

Model of Crime Prevention by Environment

Sasitorn Dechporm

Faculty of Social Sciences and Humanities, Mahidol University, Thailand

E-mail: junebtu@gmail.com

Abstract

The objectives of this study are to manage local physical environment and to apply the human relations in the community as a guideline to prevent crime in the community effectively. This is another way to reduce the possibility of crime. However, the crime prevention by the environment in Thailand still lacks the importance given to the management of crime prevention by the environment of the government. Therefore, this study has the objective in studying the crime prevention model by the environment in Thailand. In this study, the qualitative research methodology is used to determine the appropriate crime prevention policy. The population is selected by specific sampling method. This sample consists of the stakeholders in the community and police stations using the in-depth interview with the award-winning area of the Community Police, 2014, being the area where crime statistics are reduced in the area of Phrae Police Station. The researcher conducts the in-depth interview with the sample group; 10 administrators of the police station and the community. The research result reveals that the crime prevention model by environment in the concrete environment (physical) consists of risky areas, city planning design, and residential design and the dimension of the abstract environment (human relationships) consists of the arrangement of community activities, neighborhood alarm, and the public surveillance. It is found that all aspects are crime prevention by arranging the appropriate environment as a guideline for preventing crime and reducing crime in the area.

Keywords: Crime, Environment, Residential Design, Community Activities

Introduction

The study on the environment in crime reduction is important because the crime problem is caused by the risky environment resulting in the decision of criminals to commit crimes in the areas risky for the crimes (Cornish and Clarke, 1985). Crime causes the fear to the community people both physically and in the properties. Therefore, designing natural conditions with the city planning can help creating safety to residents and reducing the fear to the crimes (Cozens, 2002: 129-137). This shows that the crime prevention has various approaches and methods of crime prevention by the management on physical environment and the environment management in bringing the relations of community people together to help preventing crime. This is another way to reduce the possibility of crime. This issue is consistent with the research of Salehi (2012) which discusses the environmental factors involving in the crime in Tehran area, Iran, stating that the environmental factors cause insecurity feeling in urban areas. As there is not enough light, public transport is not safe, entertainment places available in the area, people fear of crime and insecurity. In addition, the issue of environmental changes can reduce the crime. This is the concept of Nienwithun (2007) studying the approaches in designing the environment to reduce the risk of crime in residential areas of urban communities by arranging the environment of the area to increase the visibility of people in the community area; lighting, urban planning, routing. This will greatly increase the effectiveness of crime reduction in urban area most efficiently. In addition, there is the consistent view of Clancey, Fisher and Lee (2015: 270-290) stating the assessment of risk of the crime possibility in the area of Australia's New South Wales (NSW). In designing the method to reduce the crime risk in the year 2014 for 23 places, the

research results reveal that, from the crime risk assessments in 10 places out of 23 locations (43.5%) there are possibly problems such as crime and hospital safety. Thus, the environmental management measures have been implemented in many areas and have been applied as natural protection in the maintenance of common areas. The concept of effective environmental management has been used extensively. The idea of Clancey (2010: 55-67) stating that the environmental design has the pervasive approaches supported by the governments throughout Europe, North America, Australia, New Zealand, Asia, and South Africa. This can be seen from the importance of international environmental crime prevention policy to be recognized. The agency being important and having the direct duties for the crime prevention, the police, has to cooperate in performing the duties in the crime prevention with the community. It can be seen that the crime prevention can be done with various methods and ways to prevent crime by arranging the local environment properly as well as using the relations of people in the community to help preventing crime. This is another way to reduce the possibility of crime. The action plan of Royal Thai Police, National Office Strategy, on public participation and crime prevention network arranges the project for the selection of the Police Community Relations of 2014, namely, Sung Men Police Station, Phrae Province, was awarded the title of Community Police collaboration with people, the government, and the private sector. This award-winning community has the approaches in the organization of effective crime prevention environments as follows; 1) The policy of crime prevention in wilderness areas and adjacent to the border, 2) The design of urban planning in the community with the guard station at the entrance of the community to prevent the stranger coming into the area having enough light causing people in the community more secure, 3) Design of houses with the gates for safety using the existing natural resources in the community such as teak wood to build the house's fence for security and landscaping the wilderness and the mound in the community, 4) Community activity arrangement as the center of people's minds in the area, which will have strong cultural tradition of the community people and the relationship of people in the community, 5) Neighborhood alarm is the cooperation of community people in the alarm by monitoring the security of people in the area and informing the behavior of people in the area, 6) Inspection volunteer, with the volunteers exchanged to monitor the security by having a checkpoint in and out of the community. The guidelines for organizing the community's crime prevention environment can reduce the crime statistics on property in the area as well (Royal Thai Police, 2006).

