

THE CONTRIBUTORY ELEMENTS IN NATURAL ACCESS CONTROL OF CRIME PREVENTION IN RESIDENTIAL HOUSING

***Halmi Zainol¹, Siti Rasidah Md Sakip², Muhamad Ferdhaus Sazali³,
Hafizah Mohd Latif⁴ & Noor Ashikin Mohamad Bahari⁵**

***Corresponding author**

^{1,3,5}Program of Town and Regional Planning,
²Program of Landscape Architecture² & Program of Building,
Department of Built Environment Studies and Technology, Faculty of
Architecture, Planning and Surveying, UiTM Perak Branch,
Seri Iskandar Campus

halmizainol@gmail.com, sitir704@uitm.edu.my,
ferdhaus@uitm.edu.my, hafiz017@uitm.edu.my
noorashikin@uitm.edu.my

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ABSTRACT

Various criminal problems surround us leading to discomfort in a residential area. Thus, this study focuses on how the contributory elements in natural access control can solve the problems of crime based on Crime Prevention Through Environmental Design (CPTED). The study aims to examine the layout of housing design that can cause crime in neighbourhoods area. Guideline and concepts of CPTED can improve the quality of life, reduce or prevent crime, and create a safe, secure living environment. The objectives are to identify the elements of CPTED that are related to natural access control, examine the contributory that influence based on natural access control in housing residential, and propose the characteristics of natural access control. Data collection was carried out by using observation and questionnaires. One hundred and thirty-one respondents have participated in this research. The study has found a lack of pedestrian walkways, good lighting, and moderate landscape elements contributing to natural access control

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INTRODUCTION

In the wake of the rapid urbanization in a developing country like Malaysia, various criminal problems surround us without our knowledge leading to discomfort in a residential area. In addition, most migrants are poor and unemployed. Life's insecurities and inadequacies in meeting the goals of living necessities led these groups to engage in criminal activities.

Moreover, the general crime rate in Malaysia is considered average, and a rough crime against exiles is moderately exceptional. The primary classifications of crime are neediness crime, open request crime, and violent crime. One that identifies with a private crime is property crime. Property crime incorporates those offences, including the loss of property during which there is no utilization of viciousness by the culprits. There are a few types of crimes that fit this characterization. They consolidate housebreaking and robbery by day, housebreaking and burglary around evening time, theft of vehicles, and finally different types of burglary. The entirety of this property crime occurs in a local location. This property crime gets proof from the Malaysia Crime Statistics 1980-2004 which shows 90 percent of all crime details were identified with property crime Sidhu (2005).

The results show the state with the highest crime index in Malaysia is Wilayah Persekutuan Kuala Lumpur. Based on the Crime Index ratio per 100,000 population, Kuala Lumpur recorded the highest (716.9) and Selangor (408.6) in 2017 (DOSM, 2019). The site area of this study is the housing neighbourhood area in Perak. This is because Perak has the highest population which is 2.49 million people in the northern area and also abounded state between Selangor. The crime index ratio at Perak is 213.6 people in 2017. A few cases were reported by the newspaper Mstar (2017) regarding crimes in the Taman Cempaka neighbourhood in Ipoh, and it shocked the whole country. The results show the highest crime index in the year 2017 by district in Perak is the Ipoh District which involved 450 people for violent crime and 1631 people for property crime all total crime index is 2063 people.

The factor of crime is the population and the function of the district. The population in the Ipoh District is the highest, which is 673,318 people and are more than the Pengkalan Hulu District, which is 16,160 people. The function of the Ipoh District is the Capital of Perak State. The newspaper Mstar reported a few cases regarding crimes in the Taman Cempaka neighbourhood in Ipoh, and it shocked the whole country. On Wednesday, 22nd of March 2017, in Ipoh, police raided a house in Taman Cempaka and seized 69kg of cannabis found in a Sports Utility Vehicle (SUV).

Crime is a complex phenomenon with various cumulative effects on finance and psychology, such as the loss of property, insurance, justice, victimization, and security Andresen & Jenion (2008). All of the crime happens because of human behaviour itself. Living in the era of rapid economic growth with the lowest monthly wages tempts desperate people to commit the crime without hesitation and worry about the safety of others. The concept of CPTED in housing neighbourhoods is important and should be applied in a residential area because it can prevent crime and reduce a few crime issues in this country.

