of urban places depends on safety and security. The design of streets and buildings should reinforce safe environments, but not at the expense of accessibility and openness". Also The European Urban Charter asserts the basic right for citizens of European towns to "a secure and safe town free, as far as possible, from crime, delinquency and aggression". This basic right to a safe community has been enshrined into many national and local crime reduction programs all over Europe (DOE, 1994: 23). Currently, there is no such charter in Korea. Not because the problem of crime in Korea is not as significant as in the US or Europe. It is simply because the stakeholders in the field of urban planning and design in Korea are not aware of the imperative of community safety and security and critically, its long term social and economic implications. Prevention is always better than cure. Just as ISO 26000 – Social Responsibility stipulates, the mission of CPTED will be tireless dialogue and action for shared responsibility to reduce crime problems.

In this context, this paper aims at demonstrating CPTED approaches to the problems of crime in urban society in Korea explores the route taken by South Korea in the last seventeen years to develop an environmental approach to crime prevention. The threats, challenges and possibilities that practitioners like architects and the police, and researchers faced from a series of trials are also

debated. In what follows, however, the basic definition of terms and its theoretical issues related to CPTED are reviewed.

WHAT IS CPTED?

CPTED is an acronym for Crime Prevention Through Environmental Design which asserts that "the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life" (Crowe, 2000:46). It is based on studies executed from the mid-twentieth century onwards (Clarke and Mayhew, 1980; Poyner, 1983). In its applied form, CPTED is about risk management. Therefore, instrumental to its successful application is the ability of CPTED experts to effectively identify crime-related risks and render them seemingly concrete and calculable (see Ericson and Haggerty, 1997). CPTED is also a philosophy and practice which aims at Socially Responsible Design (SRD). SRD is to widen discussion about ethical approaches designers, architects and engineers can take in order to help 'design out' crime from society (Gamman, 2007).

Design Against Crime (DAC) is another socially responsive design movement which uses the processes and products of design to reduce all kinds of crime and promote community safety whilst improving quality-of-life. CPTED is similar to DAC in that it engages with iterative processes, but as Ekblom (2003) points out it can include a whole series of potential crime control systems: planning, design, construction, management, operation, security behaviour and supporting technology - thus multidisciplinary input, output and results, similar to those of DAC. CPTED also offers arguments and elements of practice linked to issues of sustainability. However, the main difference between the two is that DAC deals with products, CPTED with places although the disparity becomes obscure when the 'target hardening' design of windows and doors are included in CPTED as a part of the design process.

However, a range of theoretical criticisms of CPTED have been expressed (e.g. see Adams, 1973 Poyner, 1983). Ongoing modification of what is now known as first-generation CPTED by researchers, practitioners and policy makers has arguably responded to the criticism to make a more robust approach referred to as the second generation CPTED (Saville and Cleveland, 1997). This refinement extends beyond mere physical design to include social factors utilizing risk assessments, socio-economic and demographic profiling (Saville, 1996), as well as active community participation. Such developments in CPTED

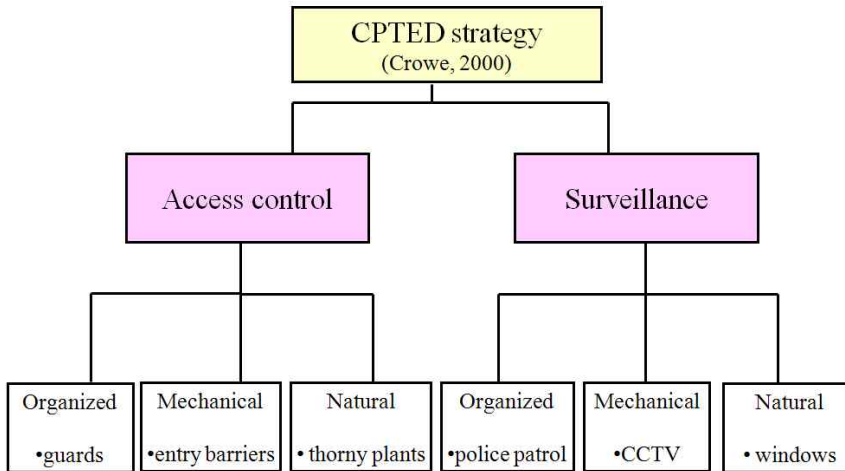


Figure 1. Three approaches for access control and surveillance

and Situational Crime Prevention Like CPTED, Situational Crime Prevention (SCP) seeks to reduce opportunities for crime. However, it is centred upon highly specific categories of crime (Clarke, 1992) and extends beyond environmental design using specific products, technology and procedures to reduce opportunities for crime. in Britain have popularised, refined and advanced the design-affects-crime debate (Cozens et al., 2005). In designing for a context, CPTED practitioners aim to achieve a self-perpetuating, happy equilibrium between people and the built environment in which they live. The philosophy is that the environment should be one where people feel comfortable living, working, eating and playing together, where they can have stable relationships, and where facilities meet the needs of a vibrant working community. CPTED as a philosophy offers directions as to how this might be achieved (Gamman and Pascoe, 2004: 9-18).