Therefore, the arrangement of environment is an efficient crime prevention which can be synthesized as a factor leading to the solution of crime. In this research, the objective is to study the crime prevention model by environment which is the topic that should be researched so that various agencies can be applied in determining proper policy. This issue is the research problem set by the researcher. It will be studied with the management of the police station and community administrators in the sample area winning the award of the Outstanding Community Police of 2014. It is the area where the crime statistics is reduced; Sung Men Police Station, Phrae Province. It can be shown which form of crime prevention could prevent crime in the community.

Theory on the Crime Prevention by Environment

The concept of crime prevention by environment was initiated in 1971 by Jeffery (1977) who proposed the Theory of Crime Prevention through Environmental Design: (CPTED) using the principles of natural learning. Crimes often occur from criminals' impulses in encountering the physically unstable environment. The appropriate design of environmental spaces can reduce crime and reduce the fear of crime. The crime prevention by environment consists of 4 key elements; 1) Surveillance is to help observing who commits the crime causing the risk in being watched over the behaviors such as neighbor's alarm, CCTV installation, etc., 2)

Access control is to control the one-way access for preventing the outsiders to enter the area easily, 3) Division of personal area is to create the sense of occupying the area by clearly separating the territory between personal space and public space to prevent the outsiders from penetrating into the personal space, 4) Maintenance and management is the care and maintenance of residences to keep order to show that people living in the house all the time can prevent crime. There are also many academicians who offer the concept of environmental management with the same opinion. In the process of crime risk assessment, it provides knowledge and understanding to create a policy to prevent environmental crime, city planning, psychology, environment, public health and sustainable development (Cozens, 2014: 30-55). In addition, the concept of physical environment can reduce the fear of crime and improve the quality of life of people following the CPTED concept is the basis on environmental design and the relationships of people who help reducing the criminal behaviors (Fennelly and Crowe, 2013:25-26). In explaining the theory of environmentally crime risk, it requires the good security in designing the environmental condition and using the CPTED theory. It can reduce the risk of robbery as follows; 1) The security of the area and the setting of the lighting environment and the visibility for the security in the area, 2) Environmental design consists of landscape and place, 3) Enough lighting allows the users to observe the abnormalities of the culprit and the lighting that can deter criminals, 4) The landscape is clearly visible because the desolate trees can be the hideouts of the criminals (Atlas, 2013). Based on the synthesis of research related to crime prevention by the environment as shown in the concept of Reynald (2010) having studied the crime prevention for security, surveillance of the area by natural environment is one of the physical area design in Hague, Netherlands. There was the large sample group of 2,847 people. The study results reveal that the surveillance of natural areas of both public and private sectors is positively correlated with the presence of residential factors such as the different gates of each locality which are effective in different contexts. It is evident that each locality has the concept of bringing the environment to use in order to be effective by linking it closely to nature, enhancing the maintenance of physical environment, and reducing crime. Some aspects of Welsh, Farrington, and O'Dell research (2010) stated that future crime prevention strategies have the policy in preventing crime in the control of crime. In the study area in the United States, it is found that the technology factor is important because it can be evidence and can be monitored with the policy of criminal convictions in order to reduce and prevent crime. Street lighting can be useful during the night and the safe park area. Future crime prevention in government policy setting is an important element of crime reduction strategies. Similarly, the modern view of Cozens concept, Saville and Hillier (2005) studying the crime prevention through environmental design. (CPTED): Modern Perspective in British area is the qualitative research using the interview. The research results reveal that crime prevention through environmental design is effective in reducing crime and reducing fear of crime in the community with the use of modern approaches such as surveillance, maintenance, access control, activity arrangement in the areas of to achieve effective targets. The research of Ekblom, Armitage, Monchuk, and Castell (2013: 22) also recognizes the design of building. However, in the design of construction, it cannot force the design to follow the safe environment arrangement. There must be incentives for crime prevention in the community. The environment arrangement in the West should be developed having the cultural and environmental features created in a climate of change between Northern Europe and Australia. But in the UAE area, the challenge is huge because of the climate, culture, and traditions. Moreover, the different experiences result in different environments. Thus, the theories related to crime prevention in Thailand have the combined concepts of law enforcement theory which is the initial concept. The concept of community relations is the controversial concept that can be applied in 2 dimensions: 1) the abstract environment, 2) the