This research will assess the usage of the safe city idea in the urban neighbourhood regions of Ipoh as well-known crime prevention through environmental design (CPTED). Ipoh is one of the new cities experiencing progression in Malaysia that experience rapid urbanization and migration. Accordingly, the estimation of the crime rate in Ipoh has been recorded as 30 percent of the crime rate in 2013 PDRM (2013). All these physical structure issues are encouraging criminal activity such as street infringement and infringement against individuals and properties. All these crime issues in this way make prosperity an urgent issue which needs to be dealt with.

Cozens & Sun (2019) CPTED is based on the idea that "detailed physical environment design can effectively influence human behaviour from crime and reduce the fear of crime and crime incidents while improving the quality of the environment and life." Thus, one of the principles of CPTED is Natural Access Control. Natural Access Control depends on entryways, walls, bushes, and other physical components to keep undesirable people out of a specific spot on the off chance that they don't have an authentic explanation behind being there. In its most rudimentary structure, control can be accomplished in singular abodes or residential areas by utilizing

sufficient locks, entryways, and window hindrances.

This study focused on natural access control elements that can improve crime. Cozens & Sun (2018) stated natural access control focuses on reducing opportunities for crime by limiting or denying access to crime targets by promoting an increased perception of risk in offenders. The focus of the study is to expose the layout of housing design that can cause crime in neighbourhood area. By following the rule and concept in CPTED, expectations can improve personal satisfaction, decrease, avoid crime, and improve well-being and certain living conditions for future lodging advancement.

LITERATURE REVIEW

Crimes, for example, robbery, possessing or selling drugs, loot, execute, and others that are illegal (Dewan Bahasa dan Pustaka Fourth Edition 2005). Crime occurs if three components are specifically alluring, capacity, and opportunity, known as the "crime triangle" (Royal Malaysian Police). Crime can be divided into two (2) classifications which are violent crime and property crime. Violent crime involves acts that represent a risk and damage to the workforce. This kind of crime includes a threat to the property just as brushing, pocket-ins, robberies during the day, around evening time robbery, vehicle burglary, and different sorts of theft as property.

According to Jung et al. (2017), the importance of physical elements that offer engaging visual experiences, diverse-use development that accommodates social interactions, buildings and public spaces that are open to streets, and the presence of trees and sitting areas. It is also an important element in urban society (Ferdhaus, Zainol, Rahim & Muhammad, 2021). Newman (1972), in the hypothesis of faultless space, proposes an open space to separate into little rooms to make it simpler to control the population in the regional area that gives a decrease in crime.

In addition, there are many methods to prevent a crime: namely, the legal system or the enforcement of policed control systems based on Dantzker & Robinson (2002), social approaches by Bennet, Holloway & Farrington (2006), and other techniques in crime prevention. Among

these crime prevention methods, CPTED methods have a stronger effect in influencing fear towards crime.

This study was focused on natural access control elements that can reduce crime. Cozens & Sun (2018) stated natural access control focuses on reducing opportunities for crime by limiting or denying access to crime targets by promoting an increased perception of risk in offenders. By following the rule and concept in CPTED, expectations can improve personal satisfaction, decrease, avoid crime, and make well-being and certain living conditions in future lodging advancement.

Concept Of Crime Prevention Through Environmental Design (CPTED)

Cozens & Sun (2018) CPTED is based on the idea that "detailed physical environment design can effectively influence human behaviour from crime and reduce the fear of crime and crime incidents while improving the quality of the environment and life."

The strategies of natural access control and surveillance over criminals focus on risk perception and would be faced with space. There were four principles of CPTED.

