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Car Park Crime and Security in South Korea:

A Case Study of Seoul Apartment Complexes

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The researcher looks at high-rise apartment car parks in the Seoul metropolitan area of South Korea with respect to physical security and design features. This paper employs CPTED originated from the Newman's 'Defensible Space' theory and some situational crime prevention techniques to find the actual picture of crime risk and physical security features in the car parks based upon site-specific surveys. The data illustrates quite a few detailed findings, including: it seems that the bigger the size of complex is, the higher the crime rate is; it was found from the site visits that while escape routes for offenders were found to be ineffective, suitable targets and capable guardians found effective. Nearly the half of whole households in Korea is high-rise apartments and most of their car parks are secured by elderly guards rather than security professionals or electro-mechanical security system. It might therefore be urgent that the quality of security should be improved for the high-rises. Recently introduced integrated security system (a.k.a. TAS) by several Korean security companies is considered to be the appropriate step dealing with the car park crime problems.

Introduction

Criminal justice researchers and practitioners recently began to shift their interest from people to places – from people who commit offences to specific places where offences occur (Weisburd, 1997). Most crime seems to be highly concentrated in a relatively small number of locations. The examples of locations include a block of flat or an estate car park. Particularly car parks have not frequently been examined site-specifically in terms of crime and security. Clearly, car parks can be the location for a large proportion of crime, particularly car crime. Therefore, car parks can also be very beneficial from the crime prevention points of view (Webb *et al.*, 1992).

A recent study by “What Car? (1999)” questions the effectiveness of this new security. It found that 87% of 77 new car models tested had inadequate perimeter security to pass the two-minute ‘attack’ test recommended by Home Office guidelines. In addition, 32%

could be driven away within a further five minutes by the would-be thief (Sallybanks and Brown, 1999). It therefore seems that vehicle security cannot wholly impede entry to a car. It might be realistic that the starting point for preventing car crime should not be the vehicle security but the car park security for protecting cars themselves. Since most crimes in parking facilities seem to involve the vehicles themselves, most research on car parks and crime has concerned vehicle crime. In the context, this car park crime study covers various types of personal attack, such as murder, rape, aggravated assault or robbery, let alone vehicle crime. Although a large proportion of research findings suggest that car park crime is a multi-faceted problem requiring a wide range of preventive measures, this study focused mainly on situational measures.

While most of the research studies which have examined car crime in public car parks have been evaluations of initiatives to reduce crime in particular locations, this study is to examine the crime risk and its proper countermeasures for the crime problem associated with the car parks of high-rise apartment complexes in South Korea as a particular place. The researcher looks at high-rise apartment car parks particularly in the Seoul metropolitan area of South Korea with respect to physical security and design features. This paper employs CPTED originated from the Newman's 'Defensible Space' theory and some situational crime prevention techniques to find the actual picture of crime risk and physical security features in the car parks based upon site-specific surveys.

Research Methodology

The initial research interest was attracted by a series of media reports about serious car park crimes happening in urban apartment complexes in newly developed suburban cities of the Seoul metropolitan area and criticisms of poor crime prevention measures which were taken by people concerned. Personal victimisation experiences and fear in car parks were also often heard from quite a few acquaintances (of the researcher's) living in apartment complexes in the area. Through a study of media reports, it was found that apartment car park crime was not restricted in the Seoul capital region, but was relevant to many other urban residential areas in the whole South Korea.

A cross-section of six apartment complexes was taken as the survey sample including their open car parks and underground ones. A high-rise apartment complex area was chosen as a certain place and their car parks were selected to specify the research in

terms of crime and place. Initially, the selected area was Bundang-Gu¹ of Seongnam City, one of the satellite cities of Seoul. Bundang-Gu is characterized as a modern new town of Seongnam City (one of 17 satellite cities of Seoul) in Kyunggi-Do² developed within 5 years in early 1990s. Bundang is supposed to be an upper middle class area in terms of socio-economic classification. There are a great number of large size flats and households with two cars in Bundang. It is also estimated from their affluence level that the employment of Bundang residents are relatively high when compared with other suburban areas. Bundang-Gu's population is about 400,000 in December 2001. The total number of households is 129,105, which is composed of 88.8% of high-rise apartment units and 11.2% of low-rise units or houses. The percentage of Bundang-Gu high-rise units is slightly higher than that of the Seoul metropolitan area³. However from the chosen Gu, two Dongs⁴ with relatively high crime rates were selected for the study's purpose and convenience. The two Dongs are IM-Dong and SH-Dong. From the two selected Dongs, six apartment complexes were then chosen for the car park security study. The criteria for choosing the six complexes from the two Dongs were the Bundang police officers' professional but subjective opinions of each apartment complex's car park crime level. Finally, twelve apartment car parks were selected from the chosen six complexes, individually two car parks each. The chosen two car parks from each complex were one open car park and one underground car park. It was not simple to count the number of open car parks for each complex because the parking spaces of open car parks were distributed between and behind blocks. Therefore the researcher treated a large number of the surface parking spaces within one complex boundary as a sample of one open car park. The number of underground garages ranged between 2-6 for IM-Dong and 6-9 for SH-Dong. Although there were thus more than two underground car parks for each selected complex, the design feature of the underground garages in the same complex boundary was fairly alike. One of the garages in each complex was randomly chosen as a sample of underground car park. Thus the researcher gained a sample of twelve apartment car parks from six apartment complexes which were selected from IM-Dong and SH-Dong in Bundang-Gu, Seongnam-City (Si) of the Seoul metropolitan area. Thus the chosen two Dongs came to have three crime risk-based groups. The reason of the crime risk-based sample selection was to find an answer to the question, 'whether or not there is a significant difference among the

¹ "Gu" is the name for the largest administrative area in a city, similar to a ward

² A "Do" often includes several cities, either small or large, and is similar to or larger than a county of England & Wales.

³ Seoul and 17 satellite cities

⁴ "Dong" is the name for the second largest administrative area in a city, similar to a town

purposively selected car parks in their car park crime rates or physical security level'. Thus the chosen two Dongs have three crime risk-based complexes per each and therefore three crime risk complex groups as Table 1 and Figure 1 illustrate.

Table 1 Selected sample apartment complexes according to police officers' rating

Dong	Apartment Complex	Police officers' rating
IM-Dong	IM-H	High risk
	IM-M	Medium risk
	IM-L	Low risk
SH-Dong	SH-H	High risk
	SH-M	Medium risk
	SH-L	Low risk

Figure 1 Three crime risk-based groups

High-Risk Group (IM-H & SH-H)	Medium-Risk Group (IM-M & SH-M)	Low-Risk Group (IM-L & SH-L)
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The chosen twelve apartment car parks were, then, rated according to the details of four main security categories, which are formal surveillance, access control, natural surveillance and surveillance by employee, through site survey. Each factor of the four categories had a certain score point for each apartment car park to be rated according to their security level to gain a maximum score, 100 points. The rating exercise conducted was blind to the crime rate of the specific car parks lest it should be influenced by the crime rate. The rating variables were largely quantitative and objective to ensure the objectivity of the site observational survey and the security assessment.