concrete environment with the environment arrangement theory to prevent crime appropriately for Thai society and culture. The researcher select to use the theory of crime prevention by environment having been disseminated in Thailand of Piamsomboon (2012:22). From the crime prevention theory by environment, it can be summarized from the theoretical concepts as follows; 1) the concrete environment (physical) consists of city planning of the community by providing appropriate facilities to prevent crime and surveillance observation to increase the crime prevention in the area such as the installation of CCTV, street lighting at night by limiting only one-way access to control the outsiders to enter the area easily. More importantly, there must be the maintenance and management of the house at all time, 2) abstract environment (relationship of people in the society) has created the good relationship in the community by organizing community activities, providing the information on crime prevention, and getting acquainted with neighbors to help one another. There are volunteers and police alert by phone or police inspector to provide information to the police in a timely manner.

Research Methodology

Population and Sample: The research on “model of crime prevention by environment” is the Qualitative Research. The population is selected by specific sampling method. In this research, the sample group is selected by considering the samples to use the data obtained from the qualitative to be processed leading to the findings. The selected sample group consists of relevant people in the community and police stations using the in-depth interview with the award-winning area of the Community Police, 2014. It is the project following the operational plan of Royal Thai Police, Office of Police Strategy for the fiscal year of 2014 in the strategy of public participation and operational network of police both public sector and people in solving the problem of crime and provide a strong service and a crime reduction area in Phrae Police Station. The researcher uses the in-depth interview with the sample group of 10 administrators of the police station and the community consisting of 1) 1 Superintendent of Police Station, 2) 1 Deputy Superintendent of Police Station, 3) 1 Inspector of Police, 4) 1 Deputy Chief Inspector of Police, 5) 1 Squad leader (act in the prevention and suppression), 6) 1 Community President, 7) 4 Community Committees.

Data Collection: The data collection process is done from the study and research on the documents to be used as a guideline for designing the in-depth interview. The researcher collected the data during August, 2015, by using the structured interview. The researcher requests for the cooperation from the organizations and individuals who are the representative of the sample group to request for an official interview to survey the crime prevention model by the environment. Moreover, the in-depth interview and the non-participant observations are used together with the Focus Group Discussion.

Data Analysis: In analyzing the data collected from the in-depth interview, the researcher uses the data obtained from the in-depth interview for the data analysis and processing by operating together with the process of data collection from researching the information from the documents. The research process and analysis is to analyze the data by considering the main issues to be divided into sub-issues and sub-topics as an analytical process starting from the overview to sub-dimension analysis. In addition, the process of reflection in each period is coupled to enhance the accuracy. The in-depth interviews are also used to describe the facts following the co-phenomena in order to find the process of qualitative research as an important approach leading to the formulation of guideline for determining the substance of crime prevention by the environment.

Research Results

Risky area

The result is the precarious area is a desolate environment in the area which facilitate to commit crime because *"Geography is a mountainous area. Most of the area is adjacent to the mountain range next to Burma and the wilderness areas which are agricultural areas and pets fed to earn for living"* (Superintendent of Sung Men Police Station, 2016).