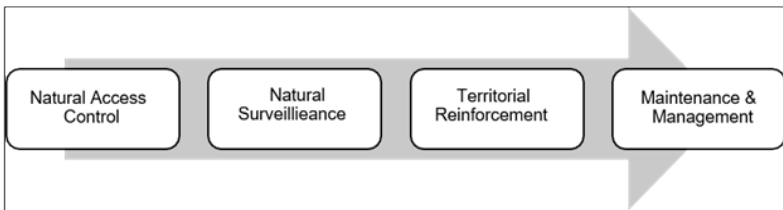


Figure 1. Four (4) Principals of CPTED

Natural Access Control

Natural Access Control depends on entryways, walls, bushes, and other physical components to keep undesirable people out of a specific spot on the off chance that they do not have an authentic explanation behind being there. Access control procedure utilizes physical structure components as avoidance strategies, for example, entryways, walls, plant components to control the passage of outsiders or untouchables to the local territory.

However access control is more difficult on streets and areas that are entirely open to public use, there are other techniques for controlling access in these circumstances. These barriers may appear in signs, paving textures, nature strips, or anything that announces the integrity and uniqueness of an area. The idea behind a psychological wall is that if a target seems strange or difficult, it may also be unattractive to potential criminals. According to Sohn (2015), the analysis of the street layout of developments in the UK indicates that the safest road layout is the true cul-de-sac (with the least connectivity, followed by the through road and the leaky cul-de-sac).

Natural Surveillance

Surveillance or the placing of legitimate "eyes on the street" increases the perceived risk to offenders. The characteristic survey is centred around the position or area of windows to enable a house review to the outside. Thani, Hashim & Ismail (2016) stated reconnaissance methodology is partitioned into two, be specific characteristic observation and specialized checking, for example, Close Circuit Television (CCTV). The reason for the installation of CCTV is to improve the capacity of the general society to watch lawbreakers.

Territorial Reinforcement

This is related to the neighbourhood's sense of "pride of place" and territorial reinforcement. The frailer a territory, the more probable it is to pull in undesirable exercises. With the subdivision of room into various degrees of open/semi-public/private zones and increasing expectations and desires, the degree of social antagonism would decrease. Thus, the CPTED idea depends on incorporating components' target solidifying' in the earth will make it hard for crooks to enter the territory of the person in question. According to Jensen and Anderson (2004), such a circumstance would prompt the hoodlums to move to higher crime territories to encourage their entrance into predators.

Maintenance and Management

The main purpose of clarity of boundaries is to show ownership of an area. Marking the boundaries of public and private rooms can be accomplished using physical elements such as fences, gates, landscapes,

etc. Thus, people naturally protect a territory that they feel is their own and have a certain respect for others.

Natural Access Control

The natural access control concept can be applied to existing less secure development and prone to crime. Several studies conducted on victims abroad have shown that high crime levels are a major factor in increasing crime risk. According to Peeters & Beken (2017), the focus on highly accessible streets should reduce the ease of access and less accessible roads in the neighbourhoods. New residential developments offer an obvious opportunity to build protective characteristics into the environment from the beginning, so building guidelines should specify that the houses and environment must be designed in a way that optimizes burglary prevention.

The layout plan for natural access control in residential housing such as each neighbourhood unit ought to have a mobile separation of 400 meters from the area. Because of the high calibre of life in the area, it must make a walk capable network and upgrade network attachment and improve personal satisfaction among the individuals in the area. Then, avoid sideways, secluded, and caught zones, for example, circular drive, and ought to be straight for close to 75 m.

First, sharp curves and sharp angles should be avoided. Component common access control in the CPTED should look at the very least 20 feet for the inclining twist. This is for existing advancement, and wellbeing hardware should be given, such as security mirrors, traffic signs, and others. Scene plants that secure the view at sharp edges ought to be pruned. Second, road organizational frameworks need to have an unmistakable perspective. Third, limit access to the back rear entryway and walkway (existing lodging improvement). Lastly, provide a person on foot access to private, open, and network territories 1.52 meters (5 feet) wide and unhindered by any structure.

Improving physical environments through CPTED elements is of little use in crime prevention. Aspects of natural access control in facilitating community activities among residents are important in reducing crime rate (Dahee, Seung-wan & Yongwook, 2019). Implementing the element

of natural access control can lead to many benefits that can improve the quality of life. It is the direction of individuals to and from a space utilizing the key position of ecological signals or boundaries.