The researcher carried out the site survey taking photographs of each car park. An illumination metre was used to check the illumination level of all the underground garages. A number of unstructured interviews were also carried out with police officers, apartment managers and security guards to enrich the information gained from the site survey. A resident survey (n = 210) was also carried out later to find the extent of their car ownership, affluence and car parking patterns. However, it will be excluded in detail in this paper.

Police Crime Analysis

The police crime data produced a variety of basic official data sources, such as the major crime trend, Bundang-Gu crime data, apartment car park crime data and the extent of resident victimization. With regard to the apartment car park crime in Bundang-Gu, the data analysis enabled the researcher to gain some significant statistics. The relevant details are described as follows.

By type of offence

Table 2 shows the crime committed in the apartment car parks in Bundang-Gu. Unsurprisingly the major crime was vehicle-related crime, which occupies 82%. Most of the crimes committed at the specific place were opportunistic offences rather than impulsive ones except a few premeditated violent attacks. The majority of the opportunistic offences have been found to involve three factors of Cohen and Felson (1998)'s 'Routine Activity Theory'⁵.

Table 2 Apartment car park crimes: by type of offence (Bundang-Gu, January 1998 – June 2002)

Offence	No of Incidents	Percentage
Vehicle theft	112	31%
Theft from vehicle	171	46%
Theft	12	3%
Criminal damage	18	5%
Robbery	6	2%
Sexual assault (e.g. rape)	4	1%
Violence (including GBH, ABH)	36	10%
Others (arson, snatching, abduction, etc)	7	2%
Total	368	100%

Source: Compiled from the crime data of Bundang Police

By parking structure

There were nearly twice more thefts from vehicles in the underground ones than in the open ones (see Table 3). That is clearly because stealing property like car audios from vehicles takes longer time than stealing vehicle itself and also because underground

⁵ Routine Activity Theory states that when a crime occurs, three things happen at the same time and in the same space: suitable target is available; there is the lack of a suitable guardian to prevent the crime from happening; a likely and motivated offender is present.

ones have relatively much less surveillance than open ones. However, no significant difference in crime risk was found between them, revealing 54% for the underground ones and 46% for the open ones. It explains that open car parks could be as vulnerable as underground ones despite of open ones' (usually) better natural surveillance design as long as they are not sufficient in other security requirements, such as guards, CCTV surveillance or access control.

Table 3 By offence and parking structure (Bundang-Gu, January 1998-June 2002)

Offence	Parking structure			
	Open car parks		Underground car parks	
Vehicle theft	70	35%	42	25%
Theft from vehicle	65	33%	106	63%
Theft	6	3%	6	4%
Criminal damage	12	6%	6	4%
Robbery	5	3%	1	1%
Sexual assault (e.g. rape)	3	2%	1	1%
Violence (including GBH, ABH)	33	17%	3	2%
Others (arson, snatching, etc)	5	3%	4	1%
Total	199 (54%)	100%	169 (46%)	100%

Serious crimes in apartment car parks

Serious crimes have been taking place in those car parks in Bundang-Gu, which was a great concern of the local police. It was uncovered that out of 19 serious opportunistic crimes committed at seven Dongs, robbery (n=9) and snatch theft (n=4) were major crimes, followed by sexual infamies (n=3). Rape, extortion by threats, vehicle arson, wounding violence and abduction/robbery happened once individually. Serious crime happened centering around certain Dongs. IM-Dong and SH-Dong were vulnerable to serious crime as much as to property crime, appearing to be 'hotspots' of apartment car park crime as nine out of the 19 serious incidents took place at the two sample Dongs.

The 19 serious crimes took place regardless of time, uncovering eleven incidents at night (between 20:00 – 05:00) and eight in daylight (morning and in the afternoon). It was found from interviews with the apartment security guards that at night-time they focus on public area, such as car parks, playgrounds and communal gardens to prevent car crime or physical assaults and during daylight patrol mainly stairwells, hallways and entries to rooftop inside blocks to prevent domestic burglary of unoccupied flats. Therefore car parks, particularly underground ones have been frequently out of guards' patrol activities in daylight, which might have caused absence of capable guardian to prevent those serious crimes at the time of a day.

Whereas it was revealed in the Bundang-Gu crime analysis, the majority (80.4%) of the car park crimes were committed at night rather than in daylight, nearly a half of the serious crimes also took place in daylight. Thus, day time might be as important as night time to reduce car park crime in Korean apartment car parks. Although both open ones and underground ones were similarly vulnerable to serious crimes, it appears that abduction/robbery and wounding violence tend to be committed in underground ones. It might be because underground ones are less exposed to people than open ones for successful commitment.

Site-Specific Survey

A detailed form was made up for the site survey of the underground car parks and the open ones as can be seen in below (a form for an underground car park). All the items which are mainly objective in the survey were scored for specific ratings. However, the idea about relative importance of each security factor was gained from mainly the rating methods of the British SCP Criteria (see Appendix) approved by ACPO in February 1992. Later the SCP criteria and rating method changed into awarding system with 'gold' or silver' status, to indicate degrees of conformance to a standard, but now, under the revised scheme, there is just one Secured Car Parks Award. The criteria for relative importance were also based on Poyner and Webb (1993)'s findings from their study "What Works in Crime Prevention: An Overview of Evaluations". For an underground car park, there was no particular need to differentiate the maximum points among the four factors including formal surveillance, CCTV surveillance, natural surveillance and access control. Formal surveillance and natural surveillance was given much more weight for an open car park because of its design feature.

- **Formal Surveillance - Maximum points (30)**
 - Member of staff contactable
 - Effective security patrols (unscheduled)
 - Link system with the police (e.g. radio link)
 - Security staff training (frequency and practicality)
 - Average age of security staff
 - Number of security guards per 100 parking spaces

- **CCTV Surveillance by Employee - Maximum points (25)**
 - CCTV system functions (e.g. P/T/Z, colour)
 - Constant monitoring
 - Illumination requirement for CCTV
 - Cameras in lifts/stairwells to get access to the garage
 - Number of camera per 100 parking spaces (Minimised blind spots)

- **Natural Surveillance (Maximum 20 points)**

- Lighting**

- Section 6 of the *Enforcement Regulation of Car Park Act* (70 lux)

- Vandal resistant light fittings

- Parking Areas**

- Minimised number of support pillars for visibility

- Parking in straight rows for easy surveillance

- Painting or staining of concrete

- Lifts and Stairwells**

- Entrances have good natural surveillance

- Minimised nooks and blind spots for stairwells

- Low level (1 metre) planting near paths

- **Access Control/Others - Maximum points (25)**

- Vehicle/Entry/Exit**

- Lockable entrances (height barriers or shutters)

- Keeping vehicular entrances/stairwells locked late at night

- Rough surfaces/access ramps

- Parking Areas**

- Intercom or panic alarm button installed on the site

- Sufficient signs of levels and security warning

- Maintenance of clean milieu (disposal of graffiti/garbage)

The researcher walked the sample sites, looking around and examining the overall landscape as well as lighting, facilities, signs, graffiti, CCTV equipment and so forth before the visit of the management offices to obtain the apartment managers' consent to the specific site survey in their complexes.