There are six broad characteristics to first-generation CPTED concepts, such as 1) Surveillance, 2) Access control, 3) Territoriality, 4) Image/maintenance, 5) Activity programme support and 5) Target hardening. As Crowe (2000) pointed out, surveillance and access control are particularly important strategy for CPTED and there are natural, mechanical (or electronic), organized approach for them (see Figure 1). By maximizing opportunities for surveillance, clearly defining boundaries and creating and maintaining a positive image, urban design and management can deter offending. This is explained by the fact that

offenders are potentially more visible to the general public and therefore, perceive themselves to be more at risk of exposure and subsequent arrest. This point is taken up again below in the discussion of ecology in crime causation in Korea.

METHODOLOGY

The qualitative data for this study were collected through, first and foremost, semi-structured interviews with CPTED practitioners and researchers from Korea and several other countries (the U.S., Japan, Britain, France, Canada, German and Netherlands). Over the course of 23 months, 33 interviews were conducted with CPTED practitioners and supporters, including current police officers, government officials, university professors, architects, urban planners, private security specialists, etc. to gain in-depth data on 'designing out' crime strategies and policies.

To supplement the interview data, non-academic CPTED literature was collected, including formal reports, CPTED journals, government documents, training manuals, and other promotional materials. Moreover, when the opportunity presented itself, a limited amount of ethnographic field research was also conducted (areas of study included CPTED conferences and CPTED training seminars).

The interviewed data and the published materials (to a lesser extent) were then subjected to discourse analysis (Bryman, 2001: 360; Sarangi and Candlin, 2003) in order to expose the dominant frames. The data extraction process began with a general "open coding" of the interview transcripts before moving on to the more rigorous "axial coding" stage (see Glaser and Strauss, 1967). After a lengthy process of coding and reinterpretation, a parsimonious list of frames finally emerged.

CRIME IN KOREA

Crime levels depend on a number of factors such as the political and social structures, traditional culture, the economy and the criminal justice system. It is widely believed that the rapid social transition and modernisation that occurred in Korea these past few decades was the catalyst for a significant increase in crime; not only in terms of numbers, but also in the variety and depravity of crime. Economic development precipitated significant social changes including

Table 1. Five major recorded crime types

Year	2002	2003	2004	2005	2006	2007	2008	2009
No. of incidents	475,369	497,066	455,640	487,690	489,305	521,890	544,527	590,366

Source: KNPA (www.police.go.kr)

patterns of social migration for economic improvement the spatial separation of the extended family increases in urban density increased cultural diversity and conflict and finally, a breakdown in the traditional informal means of social control (Friday, 1998). This has arguably produced social isolation, alienation, lack of commitment with increasing crime as the symptom.

Rapid industrialisation in Korea since the early 1960s has accompanied drastic changes in the spatial distribution of human settlements. The urban population, which accounted for only 28.0% of the total population in 1960, doubled to 57.3% in 1980 and further increased to 74.4% in 1990, primarily due to rural-to-urban migration for better job opportunities and education (Access Asia, 2000). Metropolitan growth and urbanisation have been most pronounced around the capital city of Seoul. The population increased more than four-fold from 2.4 million in 1960 to 10.6 million in 1990. However, while the population decreased slightly in Seoul between 1985 and 1990, Seoul’s satellite communities such as Kyonggi-Do (a ‘Do’, which often includes several cities and districts) have experienced the most population growth. Consequently, the Seoul metropolitan area contained 42.8% of the total population in 1990 (see Government Information Agency, www.allim.go.kr). To accommodate the influx of the rural population, Seoul expanded its boundaries. Furthermore, industrial or residential towns grew and evolved into new cities accelerating urbanisation.

Due to urban migration, the Seoul metropolitan area came to have ever increasing numbers of nuclear families move from their rural communities than ever before. As the society becomes more complex, anecdotal evidence suggests that individualism and hedonism have began spreading over the newly-formed urban landscape. Traditional Confucianism as a philosophy of life that emphasises social and natural order, social obligation and respect for age and family used to be integral to Korean culture but is also now fading. The elderly were considered superiors; as such, total obedience was given to them by the rest of the family. This type of informal social control which was

Table 2. The comparison of typical urban risk indices

Agency	Year and loss (No. of indents: Frequency)	Casualty	Property damage
National Police Agency (KNPA, 2004)	Homicide, violence, rape, robbery, theft in 2003 (490,000)	1,074 (death)	Robbery/theft ₩4.4 trillion
National Emergency Management Agency (NEMA)	Fire in 2005 (32,340)	505 (death)	₩0.17 trillion
NEMA	Natural disaster in 2005 (18)	52 (death/injury)	₩1.49 trillion
Road Traffic Safety Authority	Road traffic casualty in 2006	1 person (death/injury) every 90 seconds	₩9.9 trillion

Source: <http://www.nema.go.kr/data/statistic/list.jsp>; <http://www.nema.go.kr/data/statistic/list.jsp>
<http://www.rtsa.or.kr> (road traffic safety authority)

Note: 1,074 homicide cases in the KNPA data mean that the number of victims is far greater than the number of cases when considering serial murders. However, victim numbers were not available.

extremely influential in traditional communities quickly began disappearing with the emergence of the new urbanised areas. It also appears that complex and busy lifestyles and individualism developing in the Korean urban society have produced people with a lack of concern for local crime and neighbourhood safety, which has further resulted in the under-reporting of crime.