Elements in Natural Access Control

There are a few factors that have been distinguished as the driver of the event of road crime in the region dependent on regular access control segments which include:

Routes and Accessibility

According to Lynch (1981), the course is the virtual channel that encourages individuals' development. In the city, there is a system of significant streets and a system of little lanes. In a structure, there are a few ways to associate them with one another. The city expressway organizes a system of courses for the entire city.

Access and Walkways

Access control of the course is indispensable for security in the urban neighbourhood. People on foot regularly meet in open regions (open spaces) and remote regions (private) by empowering tiny back streets with helpful exercises to keep distance from turning out to be problem areas of crime scenes. Uses of barrier components in the middle of the street with a passerby are the fundamental reason for guaranteeing security in urban neighbourhood territory while diminishing the opportunity of road lawbreakers to perpetrate crimes.

Landscape and Urban Design Elements

Inadequate finishing of an urban structure is the fundamental factor that prompts the crime to happen. Thus, it will be encouraging crime to happen when the elements of finishing and urban plan components are not completely working. Initially, inadequately kept up arranging in the local location can prompt crime, for example, grab, robbery, theft and vehicle burglary. Furthermore, urban structure components must be a steady capacity to the CPTED in the urban neighbourhood zone. For instance, the open space is the zone of a hub for the living arrangement. When the available

space does not completely work and is surrendered, it will prompt social issues and crime.

Lighting

Poor lighting in lodging neighbourhood regions may likewise advance the event of road crime, particularly around evening time. The format of open lighting offices is basic in making a protected domain. Sufficient lighting to avoid lawbreakers perpetuating road crime and increment customer trust in the utilization of the territory whenever, including around evening time.

Safety Features

The arrangement of security gear is fundamental in a sheltered city. The absence of the structure of these security components will give a chance to widespread crime. Wellbeing gear, for example, short circuit TV (CCTV), crisis button (alarm button), mirrors, security, and cautioning signs ought to be given on a person on foot walkway, crossing territory, open spots, the prominent and problem areas of potential crime just as regions that have the observation of common frail.

The Guideline of Layout Plan in Natural Access Control

The layout plan for natural access control in residential housing as shown in Figure 2 whereby each neighbourhood unit ought to have a mobile separation of 400 meters from the area, and format ought to be spotless and perfect, making a system of an independent person on foot walkways that are mechanized, constant and coordinated. The systematic separation creates an easily accessible network and enhances personal satisfaction among the individuals in the area.

Second, avoid sideways, secluded, and caught zones, for example, circular drive, and ought to be straight for close to 75 m. This necessity does not cause strife with the arranging measures of 150 m and the Uniform Building Code (UKBS) prerequisites of 91.4 m for rough terrain. This can keep away from open conveniences, improve normal observation, improve the nature of the earth, and make a feeling of having a place with the planet.



Figure 2. Layout Plan for Natural Access Control

Source: David Prior, (2019)



Figure 3. Space of CPTED Guidelines

Source: David Prior, (2019)

Third, Natural Access Control in a layout plan such as sharp curves and sharp angles should not be included. Component common access control in the CPTED idea cannot make sharp turns, and there ought to be a removal of at the very least 20 feet for the inclining twist. While road organizes, frameworks need to have an unmistakable perspective. This upgrades the predictability of the street and improves the street clients' normal observation of crime episodes. Besides, limit access to the back rear entryway and walkway (existing lodging improvement). By restricting

access in introducing walkways and transitory boundaries, rails can improve the wellbeing of occupants in case of a home accident and restrain engine vehicles get to. Then, provide a person on foot access to private, open, and network territories 1.52 meters (5 feet) wide and unhindered by any structure. A person on foot walkways ought to be isolated from mechanized streets that can counteract grab crime.

All these natural access control guidelines will help enhance the safety in that area to prevent criminal activities. Thus, the implementation of natural access control in early steps could improve the life and wellbeing of residents in the neighbourhood.

