THE POTENTIAL OF APPLYING CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) PRINCIPLES IN MALAYSIAN RESIDENTIAL NEIGHBOURHOOD

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ABSTRACT

Crime Prevention Through Environmental Design (CPTED) is an approach aimed to reduce or eliminate crime opportunities by using elements of the environment namely natural surveillance, access control, territoriality and maintenance. In Malaysia, preventing crime through environmental design was introduced as one of the initiatives in the Safe City Program in 2004, thus, CPTED in Malaysia is still in its infancy. This paper examines the crime scenario in Malaysian neighbourhood particularly on crimes in residential property. It looks at CPTED principles and reviews its potentiality in the planning of Malaysian residential neighbourhood.

INTRODUCTION

Crime remains an endemic problem in Malaysian urban communities. The Malaysian Quality of Life Report 2004 states that although the Malaysian Quality of Life Index (MQLI) had improved during the period from 1990 to 2002, it had recorded a downward trend in its public safety index. The Public Safety Index, one of which is measured by crime per thousand population shows that the crime rate has increased from 3.8 in the year 1990 to 6.2 in the year 2002. In Malaysia, apart from traditional policing, the Ministry of Housing and Local Government has adopted the safe city initiatives while the public has taken steps to increase security through measures such as gated and guarded housing. Although the crime incidences have been significantly reduced in 2010, it remains one of the major concerns of the government. So much so that crime reduction becomes one of the areas to be addressed under the National Key Result Areas (NKRA). This research examines crime in Malaysia context in particular property crime. It will first discuss the general crime scenario in Malaysian residential neighbourhood followed by a review of CPTED principles. The final part of the paper examines the potential of applying CPTED in local residential neighbourhood.

Malaysia Crime Statistics 1980-2004 shows that 90% of all crimes reported were related to crime property (Amar Singh Sidhu, 2005) Resident burglary occur at stand alone residences where expatriates communities are common target. Some burglars have entered the residences when occupants were still at home and have threatened the occupants with weapons. As in any burglary, criminals usually hit soft targets with obvious vulnerabilities and/or with valuables in plain view. Gated apartment complexes with 24-hour guards have a much lower burglary rate than other residential units, and apartments are burglarized less often than stand-alone residences. In relation to socioeconomic conditions, crime rate was relatively low in an area where there were many detached houses, where residents shared high level of social identity, and where residents were financially well off.
The notion of CPTED appeared in 1971 book by criminologist and sociologist C. Ray Jeffery. The theory is based on an argument that most crime events are associated with opportunities created by environmental design. CPTED approach is developed on the basis of reducing opportunity, which aims to manipulate the built environment in order to influence users behavior that will reduce crime and fear of crime (Cozens, 2007).

The strategies employed in this approach are: natural surveillance, natural access control, territorial reinforcement and maintenance (Cozens, 2002).

i) Natural Surveillance - "See and be seen" is the overall goal when it comes to CPTED and natural surveillance. A person is less likely to commit a crime if they think someone will see them do it (Soenssen, 2003). Burglars avoid targets that are clearly visible from neighbouring properties or the public street, and are attracted to targets that afford coverage or concealment via walls, poor lighting or trees, hedges and other plantings (Coupe and Blake, 2006)

ii) Natural Access Control - Natural Access Control is more than a high block wall topped with barbed wire. CPTED utilizes the use of walkways, fences, lighting, signage and landscape to clearly guide people and vehicles to and from the proper entrances. CPTED principle also intend to direct the flow of people while decreasing the opportunity for crime. Pedestrian connectivity for example, appeared to have increase the vulnerability to opportunistic offenders (Armitage et al, 2010). However, there are some arguments saying that the present of pedestrian may also actually encourage and provide other targets for crime for example pick-pocketing (Cozens, 2005).

iii) Territorial Reinforcement - Creating or extending a "sphere of influence" by utilizing physical designs such as pavement treatments, landscaping and signage as well as creating familial among neighbourhood and sense of commonality that enable users of an area to develop a sense of proprietorship over it is the goal of this CPTED principle. A study shows that areas with high degree of emotional attachment to the neighbourhood create less crime incidences (Greenberg and Rohe, 1984)

iv) Maintenance and Management - CPTED and the "Broken Window Theory" suggests that one "broken window" or nuisance, if allowed to exist, will lead to others and ultimately to the decline of an entire neighborhood. Cozens (2005) also mentioned that a well-maintained and appropriately used environment can signify that a sense of “ownership” and proprietary concern exists within the community. In addition, residents feel safer living in an area with high quality housing (Austin et al, 2002).

Figure 2 simplified the idea in a graphic manner. As a place-based crime prevention strategy, crime prevention through environmental design (CPTED) emerged as an independent theory and is now increasingly fashionable and is being implemented worldwide (Cisneros, 1995). Although the effectiveness of CPTED in reducing crime is still questionable, its principles has been used as
guidelines for neighbourhood planning in cities such as Singapore, Toronto, Norwood and Virginia.

![CPTED Diagram](image)

Figure 2: First-generation CPTED – the key concepts
Source: Moffat (1983, p23) in Cozens et.al 2005

**CPTED IN MALAYSIA**

Like other countries, crime prevention in Malaysia – traditionally and generally – is perceived to be the realm of the police. It is their responsibility to make places safe thus, other means that could prevent future crimes are never considered. That is why crime prevention planning has been understated in traditional planning and urban design. Most people did not consider the linkage between the design and management of the physical environment and crime prevention. In other words, rather than constantly using corrective measures to curb street crimes, safety elements should be incorporated into development and building layout plans and designs to deter criminal behavior.