A transition to democratic capitalism in Korea produced several appropriate factors for criminal opportunity, such as time, place and circumstance. The large scale of population mobility in Korea increased social anonymity and decreased the protection and social control functions of the previously less transient population. Routine activities theory (Cohen and Felson, 1979) explains the social phenomena that crime increases with: an active, mobile, and decentralised population; high youth mobility and independence; and out-of-home employment by females who might otherwise serve as guardians of the homestead. Recent statistics from the KNPA crime data indicate a steadily rising crime trend in Korea (see Table 1).

In the last eight years, the total number of police recorded crimes in Korea has been gradually increasing. The total number of crimes taking place

increased by 19.5% from 475,369 in 2002 to 590,366 in 2009. In terms of urban risk, the frequency and economic loss scale of criminal incidents are much higher than those of fire or natural disaster in the Korean urban environment as can be seen in Table 2. Despite this problem, it is a matter of grave concern that the Korean people do not take security and crime prevention seriously and the criminal victims are inclined to keep the incidents confidential in order to prevent the bad news from affecting the house prices(Park, 2005). Some studies (Park, 2007 and Lee, 2004 cited in Park & Kim, 2007) of tangible and intangible socio-economic cost caused by crime indicate that during 2006 – 2007, the cost of crime was 30-40 trillion KRW in Korea.

CPTED APPROACHES IN KOREA

The Learning by Experiences

In the beginning of the nineties, the Commissioner General of the KNPA declared ‘a War on Crime and Disorder’ and the Korean Department of Housing and City, the Ministry of Construction and Transportation (MLTM) issued and distributed a ‘CPTED Guidelines for Housing’ to reduce crime and the fear of crime, especially for urban, residential communities. However, the guideline was hastily formulated by an American security consultant after coming to Korea for several days to conduct a site survey, but importantly, had never ‘lived’ in the Korean environment. It was therefore natural the CPTED guideline was established more in an American context than within a Korean framework taking into consideration critical cultural and demographic variations i.e. population density (U.S. 30 people per km², Korea 490 people per km²). Although it was destined for failure, it did, however, provide Korea with an invaluable ‘starting point’ and frame of reference for future endeavors.

Since the initial CPTED guideline was issued, academic researchers and professors in the field of crime prevention, security, urban planning and architectural designing began doing research in earnest. First, the experiences and theoretical frameworks developed in the USA and the UK were investigated. These studies showed that there was a significant amount of

Table 3. CPTED approaches by category

Categories	Core Concepts	Codes
Academic approaches	<ul style="list-style-type: none"> - Government CPTED-related R&D programs - Research studies on the relationship between crime/fear and place (such as housing areas, commercial sites, neighborhood parks, schools, etc) - Research studies on crime and relevant factors, such as density, land use, physical layout, connectivity-integration, floating population, etc - Studies on CCTV effect and intelligent video surveillance 	<ul style="list-style-type: none"> - CPTED - Fear of crime - Type of places - Research & Development - Crime and place - Environmental factors - Density and crime - Land use and fear - Physical layout - Connectivity - Integration - Space Syntax - Closed Circuit TV - Intelligent video
Institutional approaches	<ul style="list-style-type: none"> - CPTED-related laws - Local ordinances - Public policies & programs - Standards and conformity assessment system - CPTED training - Public CCTV initiatives - Street lighting program - Multi-agency Partnership Protocols 	<ul style="list-style-type: none"> - CPTED - Laws and legislations - Ordinance - Policies - Programs - Training - Closed Circuit TV - Lighting - Partnership - Protocols

research, theories, experiments and evaluation studies regarding environmental crime prevention. However, the volumes of knowledge and information were not summarized in a systematic format, seemingly because of the *different* academic ‘language’ and ‘jargon’ spoken by individual researchers and practitioners even though they may have been saying the same thing. This in itself is a barometer reading of the CPTED’s relative infancy as a discipline and the need for a more united and standardized convergence by researchers and practitioners on the subject.

The result of the studies categorized the literature into largely two views. An ‘Offender-Oriented perspective (Chicago school and spatial school) and a Built-Environment perspective (Oscar Newman and situational approach). Several

scale levels treated within most literature were districts, neighborhoods, public spaces, building and building elements. Additionally, it was discovered that Police Departments, relevant associations and companies were also proactively encouraging the CPTED concept by providing awards and licensing programs for new developments and CPTED remodeling of any type, e.g. housing, car parks, shopping malls, stadiums, schools, and security-related products in Western Europe (SBD, www.securedbydesign.com). This was initiated by ACPO (Association of Chief Police Officers) a Crime Prevention Initiative company in Britain, and the Dutch Police Safe Housing Label. Evaluations indicated impressive results of those programs in general (Pascoe, 1993). Importantly, this was underpinned by trained CPTED Police Officers and approximately 400 Architectural Liaison Officers (or Crime Prevention Design Advisor in London) across the UK. Additionally, there is a special CPTED Training Course in NPIA (National Policing Improvement Agency, www.npia.police.uk) in the UK and just as many CPTED Training Courses in the USA.