A number of digital photographs were taken during the site visits and an illumination metre was utilized to check the illumination level. The illumination of each underground garage was measured to see ⁶horizontal illuminance as well as vertical illuminance at the height of 85 centimetres (34 inches) above floor level according to the *Enforcement Regulation of the Car Park Act 1990*.

Design and Management Characteristics

Common characters

⁶ Industry Standards for Lighting Levels recommended by Parking Consultants Council of National Parking Association (NPA) and IESNA (Illumination Engineers Society of North America) in: Smith, M. S. (1996) *Crime Prevention Through Environmental Design in Parking Facilities: Research in Brief*, US National Institute of Justice

A number of common design features were found through the site survey between the complexes in their car parks as follows:

- the six complexes are large scale developments composed of at least ten blocks (upto twenty nine). There are, however, no walls or fences between blocks so that the residents can interact and socialize one another within their complexes;
- the number of floors for the blocks varies between five and twenty-five floors;
- all the complexes have open car parks as well as underground ones;
- all the complexes have CCTV systems, including cameras, monitors and video recorders for their underground garages under the *Enforcement Regulation of the Car Park Act 1990*;
- all the complexes have their own management offices which deal with maintenance and administrative management of facilities, security, cleaning, gardening and so forth within their complexes under relevant regulations;
- all the complexes employed security guards for preventing crime and disorder within their complexes under the section 3 of *Presidential decree on Multi-dwelling Units Management 1999*.

Individual characters

Individual characters of the six complexes are illustrated in Table 4. The number of parking spaces for the six complexes varied between 805 and 1,658. While the number of open ones' parking spaces was between 354 and 757, those of underground ones' were between 428 and 1,091. Thus, the underground ones generally have more parking spaces than the open ones. Although the number of underground garages varied depending on the scale of complex, ranging between two and nine, the security and design feature of garages were similar in a complex. With regard to the number of cars owned, 53.8% of the respondents owned one car for their families. The households with two cars accounted for 39.5%. Only 10 respondents (4.8%) had no car. In contrast, according to KIC's International Crime Victimization Survey 2000 (KIC, 2000), 34.1% of 2,043 representative respondents in the whole Korea did not own a car and only 10.8% of families owned 2 cars. Thus, although the Bundang residents survey lacked

teenager respondents, it appears that the respondents of Bundang-Gu survey are relatively wealthier than the national average (those of ICVS 2000) in terms of car ownership.

Table 4 Details of the six apartment complexes and their car parks

A	NB	No of levels	No of spaces	No of UCP	NoH	NoG	NoC ⁷	Access control
IM-H	13	13-25	1,019 UCP - 661 OCP - 358	5	710	40	5	UCP o OCP x
IM-M	16	10-22	1,169 UCP - 699 OCP - 470	6	876	31	6	UCP x OCP x
IM-L	10	10-25	810 UCP - 456 OCP - 354	2	572	22	3	UCP x OCP x
SH-H	26	10-25	1,658 UCP - 1,091 OCP - 567	9	1,934	44	9	UCP x OCP x
SH-M	29	5-30	1,518 UCP - 761 OCP - 757	7	1,695	57	12	UCP o OCP x
SH-L	15	5-19	805 UCP - 428 OCP - 397	6	648	27	29	UCP o OCP x

Key:

- A - name of apartment complex
- NB - number of blocks
- No of spaces - number of parking spaces
- No of UCP – number of underground car park
- NoH - number of households
- NoG - number of security guards
- NoC - number of CCTV cameras
- Access control - access control for main entrance
- UCP - underground car park
- OCP - open car park

As can be seen in Table 5, it appears that the bigger the size of complex is, the higher the crime rate is. The lower the number of floors, blocks or underground garages' parking spaces was, the less the complexes were to be victimized by car park crimes. The higher the number of households was, the worse the crime problem was likely to be. It was the case particularly with SH-Dong. Those findings have a considerable

⁷ It was found from a follow-up interview with apartment managers that the number of CCTV cameras was increased 5 to 10 in IM-H and 12 to 24 in SH-M in early 2004. It seems to indicate that the managers and the residents were becoming more concerned about security of underground car parks. It may also mean that the car park crime problem has not abated.

consistency with one of Newman (1996)'s findings that regardless of type of building, its households tend to be victimized more often in a large size of housing complex than a small size one.

Table 5 Number of incidents and crime rate for each apartment complex

Apartment complex	Number of victims (NV)	Number of households (NH)	Crime rate (NV/NH*100)
IM-H	18	710	2.5
IM-M	13	876	1.5
IM-L	0	572	0.0
SH-H	17	1,934	0.9
SH-M	7	1,695	0.4
SH-L	2	648	0.3

Source: Police crime data analysis

Security Rating

Through the site survey, the security levels of each complex' car parks were rated (see Table 6 and 7). By design type, the security levels of underground garages and open car parks were respectively rated depending on the accumulated scores gained from the survey.

The total mean of underground ones (55.7) were lower than that of open ones (61.5). It means that underground ones were relatively more vulnerable to crime than open ones. However, the total mean of 61.5 for open car parks was still not high enough to be secure. It suggests that there was still room for improvement of security in both of them. Weaknesses and vulnerabilities of detailed security items will be described in the next section.

Table 6 Scores of the four security factors for the underground garages of the six complexes

Car park	Formal surveillance	Employee surveillance	Natural surveillance	Access control	Total
IM-H	19	3	9	14	45
IM-M	18	5	9	12	44
IM-L	17	8	15	12	52
SH-H	14	3	13	6	36
SH-M	25	19	14	16	74
SH-L	25	20	20	18	83
Mean	19.7	9.7	13.3	13.0	55.7

Note: The maximum scores were 30 (formal surveillance), 25 (employee surveillance), 20 (natural surveillance) and 25 (access control).

Table 7 Scores of the four factors for the open car parks of the six complexes

Car park	Formal surveillance	Employee surveillance	Natural surveillance	Access control	Total
IM-H	28	0	26	4	58
IM-M	24	0	28	6	58
IM-L	23	0	34	9	66
SH-H	24	0	24	5	53
SH-M	29	0	30	7	66
SH-L	24	0	34	10	68
Mean	25.3	0.0	29.3	6.8	61.5

Note: The maximum scores were 40 (formal surveillance), 10 (employee surveillance), 40 (natural surveillance) and 10 (access control).

Qualitative Analysis of the Site Survey Results

Factors affecting crime risk

Some other factors, which were considered crucial, were explored during the site survey whether they influenced crime risk in the apartment car parks. They are escape routes for criminals and two key elements of routine activity theory, such as suitable targets and capable guardians. Escape routes for criminals was taken into account as one of the key factors for successful offences. It was found that almost all the apartment complexes in the study have more than two entrances and exits without access control. Once offenders get out of the entrances, they can run or drive away through motorways nearby. Bundang's roads and streets were well organized and maintained, and as a result stretched in all directions. There were a number of motorways around the area for offenders to get an easy access with their cars. It was therefore measured that this could not make an appropriate variable affecting the level of risk in the car parks for the study. The factor was thus excluded from the study.