In the deserted area, it is the unsafe route which is risky area. There is no adequate lighting for the convenience of travelers in the area (Royal Thai Police, 2006). Crime problems occurring most in the precarious areas are the crime on properties occurring from being "the mingling of youth in the area by stealing agricultural and livestock products such as cattle" (Inspector of Crime Prevention, Sung Men Community Police Station, 2016).

City planning

The results of study on the city planning reveal that various infrastructures are generated in the area such as electricity, lighting, roads, parks, security station, etc. "In the area, there is the surveillance at the security checkpoints at the entrance and exit and the community security stations in various points to reduce the risk of crime in the area." (Inspector of Crime Prevention, Sung Men Community Police Station, 2016).

The problem is that in the area is lack of sufficient budget to be used in crime prevention such as for CCTV, local volunteer equipment. Thus, people in the area "gather in group to establish the community enterprises for making small furniture in order to earn money to help crime prevention volunteers by the community environment to buy equipment for crime prevention volunteers, CCTV, and lighting in the area" (Sung Men Community President, 2016).

Design of residences

The research results on the design of residences with fences and the suitable environmental arrangement can simply prevent crime by *"Care and maintenance of housing to be always in place in order to demonstrate that people live in the houses all the time by designing the fenced houses for the safety of households"* (Superintendent of Sung Men Police Station, 2016).

House design is important and requires a lot of budget. However, we can save money to build the houses safely in the community *"By bringing the natural resources available in the community which is the teak wood to build the house's fence for security in the community"* (Sung Men Community President, 2016).

The expression of care for the houses of the community people, care and maintenance of house to be always in place *"There was a campaign to clean the area in the community by cutting grass along the way once a month"* (Sung Men Community President, 2016).

Community Activities

Organizing activities in the community can achieve harmony and cooperation in the community. It builds relationships among community members *"by building the relationship in the community area having Sung Men Temple which is the ancient temple that is the center of local people in the area to have activities. The local cultural remain strong whether the ancestral rituals, Chor Hae veneration, Kuay Salak traditional, etc., to transfer the culture of people in the community"* (Sung Men Community President, 2016).

The harm prevention of people in the area is done by allowing them to participate in the activities to build relationships and unity among people in the community as well as creating the cooperation in alarming the neighbors by *"doing the activities altogether by the people who work altogether as a community enterprise to produce the small furniture, sufficiency economy project in self-reliance, activities of local folk culture which still remain strong"* (Sung Men Community President, 2016).

Neighborhood alarms

The research results on the crime prevention measures require the cooperation from community members. When a suspicious event occurs, the volunteer will inform by *"warning to help one another. Applying the community radio can help spreading the news in the community warning on agricultural crops. The use of community radio can help spreading the news in the community"* (Squad Leader, Sung Men Provincial Police Station, 2016).

The Neighborhood Warning measures help people in the community work together and gather in planning to create common feeling and help to observe and inform the clues in the area to one another. The "use of technology and news from Line or Facebook in alarming and the night check of local people can help keeping eye on the crime" (Inspector of anti-suppression, Sung Men Provincial Police Station, 2016)

Public inspection

The study on the public inspection reveal that the neighbors volunteered to turn around in the responsibility to help one another on the surveillance in the area near their home. *"Having the public inspection to help alarming the neighbors is known by everyone in the community as the collaborating on community activities by organizing volunteer training in the community and to help changing the security to supervise the entrance to and exit from the community"* (Superintendent of Sung Men Provincial Police Station, 2016).

Checking the risky areas can make people trust in the performance of duties of the police more. The sub-district head, village headman and the Community President will help to cooperate in the field of crime prevention as well. "Setting up a volunteer patrolling the safety of people in the community can make people in the area who see abnormal things in the community to notify the police to proceed with the arrest" (Inspector of anti-suppression, Sung Men Provincial Police Station, 2016).