RESEARCH METHODOLOGY

This study is to examine the layout of housing design that can cause crime in neighbourhood area. This research methodology was adopted to enable the researcher to attain the research objectives. This part is defined as a systematic way to solve a problem for the researcher. For this investigation, the information was gathered through the survey and questionnaire. This study comprises four (4) processes of procedure required. Some stages are arranged: the foundation of objectives, targets, and extent of the investigation, second stage assortment information, third stage examination and discoveries, the last stage is proposals.

Stage 1: The Establishment of Goals, Objectives, and Scope of Study. This stage involves identifying issues and problems associated with the crime rate in the site area at Ipoh Perak. Goals and objectives are formed after the identification of issues and concerns raised. This study's plans, objectives, and scope serve as a guide to ensure that researchers who conducted the study do not stray from the main goal.

Stage 2: Data Collection. This stage involves the collection of information using the research method such as questionnaires and observation.

Stage 3: Analysis and Findings. All data and information gathered will be analyzed and synthesized. A detailed analysis will be conducted

using methods specified in the processing and analyzing of primary and secondary data. The result of the research presented in the form of written statements, charts, diagrams, and tables are not directly detected findings. Sulaiman (2004) and Elfil & Negita (2017) outlined that the researcher must explain the data collection methods. The statistical technique, which includes descriptive or inferential, should be described in an analysis. At the end of the findings, one must come out with a dissertation or a thesis.

Stage 4: Recommendations and Conclusion. Lastly, after the analysis and findings are carried out, the recommendation and conclusion that will solve the issues of the study are going to be carried out. All the proposals will be based on the analysis and findings of the study. The recommendations and conclusion are going to be in the form of a strategy that will overcome the issues stated. A detailed and relevant solution should be clearly outlined to indicate that the research has achieved amending.

Figure 4 below is the structure of the focus conceptual framework on natural access control direction during the conduct of this study. There is road design focused on continuity of pedestrian walkway, back lane, and road design, with fences which provided the automatic barriers, lighting, the landscape was in good maintenance and are considered safety features

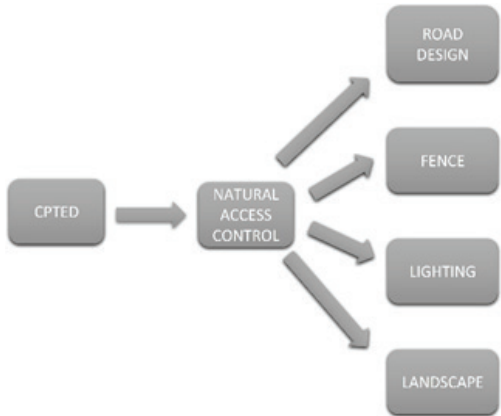


Figure 4. The Conceptual Framework

Source: Adapted from Hedayati, (2009)

DATA ANALYSIS AND FINDINGS

The respondents' profile involved in this study is summarized in Table 1. The mean age of respondents was 30.8 years, whereas the oldest age of participants ranged from 21-30 years which is 67.9 percent. The majority race group is Malay which is 76.3 percent. Furthermore, based on the analysis shown, the highest number of respondents who stay in neighbourhoods is 42.7 percent which is more than one year. This is due to the learning period of the students living in Taman Cempaka if the class is conducted. Residents who live for more than five years are less than 8.4 percent. This is because many homeowners are already renting out their homes to new tenants, especially students.

The majority race group is Malay which is 76.3 percent and are more than Indians, which is 7.6 percent. The study area is the old housing with a Malay majority population. The mean for a household is 4.6, which is 61.1 percent of respondents 4-6 households. This shows that unstable economic conditions have led to a shortage of families.

The respondents mostly stayed in a low-cost terraced house, which is 66.4 percent more than those who remain in medium-cost terraced, which is 33.6 percent. This result has shown the study area is an affordable area for students and youths. This is because many older people have migrated to find more comfortable homes, and many have made their home in Taman Cempaka a rental home for students.