Contrarily, the Korean Police focused on the apprehension of offenders in a 'reactive' fashion rather than 'proactive' methods of deterring was incorrectly not considered serious during the 1990s. At the time, the Police in the national and local levels were not even aware of the term CPTED, let alone understanding its mechanisms and principles. This lack of awareness was mainly due to a systemic, organizational culture within the Police Force that implies crime can *only* be prevented through catching criminal offenders. Despite the lack of interest and investment in the field of CPTED as a whole, academic researchers and scholars continued their research studies and evaluations. However, since the 2005 the KNPA has been making efforts to promote some practical CPTED programs although the extent of the efforts was fluctuating.

The CPTED in Korea can however be categorized into an academic approach and institutional approach as Table 3 shows.

Academic Approaches

There can be several academic approaches, such as government CPTED-oriented R&D projects and general research studies on crime and environmental factors.

Government CPTED R&D Programs

Most major developments driven by MLTM including Pangyo/Kwanggyo new residential town, Sejong Multifunctional Public Administrative City (SMPAC, see www.macc.go.kr) and Inno-City projects for 9 provinces it was decided to develop their own individual CPTED guidelines substantially addressing each local context. A certain proportion of research grants were allocated in those projects.

Also as a part of the VC (Value Creator) – 10 project of R&D Roadmap MLTM also launched an Urban Regeneration project and U-Eco (Ubiquitous and Eco-friendly) City project, a multi-billion dollar Research & Development including pilot programs (e. g. test bed as a platform for experimentation for large development projects). The projects recently included CPTED according to the Urban Regeneration Working Group and the U-Eco City Working Group in MLTM. InnoCity project (see <http://innocity.MLTM.go.kr/innocity/info.jsp>) is another major development project of MLTM which is adopting CPTED in its planning and design process. Seoul Metropolitan Government also initiated a CPTED research project with planners, designers and criminologists (including the writer) in the New Town Development Project to make the city centre safer for women as a part of the ‘YEO-HANG (Women friendly city project)’ project. Although some of the funding programs were reduced or even cancelled as the changing government policy made too much of Green Growth and Four Rivers Restoration Projects in Korea. The Korean Agency for Technology and Standards (KATS) has also been investing in R&D program since 2007 for the standardization of software and hardware CPTED strategies and technology.

Research Studies on Crime and Environmental Factors

Particularly since 2000 a lot of research studies were carried out by many scholars from a variety of academic background, such as urban planning & design, architectural design, information technology, security and police science, geography, criminology, sociology, public administration, public policy, criminal justice studies, etc in Korea. For example, some researchers studied the relationship between crime and place, such as apartment complexes, low-rise multi-family housing, detached houses, commercial sites, neighborhood parks, transportation facilities like train stations (Choi 2000; Park 2005; Kim 2002; Kang 2008, etc). The relationships between crime and visibility (Lim 1992; Min et al. 1992), urban density and the scale of housing complexes (Jang 1997;

Kang & Kwon 2002), street lighting and site-specific fear of crime (Kim JS 2002; Kim HS 2007) were also explored. Jung (2007) and Park (2003) scrutinized crime hot spots through GIS software programs. Pyo (2003) and Park (2006) studied CCTV and offenders' behavior and perception. Choi (1997) studied the environmental factors' impact on offenders' spatial decision making. Park (2009) studied and developed a guideline for effective and scientific security CCTV planning and management practice for the Ministry of Public Administration and Security (MOPAS). Cited mostly from Park & Kim (2007)

Institutional Approaches

CPTED-Related Laws and National Guidelines

The *Citizen Life Safety Bill* was officially proposed by a Member of Parliament recently in order to make safe and secure urban environments and to deal with a variety of natural disaster and human risk in a systematic and coordinated manner. It is considered that if passed the Bill will have a significant impact on CPTED in Korea because it covers even intentionally caused crime problems by making a legal duty for the central and local government to reduce and prevent crime in their policies and programs. It will be able to make crime reduction a shared responsibility just as the philosophy of Community Policing is orienting. In the UK, the Section 17 of the Crime and Disorder Act 1998 states: "Without prejudice to any other obligation imposed on it, it shall be the duty of each authority to which this section applies to exercise its various functions with due regard to the likely effect of the exercise of those functions on, and the need to do all that it reasonably can to prevent, crime and disorder in its area". (www.reading.gov.uk)

It promotes the practice of partnership working to reduce crime, disorder and anti-social behavior. It places a statutory duty on the council and its partners such as the police, fire services, probation and health to develop and implement a strategy to tackle problems in their area. It is expected that the *Citizen Life Safety Bill* in Korea will make the responsible authorities in partnership with a range of other local private, community and voluntary groups and with the community itself for addressing both the causes of crime and the interventions in criminal offences.