However, the two elements of routine activity theory were necessary to employ as crucial variables associated with crime risk. With reference to availability of suitable targets, first, it was found that there were a large number of luxury cars, either domestic or imported, in the car parks because the majority of apartment residents in Bundang-Gu are relatively affluent in South Korea. Most of the cars contain costly car audio sets, occasionally golf clubs, laptop computers, mobile phones and even bags with credit cards or cash of some incautious drivers. The kinds of articles were frequently found in the police crime data and also some of them inside the vehicles were virtually conspicuous to the researcher during the site survey. It was believed that they could

compose attractive targets for property crime, such as theft and vandalism. Regarding targets for personal crime, it appears to be natural that offenders might take advantage of the frequent situational opportunities when there is only one resident parker in the underground garages with poor surveillance. During the visual survey, it was assumed that a great number of cars and parkers could get easily victimized, while neither watched by guards nor monitored by CCTV.

Common Problems and Weaknesses

(a) Formal surveillance: by guards

Most of the security guards who were observed looked aged and the majority of them did not appear physically fit enough to work for a security job. Except SH-M with 761 underground parking spaces no on-site guards were employed in the underground garages which had been vulnerable to crime. Even SH-M underground garages did not have enough on-site guards because only six guards were working for seven underground garages in two shifts (a twelve-hour shift). Moreover, it was found that the guards were too busy doing additional routine businesses, such as garbage collection or gardening, to concentrate on crime prevention and deter criminals through active surveillance activities.

(b) Access control: by controlled entry

As a result, whenever gained access to the main entrances of the six complexes' in daylight, the researcher had never been stopped or questioned by any apartment guards at all. No particular security check, such as keys or cards, was required prior to entry. The researcher's presence in both open car parks and underground ones was not questioned to require justification, either. When considering that quite a few criminal incidents have happened in daylight, it might have been one of the main causes of victimization risk for the residents in the car parks. All the complexes have some stores and shops, such as grocery, barber's, private educational institutes, sports facilities, take-away eateries or butcher's for apartment residents' convenience within and around the complexes nearby. Therefore, each complex was normally designed to have a number of extra entries in addition to one or two main entrances for the resident to go to the shops and stores conveniently and quickly rather than to walk a long way round to use the main entrance. It might have made access control practically difficult for the security guards.

Moreover no lockable entrances were found in the six complexes, which might be significant for the security of open car parks. The entrances were always wide open for an easy access to visitors and residents despite of their seemingly private territoriality. Only some barricades were found but not utilized in daylight. Thus real barrier as Newman (1972) defined to compose territoriality was in fact seriously poor in those complexes.

(c)Employee surveillance: by CCTV

There was no single CCTV operator in complete charge of constant monitoring despite sufficient number of guards already available. The monitors for the underground ones were not watched continuously and the control rooms were located within the management offices (of SH-M) or security guard posts (of the other five) where the office staffs and guards can watch the screen while carrying out other businesses. However, it seemed that the monitors were mostly being rather neglected. There was no surveillance system for the pedestrian routes to any of the underground ones relying only on natural surveillance and guards' surveillance, which is inconstant and dead above the ears. No single surveillance camera was found in any of the open car parks which were spacious and had a number of blind spots and therefore had been vulnerable to crime.

(d)Natural surveillance: by environmental design

Deterrent plants like spiny or thorny types were not found in any of the apartment complexes. Landscaping of the complexes often appeared to hinder the opportunity for natural surveillance and designed to provide potential offenders with convenient hiding places.

(e)Others

Security devices, such as panic button, scream alarms⁸, emergency phone or intercom, were not found in any of the enclosed garages. It seemed that the guards or other residents can hardly hear any screaming sound when a criminal incident actually happened. It was confirmed by an interview with a guard that he could not hear any noisy sounds from the enclosed garages very well particularly during the day.

Individual Problems and Weaknesses

⁸ Voice-activated system filtering out general background noise

Although only a few problems were found in the low risk car parks, a number of weaknesses were revealed in the high-risk or medium-risk ones, particularly IM-H ones that had shown the highest crime risk. The details are demonstrated as follows.

(a) Formal surveillance: by security guards

Three types of guard posts locations were identified in the site survey. The first one is a guard post located in the open car parks and the second one is an in-built guard post built inside an apartment block usually near block entries. The third one is a post located near the main entrances of a complex. While IM-L guard posts were located only in the open car parks, IM-H ones were inside the blocks. Whereas SH-H ones were located at the main entrance of the complex as well as inside the blocks, those of IM-M, SH-M and SH-L were at the main entrances of complex and in their open car parks.

It appeared that the car parks with the guard posts inside block were more often victimized than the car parks with the guard posts in the open parking bay. It seems obvious that it is because the latter could get more effective surveillance than the former from the guards. The former usually orients access control for the blocks rather than surveillance of car parks.

(b) Access control: by controlled entry and exit

The entries of underground garages had not been locked leaving wide open 24 hours a day in IM-M, IM-L and SH-H, while those in the others had been kept locked late at night. There were two reasons for the management offices of IM-H, SH-M and SH-L to lock the garages at night. One was to prevent crime or disorder and the other was to save electricity through switching off lighting in there. In contrast, the managers of IM-M, IM-L and SH-H explained the reason of keeping their garages open 24 hours a day was that the residents did not agree with the idea due to inconvenience of traffic. It indicates that the residents regard convenience of use as more important than crime risk and security in their residential territory. With reference to open car parks, a significant CPTED risk was identified in IM-H. It was poorly designed for anybody to gain a simple and quick access to its open car parks - as well as underground ones - without being detected or stopped.

(c) Employee surveillance: by CCTV

Even though there were clear signs telling 'On CCTV recording' or 'Excellent Security Car Park' for the underground garages of IM-H, IM-M, IM-L and SH-H, in fact no single CCTV camera was found inside of those car parks which can accommodate 456

– 1,091 cars all at once. Cameras were installed only at the entrances of the garages. Even for the car parks with cameras, the number of cameras was too small to watch the whole inside of the car parks, to make quite a few blind spots.

(d) Natural surveillance: by environmental design

Poor CPTED design was significantly restraining natural surveillance in IM-H which included some parking spaces completely short of natural surveillance. Also incautious positioning of trees obscuring lighting illumination was found in IM-L car parks. Transparent canopies installed for the entries of garage stairwells were found in the three complexes of IM-Dong. Although the canopies were transparent to help natural surveillance, poorly maintained landscaping was obstructing it from the blocks as well as from the outside passers-by. However, those of IM-M could not be viewed from the guard posts, while those of IM-L could.