Table 1. Respondents Profile

Residents of Taman Cempaka Zone A, B, C & D		Frequency (n=131)	Percentage (percent)
Gender	Male	69	52.7
	Female	62	47.3
Age Group	21-30	89	67.9
	31-40	14	10.7
	41-50	25	19.1
	51 >	3	2.3
Mean	30.76		
Race Group	Malay	100	76.3
	Chinese	21	16.0
	Indian	10	7.6

Occupation	Student	40	30.5
	Government	5	3.8
	Private Worker	34	26.0
	Self-employed	38	29.0
	Unemployed	12	9.2
	Retired	2	1.5
Year of stay in neighbourhoods	<1 Year	13	9.9
	>1 Year	56	42.7
	1-4 Year	51	38.9
	>5 Year	11	8.4
Mean	3.46		
Type of House	Low-Cost Terraced	87	66.4
	Medium-Cost Terraced	44	33.6
Ownership	Rent	77	58.8
	Owner	54	41.2

Source: Author

According to the sense of security at Taman Cempaka, most respondents agree that the hot time area is concentrated in a residential area which is 51.9 percent at a moderate level. These shown respondents did not care much about the sense of security in the study area. This may be due to a lack of exposure to safety education in neighbourhoods (refer to Figure 5).

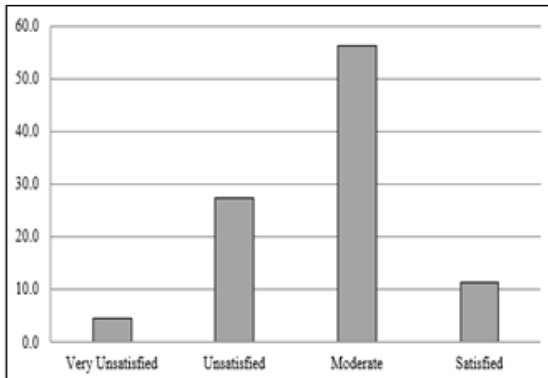


Figure 5. Level of Natural Access Control Satisfaction

Source: Author

Meanwhile, Table 2 shows that the issues of road design in Taman Cempaka were rated highest in the level of dissatisfaction (mean=2.08, 2.34, and 2.35). The result in the study area showed a problem with natural access control: a fence, back lane, and lighting. Results have shown respondents' dissatisfaction with the existing natural access control answer to the objective of this study.

Table 2. Level Satisfaction Road Design on Natural Access Control

Road Design Satisfaction on Natural Access Control	N	Minimum	Maximum	Mean	Std. Deviation	Rank	Remarks
Satisfaction of automatic fence	131	1	4	2.08	.886	1	Unsatisfied
Back lane	131	1	4	2.34	1.134	2	Unsatisfied
Lighting in main entrance	131	1	4	2.35	.992	3	Unsatisfied
Design of the street	131	2	4	2.90	.618	4	Moderate
Main Entrance	131	2	4	2.91	.601	5	Moderate

Source: Author

Table 3 shows that 63.4 percent is a moderate level for the main entrance and entry point in Taman Cempaka. Most of the respondents give an average for road design which is 61.1 percent, and some of the respondents are very dissatisfied or very satisfied. Most respondents stated that 34.4 percent were dissatisfied with the back alley, and 16.0 percent were dissatisfied. The majority of respondents are dissatisfied with the automatic fences and back alley because they cannot use them and are not provided in their area. This indicates that access to the neighbourhood is easy to navigate. In unsupervised communities, it is easier for people to enter their homes. This analysis result shows automatic fences are not provided, and the back alley is the problem because the current condition does not have maintenance.

Table 3. Level Satisfaction of Road Design

Road Design		Frequency (n=131)	Percentage (percent)
The satisfaction of the main entrance	Very Unsatisfied	-	-
	Unsatisfied	30	22.9
	Moderate	83	63.4
	Satisfied	18	13.7
	Very Satisfied	-	-
The satisfaction of back lane	Very Unsatisfied	45	34.4
	Unsatisfied	21	16
	Moderate	41	31.3
	Satisfied	24	18.3
	Very Satisfied	-	-
The satisfaction of automatic fence	Very Unsatisfied	42	32.1
	Unsatisfied	40	30.5
	Moderat Satisfied	45	34.4
	Very Satisfied	4	3.1
	-	-	-

Source: Author

Besides, the issues of the pedestrian walkway are lack of safety features along the road, which is the highest rank with (mean=2.03) in the unsatisfied level. But the lowest grade is provided of bollards which is (mean=2.66) respondents had rated moderate level. This analysis shown in Taman Cempaka does not have enough contributory to natural access control. In natural access control, safety features on pedestrian walkways are very important for people's quality of life. Every pedestrian needs to have safety elements.