Interdisciplinary studies between urban planning/design experts and criminologists (or police scientists) enabled KNPA to issue a 'National CPTED Guideline' in 2006. The guideline is composed of five parts 1) Introduction 2)

Definition and Principles of CPTED 3) Foreign CPTED Cases 4) Basic CPTED Design and Management Strategies 5) CPTED for the type of developments and places. Right after the guideline issuance, KNPA requested MLTM to employ the guideline as much as possible for every new development or regeneration projects. MLTM reluctantly accepted the request for two reasons. Firstly, they were not familiar with CPTED and secondly, they did not feel responsible for crime prevention. As a result, they referred it to the Korea National Housing Corporation (KNHC) and the Korea Land Corporation (KLC) They merged and became 'Korea Land and Housing Corporation (KLHC)' since 2009. for adaptation which is yet to be confirmed as no police CPTED experts were actually invited for advice and consulting. Furthermore the guideline was not specific enough to impress and satisfy designers and planners for implementation in practice and some of the contents were not properly compatible with the current regulations. Nevertheless, the CPTED guideline has been continuously requested by a number of private developers and planners as a frame of reference, and in some cases, embraced comprehensively by a considerable number of large scale housing and office building developers. Why? Given the competitive nature of the marketplace, developers were looking to find new ideas for selling houses and buildings at a premium price and the CPTED model was the only realistic framework holistically addressing crime prevention and security within building developments thereby allaying one of the major concerns (safety and security) for potential customers.

Eventually some other CPTED guidelines were developed in a local and a national level. 'CPTED Guideline for Sejong Special Autonomous City (a multi-purpose city in Chungnam Province) The writer provided a consultancy in the project development. However, the plans for the city have resulted in numerous disputes in the National Assembly because it is largely perceived by many stakeholders that the plan was not economically efficient and politically correct. ' was made in 2007. In addition 'Seoul New Town CPTED Guideline' was produced in 2008 as a part of the YEO-HANG project for the regeneration of decayed area in Seoul. 'National CPTED Guideline for 9 Innovative Cities' was also developed - the writer was leading the project - in 2009. In terms of scale they are probably the most specified and illustrated CPTED design guidelines so far in Korea.

Local Ordinances

‘Seoul Urban Regeneration Ordinance’ was revisited and revised last year since the Seoul Metropolitan Government completed the development of a CPTED guideline for New Town Projects. Now the developers and planners should follow the New Town CPTED guideline at the planning and designing stage to get a planning permit from the City Planning Department, which was not the case in the past. Therefore the designers have to study and seriously consider CPTED in specific site assessment and designing. Some major private security corporations and individual security experts have been involved in CPTED site-survey and consultancy for relevant developers and planners. After the Seoul City’s initiative launch, Bucheon-City also officially bulletined that the City will employ CPTED for city regeneration projects in September 2009 (www.sisaseoul.com). ChungNam County Council also made an MOU for the employment of CPTED in its local ordinance with the counterpart Provincial Police Agency in April 2010. It is expected that more and more cities and district might make or revise CPTED-related ordinances.

Public Policies and Programs

Early this year, the Ministry of Land, Transportation and Maritime Affairs (MLTM) revised ‘Sustainable New City Development Planning Policy’ to include CPTED. It is believed that the fore-mentioned KNPA’s efforts might have influenced MLTM to do so. MLTM is also newly driving the introduction of ‘Security Performance Grade Mark System for Quasi-Housing (e.g. vulnerable housing like studio apartment)’. The Seoul Metropolitan Government’s ‘YEO-HANG’ program YEO-HANG program as a gender governance model was presented and introduced at the Annual General Meeting for the UN Commission on the Status of Women (CSW) held in New York on March 2009. started in 2007 targeting a safer city for women and children, particularly vulnerable groups to criminal victimization is another example of public program implemented by a local authority. The core project tasks include the secure design and management of vulnerable places and facilities, such as public and commercial parking lots, public convenience, community parks, underpasses, play grounds for children and so forth through improved architectural design, lighting, CCTV and panic alarm installation, coloring, landscaping, etc.

The Korean Planning Association also established a ‘City Assessment System’ and ‘Liveable City Awards scheme’ sponsored by MLTM and KLHC

in 2007. A CPTED category is included in the assessment system criteria and awards scheme which will be able to incite more local authorities to employ the ‘designing out’ crime approach. However, an interviewed urban planner indicated the indices need more items as per the following example:

The Liveable City Awards scheme appraises only one item; the number of street lamps and security lights rather than a comprehensive CPTED checklist. What can we expect from this one item to improve community safety? We definitely need to include a lot more elements in the award appraisal.

It is expected that MLTM’s ‘Sustainable New City Development Planning Policy’ may diversify the CPTED appraisal items for the award program although CPTED practitioners and academics have to work on checklists.

Standards and Conformity Assessment System

Since 2005 the police have met public agencies and local authorities and persuaded them of the importance of CPTED at the planning and designing stages. Some local police showed local residents a crime risk map which was created by a series of site security surveys and persuaded them to install security bars, barbed wire for LNG pipes and alarms (with magnetic sensors) to deter domestic burglary. Although there was a certain amount of resistance from the residents because of the lack of financial support from local authority, they finally accepted and followed the police advice and spent some money for the ‘target hardening’. The result was impressive by showing a 23.7% drop in domestic burglary and significantly high satisfaction with the local police service - 85% were ‘very satisfied’ and ‘satisfied’ when compared to the national average 55% (from a Suseo Police internal document, 2005). However, it was found that there are no standardized good practice and hardware specification (e.g. performance standards for proper security glass, windows, security bars, etc). An evident need for the national standards and certification as a conformity assessment system was suggested by many stakeholders involved in the police CPTED and target hardening program.