It was assessed that those identified problems and weaknesses could be tackled by either some slight change of environment or a large-scale refurbishment and repair. However, the cost-efficiency was the key issue to be addressed because the residents and the managers can accept any crime prevention measures only when the measures are practical enough to be employed in terms of financial cost.

Improvements and Recommendations

Police Crime Prevention Officers (PCPOs) in the survey area stressed in some interviews that even though they had carried out 24-hour patrols, whether they are by vehicles or on foot, frequent publicity campaigns through posters and leaflets with crime prevention tips to alert residents' precaution and also worked with several self-policing bodies, such as civilian vigilante groups and civilian crime informers groups⁹, the effect of those activities for practical crime reduction had been highly limited. It was pointed out by the officers that the main actors for the apartment security are therefore the people living in and working for the complexes rather than anybody else. It might be crucial that manned guarding, controlled access, CCTV surveillance and environmental

⁹ Civilian crime informers groups were initiated by the Bundang Police to encourage more citizens to stop being tolerant to crime and report to crime more actively to the police. There were about 217 civilian crime informers at ten Dongs whose business is to have alertness and vigilance against any criminal incidents, to report crime or criminals to the local police and also to provide the police with useful crime information. Thirty crime informers were working for the police at the two sample Dongs

design driven by the interested party should always come first for the car park security as self-policing or at least community policing¹⁰. In the context, the following recommended security approaches might be applicable to current apartment complexes already built as well as to new development plans because the ideas can cover the whole process of development from planning and building to subsequent maintenance.

For New Development or Refurbishment

There are currently over ten thousands of security officers¹¹, about 70% of whom are aged guards. Nearly a half of the whole residential households in South Korea are living in high-rise apartments and they are to be protected by security guards. It might therefore be urgent that the quality of private security staff should be improved for the apartment complexes. Recently introduced integrated security system (a.k.a. TAS¹²) by several Korean security companies (S1¹³, Caps¹⁴, SOK¹⁵ and KT telecop¹⁶) is considered to be one of the best steps dealing with the problem. The households with the system account for less than one per cent¹⁷ out of more than twelve million households in South Korea and so its service market potential is virtually prominent. The security manager of a TAS apartment complex in Yongin-City emphasized that the majority of apartment managers tend to try to cut the number of guards and so TAS apartments, which minimize the number of security staffs, are becoming popular.

Interior and exterior sensors linked to the security companies' control centre as well as the security control room located within a TAS complex detect any intrusion, gas leakage, or other emergency inside the residence on a 24-hour basis. All the entrances are secured and monitored by automatic entry barriers and CCTV cameras. Only the

¹⁰ Community policing is a new philosophy of policing, based on the concept that police officers and private citizens working together in creative ways can help solve contemporary community problems related to crime, fear of crime, social and physical disorder, and neighbourhood decay (Trojanovicz and Bucqueroux, 1990)

¹¹ bigger than the number of police officers (92,165 in 2003)

¹² Total Apartment Security

¹³ Homepage <http://www.s1.co.kr>

¹⁴ Homepage <http://www.caps.co.kr>. CAPS, a brand name synonymous with comprehensive security services, has been the domestic industry leader since its launch in 1984. And with Tyco's takeover in 1999, CAPS has been reborn as a world-class security provider with ADT's industry-leading technology and management expertise.

¹⁵ Homepage <http://www.sok.co.kr>

¹⁶ Homepage <http://www.telecop.or.kr>

¹⁷ Kim, E.P. (2001) Mael Business Newspaper, *Security Industry: Unmanned Guarding Service business competition Sharpened* [updated 13 September 2001], http://news.naver.com/news_read.php?oldid=20010913000031041 [accessed 2 September 2002]

residents with remote controllers authorized by the control centre can gain entry and any visitors and vehicles have to be checked up by security guards. Professionally competent security staffs¹⁸ in their twenties or thirties deal with any trouble happening in the complex boundary. The system furnishes multiple security services to an entire complex with even more than one thousand households. It covers the whole area of a complex including surface car parks, underground garages, playgrounds and communal parks. It enables easy operation and maintenance with a minimum cost. Moreover, the companies are gaining trust and confidence as the security companies marketing TAS have thoroughly insured against any personal or property damage from security failure, which is significantly different from usual apartment security companies that often lack insurance coverage.

There are recently construction firms that furnish their newly developed apartment complexes with TAS even gratis in a metropolitan area. All the households of the complexes have been provided TAS system and each of them have only to pay the monthly service fee, which is supposed to be reasonable.

A managing staff of S1¹⁹ Regional Headquarter explained:

A security company like S1 contract, in advance, security service including security equipments and facilities with construction firms. Then the security company furnishes new developments with the equipments. For example, all the apartment units worth a certain price for sale in lots would include the cost of TAS for each household and complex per se with no further extra cost. Therefore each household should bear a relatively small amount of the TAS expenses in common, which is far smaller than the expenses of security upgrading for ready built apartment houses or complexes. That is a common sense. Particularly a complex with more than a thousand households usually cost so little that each householder can feel unburdened although it depends on the construction firm's income and outgo.

He also pointed out that specifically employing TAS at the planning stage costs four or five times less than after building completion and so it is almost impractical to employ TAS after completion stage. It clearly reflects the importance of cost-effectiveness of CPTED planning.

¹⁸ They are better trained and educated by the security companies than current apartment guards under the *Security Industry Act 2001*. There were only six security staffs excluding two control room staffs for 358 residents in a Yongin TAS apartment complex.

¹⁹ Security Number 1(S1) is currently the largest security company in Korea.

TAS covers the integrated security of individual households as well as communal spaces, such as lifts, car parks, play areas, gardens and main entrances. With reference to individual households, home automation system²⁰ is necessary for digital door lock, infrared intrusion detection system, magnetic intrusion detection system, emergency alarm, gas leakage detection and so forth. Communal spaces are equipped and managed with security facilities, such as CCTV cameras and panic alarms, through a security company by the request of a construction firm. A TAS complex has contracted gardeners and cleaners who are in full charge of those tasks, and so security staffs do not deal with non-security business, which was not the case with the sample complexes. The developers can raise the house price by satisfying purchasers in terms of home security and safety with the system. It was also stated that a S1 marketing survey on customer satisfaction found more than 95% of the respondents who live in a TAS complex were content with TAS. A PCPO of Yongin (another metropolitan city) Police Station indicated the effect of TAS exemplifying that;

Two apartment complexes developed by the same construction firm during the similar period showed a significant difference in property crime statistics. Whereas one complex (Ssangyong 2) with TAS has been free from the kind of crimes for during the last six months, the other one (Ssangyong 1) without TAS has suffered from burglary and vehicle crimes during the same period. Therefore the resident representatives and managers of the non-TAS complex are considering or requesting TAS installation, which is in fact almost impractical due to high cost.

He also stressed that the TAS complex has not suffered from property crime during the initial move-in period, which was, on the contrary, common for non-TAS ones.