Table 4. Natural Access Control Elements on Pedestrian Walkway

Natural Access Control Elements Satisfaction on Pedestrian Walkway	N	Minimum	Maximum	Mean	Std. Deviation	Rank	Remarks
Safety feature along the road	131	1	4	2.03			
Provision of bicycle lane	131	1	4	2.24			
Continuity of pedestrian walkway	131	1	4	2.34			
Pavements on pedestrian walkway	131	1	4	2.39			
Provided of bollards	131	1	5	2.66			

Source: Author

Figure 6 shows that the highest criminal area is a residential area that is 69.47 percent more than the school area, which is 3.82 percent with a different 65.65 percent. The result showed a crime hot spot in Taman Cempaka focus on the residential area.

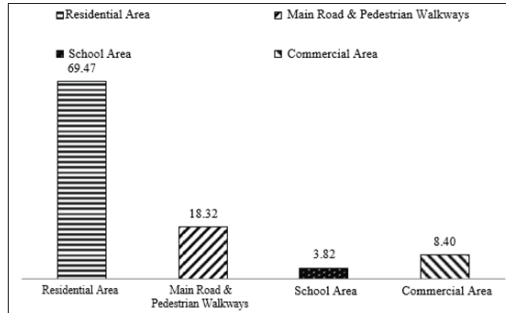


Figure 6. A Crime Hot Spot

Source: Author

Based on the analysis, the result findings from the questionnaire and observation show there are existing natural access control elements but which do not contribute to crime prevention. Based on the study, the lack of safety element in the pedestrian walkway, which is 67.90 percent, was not provided. The design features also are the old design and easy to be access crime. This shows the observation plan and 69.5 percent hot spot criminal area in a residential area.

Meanwhile, based on the analysis, the result findings from the questionnaire and observation shown there do not have contributory that influence based on natural access control in residential housing because there are inadequate elements of safety features 43.5 percent was very dissatisfied and lack of prevention to the crime based on natural access control which is the automatic fence and back lane are main issues (mean=2.08-2.35). The study is on an old design layout, so there must be an improvement in terms of safety features elements such as providing the automatic fence, upgrading the pedestrian walkways, and others.

In sum, the examination found that the physical angles applied to battle crimes ought to be enhanced and looked after well. Natural access control is essential to battle crime in Taman Cempaka. Enhancements in material

grades that can influence the solace and security of the populace ought to be strengthened by social connection decreases. Great social communication will positively affect neighbourhoods via doing exercises or projects that can bring issues to light about the crime in Taman Cempaka.

DISCUSSION

The study showed how to implement the natural access control elements in Taman Cempaka to improve the quality of life and prevent crime. Proposed a community program in every zone of Taman Cempaka, improved the road design, landscape, lighting, and upgraded a new fence. This is due to the result findings from the questionnaire and observation showing a lack of contribution from the existing natural access control.

Figure 7 shows the observation survey of a crime hot spot plan of Taman Cempaka Ipoh. The area has a few crime hot spots in traffic conflict, abandoned houses, non-functional streets. The main entrance is in good condition, but there is a road conflict, a junction of four. It will cause a few problems, for example, harm the driver while driving and complicating the pedestrian walkways across the road since there are no traffic lights, zebra crossing, or bridge.

The pedestrian walkway in the school area is very poor because it does not have continuity. It shows a lack of maintenance, and people cannot use them (refer to photo 1). While the condition of housing there shows abandoned houses at a few places (refer to photo 2). It impacts the surroundings and increases crime because the abandoned house is the usual place for people to take drugs. Besides, abandoned houses are also a common breeding ground for wild animals, such as snakes.