Discussion and Conclusion

Concrete environment dimension (physical)

1. Risky areas: From investigating the risky areas in Phrae province, it is found that the geography is conducive to crime in border areas, wilderness area, and mingling area of teenagers. In that area, the path is unsafe. It is risky area as there is no adequate lighting for facilitating the in and out of the area. It can be seen that leaving the wilderness area is risky for crime. The measures must be taken to prevent the commitment of offenses. From using physical facilities in managing the environment to be safer, it is consistent with the research of Cornish and Clarke (1985) stating that rational selection by social factors and economic factors of the offenders allowing the situation to have the decision to become an offender. The choice for a person to do is sometimes a rational choice, for example, an environmental area leads to the decision of the offender. Because in areas where there is less risk of crime or being the familiar area, the offender will have the main cause in making the decision such as in case of motorcycle robbery, it is the offense occurring in the environment of isolated areas without CCTV and crime prevention.

2. City planning: It can be seen that city planning is an important factor in preventing crime in the area due to the presence of surveillance in the community in order to prevent the outsiders to come into the area for the community people to be more safer. Moreover, the government has provided public facilities for living such as roads, electricity, CCTVs, pedestrians, etc. It can be seen that these facilities can make people use and feel the same in maintenance and utilization of useful resources. The results of this research agree with the research of Jampawan (1996) studying the city planning approaches to prevent crime in the suburban areas of Bangkok. The results of study indicate that the city planning effectively in controlling the area can reduce the opportunities for criminals to commit crimes. The design of city planning is very important to help controlling the entry and exit of community people

and to help reducing the crimes. The vision of Jeffery (1977) is similar to this concept due to the Theory of Crime Prevention through Environmental Design (CPTED) has developed the idea in crime prevention by environment of the offense. The main principles are; 1) surveillance by observing the offense to cause crime in the area such as CCTV installation, etc., 2) entrance and exit control which is to limit one-way exit and entrance to prevent the outsiders to enter and exit the area easily, 3) division of personal area to prevent the outsiders to invade in the personal area, 4) Maintenance and management is the care and maintenance of residences to keep order to show that people living in the house all the time can prevent crime. Moreover, the city planning is also correspondent with the concept of Welsh, Farrington, and O'Dell (2010:19-29) studying the crime prevention in the future: strategies in the development and situations with the road lighting to benefit at night to be safer. The technology such as CCTV is also applied in reducing the future crime. In reducing the crime using the scientific method in adjusting the environment causing the changes in reducing the crime, Phrae community gather to establish the community enterprise producing the small furniture to help the volunteers in crime prevention by environment in the community to buy the equipment, CCTV, lighting to be used in the area to reduce the crime of properties in Sung Men Sub-district, Phrae Province. In 2012, there were 39 cases. In 2013, there were 17 cases. In 2014, there were 11 cases. The likeliness of crime reduction can be seen in the community area of Phrae Province. The good city planning will reduce the crime occurrence as well.

3. Design of residences: From the design of residences of community, there is the gathering of people in the community in adjusting the location of grass cutting once a month. This proves the care in houses of community people and the maintenance of houses to be always in good state. The residences can be designed by using the natural resources simply found and available in the community; teak wood, to make the house's fences for safety money saving, and for the security of community people. This is correspondent with the concept of Atlas (2013) explaining the Applications of CPTED in the Built Environment on the environment management risky to the crime. The CPTED consist of the venue environmental arrangement to have enough light that can deter criminals and adjustment of landscape to be seen clearly such as cutting down the evergreen trees to observe the surrounding area easily and not to hide the criminals. The concept is also similar to Nianwithoon (2010) studying the design approach to reduce environmental crime opportunities in urban neighborhoods. The model of urban dwelling that reduces crime, residential area, type of accommodations are proposed including environmental factors inside the community. This can be applied to the areas with similar environments in order to help increasing the efficiency in reducing crime opportunities. It is also consistent with the concept of Goldstein (1990) developing the concept of crime prevention by the environment as the safety measure that focuses on the design of community space and dwellings, crime prevention in design and location using proactive strategies in adjusting the environment in the area and design the place to fit the problem in the community.