For Both Current Apartment Complexes and New development

(a) Four security measures

The cost of upgrading or building a car park is usually considerable and the level of investment required can be a barrier to apartment managers or residents. Expenditure is also required to repair and maintain car parks to keep them at a certain standard and such regular expenditure was a common feature of the better ranked car parks in the survey. While improvements to car parks may lead to both increased usage and profits

²⁰This system automates and integrates the control of service, such as the internet, gas, electricity, shopping, intrusion detection, emergency response, telephone and panic alarm. A number of service providers (e.g. Korea Telecom [KT], S1, LG electronics, etc) compose consortium partnership to construct home automation system.

for operators, profit making is not available for apartment car parks as they are not for commercial purpose. It is however supposed that an apartment complex should be a space for peaceful residence where a large number of people are living individually in a relatively small area. Security upgrading is therefore vital for particularly the high-crime car parks.

First of all, with regard to staffing a large-scale complex requires properly trained security officers, who can prevent crimes and deal with any emergent incidents with agility and quickness in particularly high-crime apartment car parks, rather than poorly trained guards. To enforce it, relevant regulations like the *Presidential Decree on Multi-housing Management* should rule a particular requirement of apartment security staffs and their explicit powers, though legally restricted, for their specific crime prevention activities within their workplace. The regulation might include detailed requirements, such as the proper number of security guards according to the scale of complex, the guards' age limit and their physical condition as well as their particular powers to check-up vehicles and pedestrians without exception²¹. As there are a large number²² of apartment security guards, similar to the total number of regular security officers under *Security Industry Act 2001*, it might be important to consider some details about apartment guards' qualifications to be included in the Act in order to develop manned guarding service for multi-dwelling units.

The unemployment rate of young people as a chronic national problem²³ could partly be lessened through the government policy and legislation that attract young labour resources to the activities for the security and safety of local residential communities. As an apartment manager pointed out, elderly security guards need to work for the security of low-rise apartments (walk-ups) or houses even more vulnerable to property crime than high-rise apartments in a certain circumstances according to several studies (KIC, 2000; Park & Choi, 1998). Thus young security officers would be able to cover high-rise apartment complexes while aged guards cover the areas of low-rises or houses.

If several houses or low-rise flats compose a group and contract manned guarding service to employ some security staffs - regardless of their ages - on a 24-hour basis, it

²¹ although it needs adequate balance with police officers' powers as a matter of course.

²² According to NPA statistics, in 2003, the number of apartment security guards is 78,112 for 44,400 apartment blocks

²³ The unemployment rate of the 15~29 year-old young people is 8.8% on February 2004 according to the National Statistics Office (NAO) report.

might generate a positive effect, such as crime deterrence as well as improved job chances for aged generations. They might be able to play the similar role of public night guards²⁴ who used to work for the local communities in urban areas in Korea between 1989-1995. They could contribute to guiding runaway juvenile and prevention of juvenile violence, let alone to reducing property crime and residents' fear of crime as Neighbourhood Wardens (NW) or Police Community Support Officers (PCSO)²⁵ do in Britain.

On the other hand, CCTV cameras as a crime prevention tool have become indispensable due to general public's crime concern and uprising demand in South Korea. The number of security companies has been soaring up from ten in 1978 and 136 in 1988 to 2,163 in 2003 and those corporations have gradually renovated their marketing strategy to boost up security product sales²⁶. However, it has been an on-going issue that training of CCTV operators, CCTV management and operation need to be properly standardized. CCTV has recently become widespread from industrial premises, office blocks, commercial areas, high-rise apartments and leisure facilities to even the alleys of residential streets in Korea. Kangnam Police Station in Seoul has initiated a CCTV scheme by the financial support from its counterpart local government, Kangnam-Gu Ward Office²⁷. For the purpose of a model experiment, five cameras have initially been installed at an alley of a residential street, which had been seriously vulnerable to violent crime, in December 2002²⁸.

The police box near the surveillance site was in charge of monitoring on a 24-hour basis.²⁹ The Ward Office additionally installed 230 more cameras by May 2004 with

²⁴ Similar to Neighbourhood Wardens or Community Support Officers in Britain in terms of paid public policing business.

²⁵ Police Community Support Officers (PCSO's) are civilian staff employed to support the public and assist police officers. The main aim of a PCSO is to provide a visible presence on the street, and improving the quality of life in the community by offering greater public reassurance.

²⁶ From National Police Agency data

²⁷ Chosun Ilbo Newspaper, *Hot Debates on Backstreet CCTV camera in Kangnam-Gu* [updated 26 July 2003], <http://www.chosun.com/w21data/html/news/200307/200307260057.html>, [accessed: 2 September 2003]

²⁸ Gangnam Police announced that 43 percent of violent crimes reduced from 40 incidents in January-May 2000 to 23 in 2003 counterpart.

²⁹ A CCTV control room is developed in a Patrol Division Headquarter (reformed from the Police Box system) at the area in May 2004. Control room operators are contracted out to a private security company rather and managed by the police, which made the issue controversial.

the expense of seven billion won (≈£3.5 million), which might be the best example of ‘Community Policing’ in South Korean Police history. However, human rights groups and NGOs, such as Joint Meeting for Exterminating Labour Surveillance (JMELS³⁰) or Korean Bar Association (KBA) severely, argue that surveillance cameras installed at a residential street could intrude privacy as well as human rights, which should be protected by the *Constitutional Law*.³¹ Moreover, there is currently no specific standard or regulation for CCTV system installation, operation, relevant training and data protection relative to CCTV footage yet. Therefore it does not seem that the diffusion of CCTV cameras is so optimistic. Nonetheless, CCTV proliferation on a national scale seems inevitable as a questionnaire survey of residents (n=2,500) carried out by the Ward Office showed that 85% of the respondents answered they agree with the CCTV installation.

England has expanded CCTV installation for public places all over the country since early 1990s under the large scale financial support from the Home Office, which has led to namely the largest CCTV coverage in the world. However, installing CCTV cameras at residential sites has somewhat recently been carried out with an intensive carefulness. Systematic and well-organized training and instruction³² of system operators as well as legislation³³ for protection of civil liberty, privacy and data have been gradually lessening resistance from NGOs and civilians against CCTV spread. A number of studies³⁴ carried out by many local authorities showed that an absolute majority of citizen respondents have no worry about CCTV installation, indicating anxiety over intrusion of civil liberty and privacy was almost baseless.

³⁰ The official English name for the group was not available, so the initials are provisional.

³¹ In late 2003, KBA filed a complaint against Kangnam Ward Office and Kangnam Police Station about the intrusion of privacy and right to likeness through the arguably illegal CCTV installation in the Kangnam Ward area. It is expected that the legislation for the proper procedure of CCTV operation and management would be accelerated by the complaint. However, there is currently no particular government department in full charge of the CCTV-related regulation and also it seems that the central government does not have much concern about the legislation issue.

³² National Vocational Qualifications (NVQs) provide a framework for a competence-based approach to training in different occupational areas. The British police appoint Police CCTV Liaison Officers from Crime Prevention Officers, who take relevant Home Office training, to deal with CCTV management and operation.