In the context, the Korean Agency for Technology and Standards (KATS) has started a development program – now the project is being carried out jointly by the Institute of Crime Science (Yongin University) and the Korea Institute of Construction Material (KICM) - in 2007 to make CPTED system

standards (as Software) and security product standards which is already the case in Western Europe, the U.S., Canada, Japan, Australia and so forth. Currently, CEN (European Committee for Standardization) published EN 14383-1: 2006 and other European Pre-standards for CPTED system. There are also many hardware standards, such as EN (European Union), ASTM & UL (U.S.), BS (Britain), NEN (Holland), DIN (German), AS/NZS (Australia and New Zealand) and so on all over the world. KATS just initiated hardware standardization in May 2010. The certification system for CPTED planning/design and product are active in more and more countries, such as the UK SBD, the Dutch PLSH, the CP Mark in Japan, etc.

CPTED Training

In addition, it was required to train and educate Police Crime Prevention Officers to learn CPTED in order for them to advise local authorities, developers, planners and designers. Therefore, KNPA opened a CPTED expert training course (used to be a one week program, now two weeks) at a national police training center in Asan-City. All the other police educational institutions now have to include a CPTED subject for every core training course which appears to assist police with implementation of the CPTED model at a local level. It was however indicated by many interviewed police officers that the police CPTED programs, particularly textbooks are not neither systematic nor sufficient in terms of contents and there are not many qualified trainers. This means the need for significant improvement.

Korea CPTED Association (KCA) KCA was officially launched on the 18th of March 2010. It is expected that regulations, systems, public polices and science & technology regarding CPTED will develop more swiftly due to the launch of KCA in Korea. KCA aims to promote CPTED/DOC principles and guidelines through academic and practical research & development, training, consultancy, the certification of CPTED-related professionals, products and system, international cooperation and so forth within the scope of KCA business. is also planning to launch a CPTED training course for CPTED-related government officers, police officers, landscape designers, architects, students, private security companies. On the other hand, KATS just started developing training system – composed of syllabuses, curriculum, textbooks, qualification certificate - as a part of conformity assessment system (e.g. training CPTED auditors and inspectors for the purpose of certification). The training program is under development by the Institute of Crime Science in

Yongin University. Thus it is estimated that more and more certified CPTED practitioners and professionals will be provided for safer communities in the future in Korea.

Public CCTV Initiatives

The first CPTED step was taken by the Kangnam Police Station. As part of the Seoul Metropolitan Police Agency (hereafter SMPA), they launched a CCTV Crime Prevention Program in the Kangnam local community whilst under close scrutiny from Government Agencies' and industry investment groups interested in the CPTED concept. It followed that electronic crime deterrence through CCTV surveillance became a popular countermeasure against serious criminal offences (serial murders, child abduction and sexual attacks) which had increasingly been taking place in a number of large cities and towns rendering local Police forces helpless. Combined with the influence of media At the time (2002 ~ 2004 and even currently) criminal psychology and profiling became one of the most popular subjects for many college students, TV news and radios because people were curious and interested in why and how the offenders (including YC Yoo, the killer of 21 people) committed serial killing and rapes and also how the police can catch them as quickly as possible to stop their further offences.,the terrified local residents of the victimized communities demanded the police solve these serious crimes in a speedy and effective manner.

Given residents' insistence and strong support and despite a privacy and data protection controversy, Kangnam District Council, a typically affluent community in Seoul, finally installed an on-street CCTV system (5 cameras initially in 2003 and then increased up to about 600 in March 2010). This incited neighboring districts, other regions and finally almost all the local authorities in Korea to follow suit. Importantly, the 'displacement' of crime was one of the main causes of the rapid CCTV spread as the neighboring communities were afraid of the criminals' migrating into their 'soft' area thereby prompting them to install their own CCTV systems. Current there are 59,000 cameras, which accounts for 25 percent of the total number (about 240,000) of public CCTV cameras in South Korea.

The local election of city mayors was another propellant as 'safer community programs' became one of the main public pledges for a significant amount of candidates. Currently, more and more local authorities in partnership with local police are setting up CCTV systems for reducing crime and fear of

crime. Interestingly, there are numerous examples of ‘one-upmanship’ where respective mayors appear to be competing with each other for better practices and technology to impress their electorates. One district council in Incheon City even invested in a scientific research study with an academic institution to develop the best practice for establishing a CCTV system. However, the cases of scientific studies on the impact of CCTV are scarce. Only one study which had a quasi-experimental design (a before/after test and a control/experimental area) was carried out in Bucheon City (Lee and Park, 2007). The research report showed 38% reduction of the victimization experiences of domestic burglary, 65% drop of robbery through house-break, 47% drop of street thefts and 53% of street robbery in the experimental area (through significance tests, $p < .01$). In the control area, there were also reductions of the four types of criminal victimization experiences though not as much as in the experimental area, indicating the diffusion of benefits. No obvious signs of the displacement of crime were found so far. The study also found that the concern of the intrusion of privacy significantly decreased in both areas and the support for CCTV increased (7%) in the experimental area. The researchers used only victim survey data instead of police crime data in this case study. More scientific evaluations - Over Level 2 of MSMS (Maryland Scientific Methods Scale MSMS Level 2 is a measure of crime before and after the program, with no comparable control condition. Measures of crime before and after the program in experimental and comparable control conditions are Level 3.) - are necessary to implement cost-effective and sustainable CCTV projects in Korea.