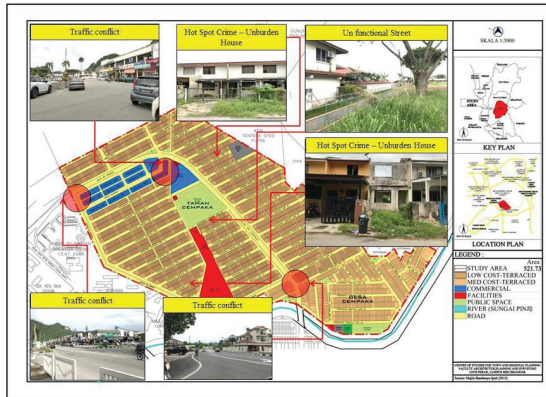


Figure 7. Observation Survey Hot Spot Crime Area Plan

Source: Author

The photos show the real situation at Taman Cempaka, Ipoh. There are a few photos that include the problem of pedestrian walkways, abandoned houses and traffic conditions.



Photo 1. Pedestrian Walkways in the School Area



Photo 2. Housing Condition

Source: Author

Photos 3 and 4 show the condition of the playground and open space condition. The playground is near the road, and there are no safety elements. It could be dangerous for people, especially children playing there. The open space condition has no maintenance, and it looks poor. T

he findings from the previous section show that the majority of residents of Taman Cempaka were students. This is because many older adults have moved out to find more comfortable homes, and many have made their homes in Taman Cempaka a rental home for students.



Photo 3. Condition of Playground



Photo 4. Condition of Open Space

Source: Author

Meanwhile, respondents' sense of security at Taman Cempaka, the majority of respondents agree that the crime hot spot area is concentrated in a residential area at a moderate level. It shows respondents did not care much about the sense of security in the study area. This may be due to a lack of exposure to safety education in neighbourhood.



Figure 8. Illustration of Improvement in Natural Access Control

Source: Author

Natural access control is the physical direction of individuals going back and forth from space by the legal position of doorways, fences, arranging, and lighting. This standard dissuades access to a crime objective or injured individual and creates a view of danger to a culprit. In natural access control, safety features on pedestrian walkways are very important for people's quality of life. Every pedestrian needs to have safety elements.

The arrangement of finishing hardscape and delicate in along the person on foot should put accentuation on well-being instead of only an intriguing perspective on the earth as it were. The higher level of the shrubbery and blooms would not be more than 0.9 meters. Planting the scene is a huge segment similar to the biological structure. Cultivating the scene accepts a meaningful activity in working up another and pleasant condition.

Nevertheless, these creating pieces thinking about traits, for instance, the board, control, and affirmation of capable orchestrating planting, would not desire to crime works out. It is like manner meets the necessities that communicated in like manner get to control. This execution of masterminding recommended by close-by pros should act even more realistic in choosing the structure of scenes and suitable sorts of trees planted in the nearby district.

The majority of respondents give positive feedback on the importance of safety among residents. Safety among residents is important to create a quality of life without feeling any fear of crime. All the respondents want the police to conduct consistent patrolling of the area. Taman Cempaka does not have any community programs such as KRT, and most of them do not know who their neighbours are.

CONCLUSION

The research is conducted to examine the layout of housing design that can cause crime in neighbourhoods area. Various criminal problems surround us without our knowledge leading to discomfort in a residential area. Life's insecurities and inadequacies in meeting the goals of living necessities led to these groups engaging in criminal activities. The study focuses on the CPTED natural access control concept in housing neighbourhoods to prevent crime issues.

In conclusion, natural access control is a very good way to be implemented in Taman Cempaka, which positively and negatively impacted the population. Studies have discovered that ineffectively minded support impacts have made neighbourhoods grimy, risky, and prone to crime. The belief system that has been actualized in the common access control has

given a technique for estimating the viability of its components for clients' comfort as far as wellbeing.

This examination influences the improvement of successful individual fulfilment. The criminal issue has realized the occupants dreading the crime. The capable strategy to envision offence ensures that normal access control fruitful progress ought to be excellent. This examination has achieved the objective where basic access control arrangement has been executed in potentially crime slanted domains. The speculations used to achieve the study's goals have been underlined in this assessment as a crime factor. This is because the achievement of the evaluation has exhibited that physical traits (trademark get to control segments) accept a meaningful activity in trimming the system's character, similarly as affecting the social piece of correspondence.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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