³³ Data Protection Act 1984, Criminal Justice Act 1991, Sex Discrimination Act 1975, Race Relations Act 1976 and Police and Criminal Evidence Act 1987 for the system operation; British Standard (BS) 7985:1999 (Code of Practice); Criminal Procedure and Investigation Act 1996 for the disclosure of evidence..

³⁴ For examples, Honess & Charman, 1992; Loveday & Paterson, 2000; Sarno, 1996

Considering that CCTV in public or private places is still a high-profile issue in Korea despite a majority of support found in some studies, a successful CCTV policing strategy requires proper system management and operation, familiarity of relevant knowledge and technique, sufficient training and education and also provision of specific regulation about data protection. It is essential that the section 6 of the *Enforcement Regulation of the Car Park Act 1990* should be revised to include the proper number of cameras per parking space, the frequency of tape reuse, keep period, etc. It may also be important like the British case³⁵ that local governments proactively take part in the activities of crime prevention to improve the quality of citizens' life and the safety of their communities. Financial patronage of security system like CCTV for large-scale apartment complexes might be one of the most proactive public intervention by a local government as a form of problem-oriented approach³⁶.

(b) Revision of Relevant Regulations

It seems that the central government and lawmakers are lacking awareness about the seriousness of crime problem in high-rise apartment complex areas. The police may need a well-organized and evidence-based approach to demand the revision of car park security-related regulations. The revision work, however, appears to be challenging because of the obstacles described above. Recently National Police Agency requested the government and lawmakers to revise '*The Regulation on Housing Development Standard*' in order to enforce developers to install CCTV cameras at the entrances of every apartment block, indicating the following reasons.

Firstly, the NPA crime data demonstrates that crimes committed in apartment complexes have been on the increase since 1996. Particularly the number of robbery has nearly doubled between 1996 (397 incidents) and 1999 (645 incidents). Secondly, the current crime prevention facilities and security management in high-rise apartment complexes are generally poor and deteriorated. Thirdly, the majority of aged apartment security officers usually fall short of guarding skill and physical competence. However, it was finally rejected because the government and lawmakers considered that it is likely to intrude the privacy of residents living in the places even though it might be able to prevent crime. If the police had requested revision with sufficient data about citizens'

³⁵The Home Office CCTV scheme has expanded from 100 cameras for three local towns in 1990 to 400 for sixteen towns in 1994, 5,238 for 167 towns in 1997. It is expected that 40,000 cameras for 500 towns in the end of 2002, considering the subsidiary provided during the last five years. CCTV cameras have been installed in town centers, car parks, residential streets and other crime 'hotspots'.

³⁶ It is also a type of community policing activities.

perception and acceptability of CCTV surveillance for crime prevention and safety, the NPA suggestion might not have been rejected. Thus, the significant legislation and revision of regulation for the security and safety of apartment complexes appear to be way behind the right time for change.

On the other hand, the Ministry of Government Administration and Home Affairs (MOGAHA) seeks to reinforce the standard of fire prevention and evacuation, such as the durability criteria of a fire door.³⁷ Also while the *Presidential Decree on Multi-housing Management* stipulates the people with relevant certificate, such as fire prevention, sewage disposal, gas or electricity as criteria of skilled technical staff for high-rise apartment complexes, there is no regulation on apartment security staffs despite the increasing number. It is a significant point that more than a half of the whole population in Korea is living in high-rise apartment complexes, and so the crime prevention should be regarded as important as disaster prevention and fire safety to ensure the decent quality of their lives in those places.

(c) Planning and Management Practice

It is expected that a small number of security staffs can effectively cover a large scale of high-rise complex as long as developers plan a complex with only a few extensive underground car parks and no surface car parks so that the complex may have a spacious communal open space in the middle of blocks and sufficient number of security guards deployed for the enclosed garages³⁸. Also if each apartment unit were allocated one or two parking spaces and those who use the parking spaces are charged parking fees, the fees might be utilized to employ on-site guards for the car parks. However it would require relevant regulations to be revised for enforcement.

(d) Car Security

The poor security of apartment car parks is not the only cause of crimes happening in the places. In reality, as the Korea Insurance Development Institute (KIDI)'s recent 'break-in test' showed professionals break in almost any Korean motor vehicles recently

³⁷ Korea Apartment Newspaper, *New Standard for Fire Prevention*, [updated 30 January 2003] <http://www.hapt.co.kr/> [accessed 2 September 2003]

³⁸ Recently there are several apartment complexes of 100 percent underground car parks already developed or under development in Seoul Metropolitan area. The examples can be found in <http://www.kedok.co.kr/byang/gallery/bs/byang.htm>, http://news.naver.com/news_read.php?oldid=200312230000336785041 and also http://news.naver.com/news_read.php?oldid=20031110000018046

security-upgraded within less than seven seconds on average. This Bundang-Gu study also showed that about 74% of crimes committed in the apartment car parks were vehicle-related crimes, such as car theft, car break-ins and car vandalism. Hence, car security *per se* might still be as significant as car park security to prevent vehicle-related crimes. Steering column locks, alarms or immobilisers can significantly reduce car thefts or car burglaries as some studies (Briggs, 1991; Brown & Billing, 1995; Webb, 1994) have already proved their effectiveness although the effectiveness of more modern car security is, however, an area in which further research is required.

There is no single scientific study on the effectiveness of car security devices so far in South Korea although installing vehicle alarms have been popular in Korea whereas immobilisers have not. It seems necessary that electronic immobilisers should be ruled to be installed for newly manufactured cars in South Korea when considering the current vulnerable car security. Car manufacturers might also be able to improve security against violent crimes, such as robbery or abduction through employing an in-built high decibel panic alarm, which can alert passers-by or security guards in any car parking areas by the driver's remote controlling in an emergent incident, for new vehicles. Pushing the alarm button would ring the alarm and the criminals would probably flee from the place. Also GPS³⁹ (Global Positioning System) installed in a car, which recently became popular, has enabled easy tracking of abducted people or victims of carjacking.

Conclusion

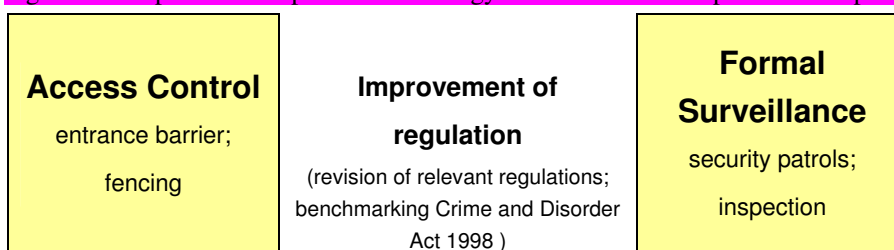
The plausible precondition of this study was that the local police have an eminently limited ability to effectively reduce crime in their policing area and that therefore self-policing by the people concerned is indispensable. Some critical points for improvements of the current crime problems in the high-rise apartment complex area were in detail suggested in this article but there is still room for deliberation about policing by partnership when the private sector significantly fall short of resources and cannot afford to take action against the problems.