Street Lighting Program

Extending the discussion of CCTV, street lighting is crucial for a successful use of CCTV after dark. White Street Light initiative was started by Incheon-City Council in 2006 and since then by many other cities to make street brighter and safer. Due to the government green energy policy, the white street lights such as electrodeless induction lamps and LED (light Emitting Diode) lamps, have been replacing orange-collar sodium lamps across the country. However, the white light program initially began as a CPTED program and developed to help CCTV to watch streets better because sodium lamps were not good enough to use CCTV cameras at dark night.

In addition, eighty blue-color lamps were installed in Kangnam District as a pilot CPTED program. Since then some other cities (e.g. Kangwon-Do County, Yongin-City) follow the CPTED program. Although there is no sufficient scien-

tific evidence, blue outdoor lamp Blue Light to Drive The Addicts Away The Argus February 18, 1999 Url last accessed May 6, 2006 (www.theargus.co.uk) is believed to reduce crime on the street and the same program was already implemented in Glasgow, Scotland and several local areas in Japan. A controversy over the effect of crime reduction means that it has to be verified through rigorous scientific research studies.

Multi-Agency Partnership Protocols

In 2006 Cheonan-City and Asan-City made a multi-lateral MOU (memorandum of understanding) together with the counterpart Police Stations in order to build and operate Integrated CCTV Center. There were a lot of controversies and resistance from the city councils and the police because of bureaucracy and sovereignty in each public authority. However a series of discussion and negotiations coupled with the good will of some leaders in the project made it possible in the end. They could save multi-million US dollars worth of public budget by merging the center instead of having two different center buildings individually. Since then there were more and more cases of multi-agency CPTED or CCTV partnership protocols across Korea. Asan Police and Asan City in Chungnam Province made a CPTED protocol for partnership cooperation in 2010. Some other local police agencies are joining the trend according to the recent media output.

CHALLENGES AND THE WAY FORWARD

Although CPTED has been attracting a growing interest for Police Forces, the government, local authorities and citizens in South Korea, there are still many challenges to be addressed requiring a concerted and systematic effort from all stakeholders to achieve long term, sustainable outcomes.

A major challenge is the overall passive (or sometimes negative) attitude of the public planners designers and local authorities who have an extremely limited knowledge and/or understanding of crime prevention mechanisms especially primary prevention. Foremost, however, is the limited understanding of the CPTED program's holistic, short and long term benefits regarding community safety and it's tangible, economic advantages. This is undoubtedly the biggest challenge. Without a clear understanding of these benefits and advantages, potential stakeholders will tend to perceive that CPTED is not their

business because crime prevention is supposed to be police ‘business’. In the context, the Citizen Life Safety Bill is the most important legislation for CPTED in Korea. But it was found from some interviews with government officials that MPs and MOPAS, the relevant government department are not active in including ‘crime’ the specific term and definition into the Bill. If the Bill does not specifically stipulate the term, the new legislation will not be able to promote CPTED growth substantially in the sphere of the improvement of CPTED-related guidelines, ordinances, public policies, standardization, training system and so forth. Therefore it may be highly crucial that stakeholders like the police have to make more efforts in persuading MOPAS and MPs, not for themselves but for the security of people.

The Korean police can also consider the European steps, such as the UK and Dutch CPTED certification and licensing for new developments and products in the direction of marketing crime prevention as a profitable option for the relevant industries. The standardization and certification of CPTED as an on-going process and system will be a crucial stepping stone to make it realized. The English CPTED expert, Bollen from ACPO, CPI explained how their CPTED certification program, Secured by Design had been successful:

Secured by Design has been the most successful crime prevention project ever in the UK. It has the longest ‘shelf life’ –20 years - and has made government rethink its own strategies for reducing crime. Whether this project is transferable to your country I don’t know for certain, but I cannot see any reason why it should not be. And if you are anything like our neighbouring country, the Netherlands, you may even do it better than us!

Undoubtedly crime prevention is not just about policing the streets and it’s not something that should only be done by the police. Bollen emphasized the importance of partnership work for CPTED in the name of ‘Secured by Design’ within the following context:

Secured by Design brings in many partners to help reduce crime, including builders, surveyors, architects, local authority housing managers, lighting engineers, highway engineers, door and window manufacturers, lock makers, glass makers and manufacturers of countless other products used in buildings. Interestingly all of these people would be working anyway, regardless of Secured by Design, but Secured by Design ensures that all of these people are working towards the common goal of less crime.

The second one concerns the ‘open society’ and new urbanism which is also related to the political problem. This is about whether the main focus should be on gated and guarded communities and their equivalent in larger high-rises –or whether the main focus should be on keeping the built environment as open and accessible as possible (Bo Grönlund 2000). In the latter case, physical barriers and formalized surveillance should be reduced to the necessary minimum. Politically, accessibility of the disabled in the name of a barrier-free design is also adding a burden to the existing pressure. With an open society approach, crime prevention can never be seen as something absolute as stopping all crime is impossible. Instead, crime prevention in this perspective has the aim to reduce crime to a certain degree, particularly situationally conditioned crime. The prevention of actual crime and the statistically measurable risks of crime should be differentiated from increasing the perceptions of safety because in reality, there is often a large disparity between experienced or imagined safety on the one hand, and the actual safety on the other.