Only in the last decade, believing that “prevention is better than cure”, the Department of Town & Country Planning, Ministry of Housing and Local Government, implemented a programme called “Safe City Programme” in 2004, following a directive from the Cabinet to ensure cities and towns are safe from crimes. However, it was only in 2010 that the Department of Urban and Country Planning Malaysia came out with the Implementation Guide for CPTED. The CPTED Guidelines is to be applied at planning, design and construction stage of any development. Various components of CPTED is encouraged to be considered in the layout design, building plan, engineering plan, landscape plan and Certificate of Completion and Compliance (CCC). CPTED elements are incorporated in seven components, namely, Layout Design, Access and Pedestrian Walkways, Landscape and Element of Urban Design, Car Parking, Lighting, Security Devices and Management and Maintenance.

Nevertheless, CPTED principles have been applied on voluntary basis in several residential development in Malaysia. Although not full fledged application, several components of CPTED find their way in the local housing schemes (Toh Paik See, 2009). Table 1 shows the average percentage of CPTED application of three residential neighbourhoods Johor Bahru District, Malaysia.

<table>
<thead>
<tr>
<th>Principle</th>
<th>Average Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Surveillance</td>
<td>62.50%</td>
</tr>
<tr>
<td>Natural access control</td>
<td>70.37%</td>
</tr>
<tr>
<td>Territorial Reinforcement</td>
<td>55.00%</td>
</tr>
<tr>
<td>Target Hardening</td>
<td>58.80%</td>
</tr>
</tbody>
</table>

Source: Modified from Toh Paik See (2009)

These three neighbourhoods were relatively new area, mostly completed in early 2000. The layout plans of these neighbourhoods have more diverse arrangement i.e, loops, cul-se-sac and curvilinear street design as encouraged by CPTED. They have also considered several principles of CPTED for examples natural surveillance and natural access control. Under the principles of natural surveillance, most key elements are employed including land use compatibility, permeable fencing, shaded window and secure public places. For access control, elements include safe pedestrian route, minimum use of back lanes, safe access, multiple exit points and clearly indefiable, point of entry. Territorial reinforcement uses community facilities and tree planting in residential areas. However all the surveyed housing schemes did not have elements such as using passing vehicular traffic as a surveillance asset, integrated security screens and bars as design elements, appropriate signage, amenities placement to attract users and installation of traffic management elements.

By implication, the application of these CPTED principles indicates that there are positive impacts on crime incidences in residential area. Compared to the surveyed neighbourhoods, earlier housing schemes especially those constructed in 1970s have on average , higher crime rates. has started to implement CPTED initiatives in a way to create safer living environment. The layout of these housing schemes tend to be linear to enable higher density in order to accommodate rapid increase of urban population then while elements of crime prevention were unconsciously incorporated but not intended. Using the number of crime incidences from June 2010 to June 2011 per 1000 people for each neighbourhood, the rate of crime can be compared between neighbourhoods. Table 2 below shows the average crime rate of neighbourhoods in Johor Bahru City Council area. Neighbourhoods of 1970s experienced higher crime rate than newer neighbourhoods although it declined for neighbourhoods completed in later years which can be explained by the location which is further away from the town centre.


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From the crime rate, implementation of CPTED principles does give impact on crime incidences in neighbourhood area. Arguments on social relationship among residents rise when residents in older neighbourhoods show better acquaintance towards each other however experience higher crime incidences. The new neighbourhoods which implement more CPTED principles show lower interaction between the residents and yet lesser criminal incidences happen in the area. Therefore, CPTED has a good potential to be applied in neighbourhood planning but should include strategies on strengthening the local ties among the residents. Further study is however required to see the effect of these measures on crime rate as well as fear of crime among residents.

**CONCLUSION**

The theory of crime prevention through environmental design is based on one simple idea -- that crime results partly from the opportunities presented by physical environment. This being the case it should be possible to alter the physical environment so that crime is less likely to occur. Despite the evidential support for CPTED, it has received a fair share of criticisms which limits its application among others crime by irrational offenders, socio-economic and demographic dynamics which may limit CPTED effectiveness and over reliance on target hardening measures (Cozens et al 2005). Nevertheless CPTED principles have been gradually incorporated into planning process and research is continually being done to improve its application.

**Acknowledgements**
The authors acknowledge the funding support for the research for this work provided under the Research University Grant Program- Q.J13000.7121.00152.

**REFERENCES**


Cozens P.M., Saville G. and Hillier D. Crime prevention through environmental design (CPTED): a review and modern bibliography. *Property Management.* 23 (5) 328-356. 2005

**Table 2 : Average Crime Rate of Neighbourhoods in Johor Bahru City Council area According to Years of Completion**

<table>
<thead>
<tr>
<th>Year of Neighbourhood Completion</th>
<th>Average Crime Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970s</td>
<td>8.71</td>
</tr>
<tr>
<td>1980s</td>
<td>3.47</td>
</tr>
<tr>
<td>1990s</td>
<td>3.94</td>
</tr>
<tr>
<td>2000</td>
<td>3.16</td>
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