³⁹ A system of satellites, computers, and receivers that is able to determine the latitude and longitude of a receiver on Earth by calculating the time difference for signals from different satellites to reach the receiver.

A holistic and problem-solving approach based on shared effort, information, resources and expertise among key local agencies is required as the partnership approach to reducing local crime problems recognises that such problems cannot be effectively tackled solely by the police or any other agency. In Britain, the 1981 Scarman Inquiry into the Brixton disturbances and the fifth recommendation of the 'Morgan Report' originated the statutory responsibility for the development of community safety from crime and disorder (Sampson *et. al.*, 1998). The 1990s witnessed wide-scale voluntary development of community safety partnerships across Britain and Section 5 and 6 of the *Crime and Disorder Act 1998* came into force from the national and local desire for community safety and crime prevention. Section 5 and 6 of the Act place an statutory obligation on local authorities and the police, in partnership with other agencies, to complete a specific cycle of activities every three years, such as local crime and disorder audit, consulting on the basis of the audit, formulating a strategy for tackling crime and disorder, implementation/monitoring and repeat process. Although it is of course that there have been limitations and challenges, such as tight time-scale, duplication, information exchange between agencies and excessive financial costs, a greater proportion of partnerships in Britain seems to feel that the benefits of multi-agencies outweigh its costs. Korea has had some voluntary community safety partnership, which has been often patchy, ad hoc and rarely systematic or proactive. It is hoped that the British partnership case would be able to provide the persons and agencies relevant to the community safety with a fresh and productive idea and viewpoint about the local crime and disorder issues in Korea.

In conclusion, a multi-faceted strategy model of the optimal policing for the site security can be recommended as Figure 5 shows. The integrated car park security is to be triggered by four key specific tools with other additional measures which help the four tools to come into visible action. Those tools should interact with one another rather than stand alone to activate the crime prevention and reduction mechanism, to result in a synergy effect.

Figure 2 Proposed crime prevention strategy model for Korean apartment car parks



<p>Intervention of public policing (considering British Secured Car Park scheme; ALO⁴⁰)</p>	<p>Apartment Car Park Security</p>	<p>Planning and management practice (improvement of urban planning and development)</p>
<p>Natural Surveillance Lighting; landscaping</p>	<p>Central or local government intervention (financial support; local partnership)</p>	<p>Surveillance by Employee CCTV monitoring; police radio link</p>

Note: Synergy obtained with integrated strategies for the car parks to maximise protection of vehicles and residents, to minimise fear of crime on site and therefore to enhance quality of urban life and community safety.

⁴⁰ Architectural Liaison Officer with reference to Secured by Design (SBD) initiative

APPENDIX: Secure Car Park criteria approved by ACPO

Underground (Enclosed) Car Parks

N.B. a) Car Parks not reaching the maximum requirement in any one section may still be awarded points

b) If a particular element is not appropriate the full point allocation will be awarded.

TOTAL POINTS (MAXIMUM 100 POINTS):

Employee Surveillance and Formal Surveillance (Maximum 25 points)

(1) British Standard 5489 Part 9 (1990) – 25 points

Vehicle/Entry/Exit (Maximum 6 points)

(1) Height barriers – 2 points

(2) Rough surfaces/access ramps – 2 points

(3) Controlled access/egress – 2 points

Parking Areas (Maximum 10 points)

(1) Support pillars/visibility – 2 points

(2) Railings on half levels – 2 points

(3) Parking in straight rows – 1 point

(4) Circulatory movements – 1 point

(5) Grilles on external openings – 2 points

(6) Sufficient signs – 1 point

(7) Parking levels identifiable – 1 point

Pedestrian Routes (Maximum 12 points)

- (1) Entrances have good natural surveillance – 4 points
- (2) External approach routes have good natural surveillance – 4 points
- (3) Low level (1 metre) planting near paths – 4 points

Lifts and Stairwells (Maximum 20 points)

- (1) Two lifts for two levels or more – 3 points
- (2) Spacious lifts (8 persons) – 3 points
- (3) Unobstructed landing area – 1 point
- (4) Wide doors opening directly onto parking levels – 2 points
- (5) Wide stairways and open balustrades – 3 points
- (6) Doors – glazed, clear view of landing/stairwells – 3 points
- (7) Stairwell and landing external openings to be glazed – 2 points
- (8) Natural surveillance of lift interior – 3 points

Security (Maximum 21 points)

- (1) CCTV or manned security patrols – 8 points
- (2) Member of staff contactable – 2 points
- (3) “Long Stay” area not identifiable unless surveilled – 2 points
- (4) Payment meters – numerous, lit, clearly visible and regularly emptied – 2 points

- (5) Manned kiosk security – 2 points
- (6) Anti-graffiti materials – 1 point
- (7) Vandal resistant light fittings – 1 point
- (8) Graffiti management – 1 point
- (9) Lockable entrance/exit – 2 points

Bonus points – 6 points

HOCPC D/1/5
Approved by ACPO
February 1992

Criteria

Surface Car Parks

N.B. a) Car Parks not reaching the maximum requirement in any one section may still be awarded points within the limit specified. Points are not to be awarded on a 'all or nothing' basis.

b) If a particular element is not appropriate the full point allocation will be awarded.

TOTAL POINTS (MAXIMUM 100 POINTS):

Lighting (Maximum 30 points)

(1) British Standard 5489 Part 9 (1990) – 20 points

(2) Column height – 5 points

(3) Trees not obstructing – 5 points

Natural Surveillance (Maximum 20 points)

(1) Defined perimeter and pathways – 4 points

(2) Natural surveillance of site – 4 points

(3) Embankment or wall not more than 1 metre – 4 points

(4) Planting only on perimeter and ground cover only between vehicles – 4 points

(5) No foliage between 1 and 2 metres – 4 points

Vehicular Access and Parking Areas (Maximum 14 points)

(1) Narrowed entrance – 2 points

(2) Height barrier – 2 points

(3) Parking in straight rows – 2 points

(4) Circulatory movements – 2 points

- (5) Speed ramps – 2 points
- (5) Sufficient signs – 2 points
- (6) Controlled access/egress – 2 points

Pedestrian Routes (Maximum 8 points)

- (1) Wide Entrances/exit – 2 points
- (2) No vehicle usage – 2 points

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ACPO February 1992

Criteria Approved by

- (3) Good surveillance – 2 points
- (4) Number of alternative routes – 2 points

Security (Maximum 21 points)

- (1) Well sited CCTV or manned security patrols – 8 points
- (2) Member of staff contactable – 2 points
- (3) “Long Stay” area not identifiable unless surveilled – 2 points
- (4) Payment meters – numerous, lit, clearly visible and regularly emptied – 2 points
- (5) Manned kiosk security – 2 points
- (6) Anti-graffiti materials – 1 point
- (7) Vandal resistant light fittings – 1 point
- (8) Graffiti management – 1 point
- (9) Lockable entrance/exit – 2 points

Bonus points – 7 points

HOCPC D/1/5

ACPO February 1992

Criteria Approved by

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