The third challenge is scientific problems for research. Although the spatial and environmental mapping and geographical analysis techniques of crime have been rapidly developing, the clear spatial analyses of social differences is often difficult and the availability of social data in micro units are also often limited. The inexact crime data, especially the precise location of the crime, the low frequency of some important crime types and the non-digital form of crime and location data still demand a lot of additional manual research work despite computerized GIS crime mapping database systems through CIMS (similar to Compstat) in KNPA.

Seeing CPTED guidelines and approaches as a totally completed ‘product’ is also another significant challenge. After the countrywide introduction and employment of CPTED, the design-out-crime strategy will undoubtedly be successful and effective (or even cost-effective), but after some years the effect may begin to fade because of the fact that perceptions, modus operandi of offenders and the patterns of crime are likely to alter. Furthermore, the changes in architecture, building and planning are also likely to influence the CPTED effect. Consequently, a CPTED initiative could follow a normal life cycle like every product (Berry and Carter, 1992). Sustainability of positive CPTED effects is thus one core issue. We may reform and innovate the CPTED strategies to make it an on-going process of reaching specific objectives in concrete situations involving all the stages of the development.

People are more and more reliant on CCTV cameras for tackling crime in Korea. It seems, however, more cautious considerations should be addressed when we plan CCTV cameras installations, particularly when the presence of on-street cameras may increase the extent of unnecessary fear and do not impact much on crime issues. The European experts, Bollen and Johnston showed a warning sign, offering the following:

CCTV camera might be sometimes perceived as a sign of CPTED failure in the UK. You should not simply expect that more cameras will cut down criminal incidents and solve any kinds of problems. More importantly, it is not very cost-effective. A number of CCTV studies showed that CCTV is not as impressive as originally expected in preventing crime and disorder. Often you install cameras in a place where there is plenty of natural surveillance around.

The issue of ‘gated’ communities is also critical. Particularly in metropolitan cities we have more and more tower block-style (50~70 stories) luxury apartment complexes and wealthy suburban gated community houses. Most of the gated communities have heavy security – but not armed - for a certain homogeneous social class and this may inevitably exclude other groups and weaken the informal social control by the lack of solidarity within the community. An interviewed Dutch CPTED expert stressed the importance of social integration in urban planning as per the following:

In the Netherland, the regulation banned the ‘gated community’-style housing development and so you have to mix a variety of ethnic groups, socio-economic groups, different age groups when you plan a housing development in a local community. The mixed use and layout through the integrated approach are able to prevent social segregation and therefore reduce the community problems such as crime.

Finally, fear of crime and feelings of insecurity may need more attention than criminal incidents per se. Frightening or fearful places are not necessarily places where actual crimes occur. Nonetheless, fear influences the way people behave with regard to public places in a far more negative way than the actual level of victimization risk suggests in the actual place. Therefore, it would be crucial that urban planners and designers also focus on addressing feelings of insecurity in addition to crime reduction.

CONCLUSION

Just as described so far, the Korean interpretation of CPTED is worked out in such a way that liveable (convenient, walkable and attractive) and humane city is not in conflict with the values of safety and security. Even though the Korean CPTED approach may appear slightly more expensive than existing urban design and architectural approaches etc., South Korea will endeavour to consolidate these two objectives (liveable/human and safe/secure) even if, at this stage, the scientific evidence is not sufficient to satisfy all the stakeholders.

Given this challenge, it is critical to conduct further scientific experiments and action research to clearly validate the efficacy of the CPTED approach to satisfy all stakeholders. Not only in terms of crime/fear prevention, but importantly, in terms of cost versus benefits on both the short and long term.

"Realistic evaluation" approaches developed by Pawson and Tilley (1997) indicate that evaluations of crime prevention measures have been characterized by an almost frantic search for what "works". This proliferation of research has examined all aspects of crime prevention, particularly measures such as closed circuit television (CCTV), electronic article surveillance (EAS) and Neighbourhood Watches (Gill and Turbin, 1999, p. 179). Over the last few years, there have been growing calls for a change in the way evaluations are conducted (Ekblom and Pease, 1995; Tilley, 1993). Often these studies produce conflicting results, one concluding that a particular crime prevention measure may have an effect, with another claiming it may not. In the context, Pawson and Tilley (1994, 1997) have developed a "realistic evaluation" which differs from previous evaluations by stressing the need to evaluate crime prevention measures within their "context" and to ask what "mechanisms" are at work to produce which "outcomes." Thus we should learn from even failed CPTED programs as an outcome by studying why they failed and how we could succeed, rather than merely criticizing the results of a particular CPTED program, or worse, give up.

However, just as the 2nd Generation CPTED stresses, CPTED studies and tests in Korea should be able to give optimal answers to actively inspire informal social control and community solidarity over crime and anti-social behaviour by community residents through the intelligent and wise employment of CPTED principles. Ultimately, CPTED should adopt the approach that facilitates the community in general to intervene in anti-social behaviour when needed and to

be cautious and vigilant in terms of personal safety in a spatially and temporally manner. It is suggested that a sustainable community with intelligent growth strategies can flourish with this method. Therefore, the stakeholders in the design and planning domain should attempt to become more socially responsible for and responsive to security and safety issues recognizing it as being pivotal aspects of urban life.

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