Based on the concept of crime prevention by the environment, in Thailand, few researches are available. As a result, the researcher is interested in studying the factors of crime prevention by the environment in the community in Phrae Province which can be used as the guideline for continuous implementation. The theory of crime prevention by the environment by designing suitability environment focusing on the risk areas, city planning and house design must be appropriate for crime prevention such as roads in the village must be seen clearly. The shop buildings located on the road or in the alley must facilitate in stranger observation. The building should not turn back from the road. It will make the road looks blind. Having security guards, village checkpoint, street lighting, night lighting whether

inside and outside the buildings are the most effective factors in inhibiting theft and reducing the crime rate effectively.

Abstract environment dimension (human relations)

1. Arrangement of community activities: Arranging the community activities reflects the good relationship between community people on the important days, the religious days, and the cooperation in the local activities. There is also a community enterprise grouping in working together. This is in accordance with the research of Nukate (1995) on the factors influencing people's participation in crime prevention. In crime prevention, it is found that the activities of members of community organizations are related to the cooperation in crime prevention. It is also correspondent with the concept of Kruger, Landman, and Liebermann (2001: 89) giving the concept of crime prevention by the environment by adapting to the situations, participating in problem solving, and collaborating on decision-making in meetings, activities necessary for problem solving, and analyzing the stakeholder on crime prevention, and assessing the link to find solutions to problems. This is to target successfully by resolving the crime prevention issues. The indicators of success are collaboration in solving problems both short and long term. As a result of having community activities, the collaboration and community integration can be enhances to manage better environment in crime prevention.

2. Measure of alarming neighbors: The neighborhood alarming measure can help people in the community to cooperate in gathering the community people to plan together to create the common feeling and help to supervise and inform the clues in the areas to one another, activity of security surveillance, activity to help clean up, maintain, and manage the houses. This correspondent with the concept of Piamsomboon (2012: 22) states that the relationship of people in society is the crime prevention measure that requires community members to help observing in the area. The project of neighborhood alarm is organized by the committee responsible for crime prevention in the community by building relationships between community members. It can be seen as building good relationships between people and police and build the confidence in the performance of the police as well. Moreover, the concept of Cozens (2015) studied the crime prevention through environmental design (CPTED): Modern Perspective by participating in crime prevention through environmental space design as a strategy for crime prevention. There are activities to achieve effective goals. It is the crime prevention through environmental design effectively in reducing crime and reducing the fear of crime in the community.

3. Public inspector: As the community joins in being the volunteer patrols to see and secure the community people, the community people love their own living places. They can watch out for areas in the community to take care of security in the area. This is correspondent with the concept of Piamsomboon (2013) on the Theory of Crime Control Through Environment Design (CED) which cut the opportunity for committing crime in the environment. The public inspection measures are that the neighbors voluntarily turn around in the responsibility to help one another in the surveillance of the area near their houses in the. They can get acquainted with neighbors to help one another. The newcomers of community people will be facilitated. In addition, they will help inspecting the windows and doors. The electricity must be available to provide the light in the community. All of the community members will be taken care. When a suspected incident occurs, the volunteer will inform the local police or patrol police to give the information for further process. Moreover, it is in line with Reynald's (2010) concept studying the crime prevention using the Theory of Crime Prevention through Environmental Design (CPTED) as a tool for the protection of environment. The risky areas of the community will be monitored such as having security guard in the areas, parking area monitoring, etc., This will reflect the cooperation of community people in helping one another in the rotation to monitor the crime scene in the area as well.

Recommendations

According to the research results, the crime prevention model by environment in almost every issue contributes to the success of an agency's work. Therefore, in order to effectively prevent the crime by the environment of Thailand, the researcher has suggested to develop the prevention of crime by the environment as follows:

1. City planning: The city planning should be designed to reduce crime such as having only one entrance and exit to be able to monitor the scene and strangers in the community.
2. Design of dwellings: It should create measures to build houses with the clear architecture so that people can see clearly on the outsiders. There should be the maintenance of houses to always be available by cleaning, repainting, repairing windows and fencing, bringing in the natural resources available in the community to prevent crime in order to save money and prevent crime.
3. Community activities. There is a policy to create activities to build relationships and to promote harmony to encourage people in the community to create a sense of togetherness and help to supervise and provide the information such as sports activities, cultural activities of people in the area and turning out on security surveillance.
4. Neighborhood alarm: There should be the neighbor warning policy that is the relationship of people in the community to prevent crime by the environment by monitoring the safety to help monitoring in the risky areas and informing the behavioral clues to the police in litigation applying the technology and information obtained from Line or Facebook to the crime warning in the community.
5. Public inspector: It is important to establish a public inspection policy in all communities. In selecting volunteers for community surveillance, it must collaborate with police officers in the surveillance of volunteer officers in the community.
6. Define the crime prevention policy by environment to formulate the strategies to reduce the risks of crime can benefit either the police station, the community leaders, or people by strategically planning under the crime prevention strategy by the environment to promote personnel awareness on the policy and the direction of success of the organizations.

References

- Atlas, R. 2013. **21st Century Security and CPTED: Designing for Critical Infrastructure Protection and Crime Prevention**. 2nd ed. Florida: CRC Press.
- Clancey, G. 2010. "Crime risk assessments in New South Wales (Australia)." **European Journal of Criminal Policy Research** 17 (1): 55-67.
- Clancey, G., Fisher, D., and Lee, M. 2015. "The art and science of preparing crime risk assessment reports." **Crime Prevention and Community Safety** 17 (4): 270-290.
- Cornish, D. and Clarke, R. 1985. "Opportunities, Precipitators and Criminal Decisions: A Reply to Wortley's Critique of Situational Crime Prevention." **Crime Prevention Studies** 23 (16): 41-96
- Cozens, P. 2002. "Sustainable Urban Development and Crime Prevention through Environmental Design for the British City." **The International Journal of Urban Policy and Planning** 19 (2): 129-137.
- Cozens, P. 2014. **Think crime! Using evidence, theory and Crime Prevention Through Environmental Design (CPTED) for planning safer cities**. Perth: Praxis Education.

- Cozens, P. 2015. **Crime as an unintended consequence: Planning for healthy cities and the need to move beyond Crime Prevention through Environmental Design.** New York: Curtin Research Publications.
- Cozens, P., Saville, G., and Hillier, D. 2005. "Crime prevention through environmental design (CPTED): A review and modern bibliography." **Property Management** 23 (5): 328-356.
- Eklblom, P., Armitage, R., Monchuk, L., and Castell, B. 2013. "Crime Prevention through Environmental Design in the United Arab Emirates: A suitable case for reorientation?." **Built Environment** 39 (1): 92-113.
- Fennelly, L, and Crowe, T. 2013. **Crime Prevention through Environmental Design.** Oxford: Butterworth-Heinemann Publications.
- Goldstein, H. 1990. **Problem-Oriented Policing.** California: CreateSpace.
- Jampawan, W. 1996. **Approaches in city planning for crime prevention in the urban area of Bangkok.** Master Thesis, Chulalongkorn University.
- Jeffery, C. 1977. **Crime Prevention through Environmental Design.** 2nd ed. California: Sage.
- Kruger, T., Landman, K., and Liebermann, S. 2001. **Designing Safer Places: A manual for Crime prevention through planning and design.** Pretoria: Council for Scientific and Industrial Research.
- Piamsomboon, P. 2002. **Crime Control through Environmental Design.** Bangkok: National Institute of Development Administration.
- Reynald, D. 2010. "Guardians on Guardianship: Factors Affecting the Willingness to Supervise, the Ability to Detect Potential Offenders, and the Willingness to Intervene." **Journal of Research in Crime and Delinquency** 47 (3): 358-390.
- Royal Thai Police. 2006. **Development plan of Royal Thai Police B.E.2011-2020.** Bangkok. Royal Thai Police.
- Royal Thai Police. 2005. **Statistics of crimes.** Bangkok. Royal Thai Police.
- Salehi, E. 2012. "The impacts of environmental factors in crime occurrence and safety of Tehran's citizens." **Crime, Law and Social Change** 12 (4): 129-137.
- Welsh, B., Farrington, D., and O'Dell, S. 2010. **Effectiveness of Public Area Surveillance for Crime Prevention: Security Guards, Place Managers and Defensible Space.** Stockholm: Swedish National Council for Crime Prevention.