

Addition of the concept of Crime Prevention through Environmental Design (CPTED) in Laguna Apartments

Artaxerxes Christopher Lee¹, Fermanto Lianto^{1,a)} and Rudy Trisno¹

¹*Master of Architecture Study Program, Faculty of Engineering, Universitas Tarumanagara, Jakarta 11440, Indonesia*

^{a)}*Corresponding author: fermantol@ft.untar.ac.id*

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Abstract. Some time ago, in the Laguna apartment, incidents such as murder, suicide, and the fall of a five-year-old child occurred. The management's lack of supervision in the Laguna apartment causes the possibility of crime, suicide, and accidents to occur. The research method is a descriptive qualitative analysis by studying the phenomena that occur, then tailored to the concept of Crime Prevention through Environmental Design (CPTED) to resolve the problems that arise. The CPTED concept is a design concept shown so that every occupant feels safe in the apartment. The CPTED concept has four strategies: Surveillance, Territoriality, Natural Access Control, and Target Hardening as design solutions to ve problems in the Laguna apartment.

INTRODUCTION

Laguna Apartment is located in Pluit, Penjaringan, North Jakarta (Figure 1, 2). There have been several repeated criminal acts, such as 1) The murder of a young woman [1]; 2) The death of a man from Malaysia in the elevator [2]; 3) Jump from the 8th floor [3] and 27th floors [4]; 4) A 5-year-old boy fell from the 19th floor [5]; 5) A man committed suicide on the 14th floor [6]; 6) A murder took place, and the victim's head was dumped on the bridge connecting the Laguna apartment block [7].



FIGURE 1. Laguna Apartment, Pluit, North Jakarta
Source: Google.com/maps, downloaded 13 November 2021; Author, 2021

The lack of supervision by the apartment manager is one of the causes of crime and accidents. For this reason, it is necessary to improve the supervision system so that everyone who is not known can be monitored easily from all corners of the building.

TABLE 1. Previous Research.

No	Research Name	Research Title	Research Discussion	Source
1	Amy Kezia Santoso, Sherly de Yong, Purnama Esa Dora Tedjokoesomo	An Applied Study of the Concept of Crime Prevention Through Environmental Design (CPTED) in the Interior of a Semi-Detached Residential Apartment in Sidoarjo	Several strategies in CPTED to minimize or eliminate criminal acts	Jurnal Intra, Vol. 6, No. 2, 2018 [8]
2	Aulia Malik Affif, N. Novrial	Implementation of Crime Prevention Through Environmental Design (CPTED) in Motorcycle Parking Facilities (Case Study: USU Faculty of Cultural Sciences Campus)	The layout of the space is orderly and refers to the relationship between interrelated spaces and the composition of the space that is proportional and logical.	Jurnal Tata Loka, Vol. 23, No. 1, 2021 [9]
3	Wiyantara Wizaka	Crime Prevention through Environment	CPTED concept of several things that	Binus Journal

No	Research Name	Research Title	Research Discussion	Source
		Design (CPTED) Adaptation: A Case Study of the Public Facility Design Phenomenon	need to be considered from the CPTED concept Parking, environment, apartments, and public spaces	Publishing, Vol. 3, No. 1, 2012 [10]

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Jeffery (1971) argues that sociologists and criminologists overestimate the social reasons for a crime without considering environmental determinants. Jeffery extends the assumption that proper design and effective use of the surroundings can reduce the worry of crime and crime incidents and improve the best of existence [11].

CPTED stands for Crime Prevention Through Environmental Design, does C. Ray Jeffery, a criminologist, initially put forward a theory. The definition of CPTED is that the suitable layout and effective use of the constructed environment can lessen worry and incidence of crime and improve quality of life. Crime Prevention through Environmental Design (CPTED) is divided into four strategies, namely Surveillance, Territoriality, Natural Access Control, and Target Hardening [11].

CPTED Concept around the Apartment

The theory of Jane Jacobs focuses on the places where crimes are committed and the physical characteristics of less safe places. In such cases, this theory is shown that the streets are not safe because it is quiet. This problem can be solved by giving the streets three main qualities [12]:

1. Clear boundaries between public space and Authors, 2021.
2. There must be a street eye, a road eye which means it can be seen by residents or security.
3. The building must be oriented to the road, monitored by building security.

Access at the entrance is essential to pay attention to the amount of supervision. In addition to security guards from the apartment, apartment residents must also monitor the existing streets. For this reason, roads must be used continuously to increase the number of adequate supervision and invite residents in the building to monitor the existing streets [10].

CPTED Concept in Apartments

The security of apartment units is the main focus when designing, and several things must be considered in designing an apartment [10]:

1. Provide a standard room so that each resident can get to know and communicate with each other
2. Minimize the number of shared units using a standard door
3. Complete each entrance with an intercom system
4. Create sufficient lighting in each apartment corridor
5. Use deadbolt locks and peepholes on every apartment unit door
6. Provide a children's playroom that is easy to supervise
7. Install windows that make it easy for supervision in the laundry room.

CPTED Concept on Parking Area

The parking area is one of the targets for criminal acts, especially if the area is dark and without any guard or supervision. Therefore, it is essential to apply the CPTED concept to the parking place [10]:

1. Install the lighting in a position that always illuminates the lines and information boards
2. Use bright colors to improve lighting quality
3. Create an automatic doorless exit and entry system
4. Avoid columns and hollows that can be used as hiding places.

CPTED Concept in Public Space

The public space can be an area with both positive and negative sides. However, if the public area is not adequately supervised, the opposing side would outweigh the positive side. Therefore, several efforts can be made on the concept of public space [10]:

1. Strive that public spaces are always used by nearby residents and not by strangers or from far away areas

2. Avoid dark places and hidden areas close to the center of activity
3. Provide good lighting that is bright enough at night
4. Avoid sheltered spaces that can invite people to wander in this area.

Strategy in CPTED

According to Santoso, CPTED has four strategies [8]; 1) Access control; 2) Surveillance; 3) Territorial reinforcement (Territoriality); 4) Maintenance. CPTED is also supported by social elements such as the second generation CPTED approach, which makes CPTED more holistic in reducing crime.

There are six strategies in CPTED according to Affif [9]; 1) Territoriality; 2) Surveillance; 3) Access Control; 4) Target Hardening; 5) Image and Management; 6) Activity Support.

RESULTS AND DISCUSSION

Application of the CPTED concept to prevent homicide

Considering there were three murders in the Laguna apartment: in the elevator, in the apartment unit, and at the bridge connecting the block so, the CPTED planning for this crime focuses on access control and territoriality (public, private, and service zones) and surveillance in the private zone and the apartment unit environment.

Access Control

The criminal risk in this apartment is due to the easy access to enter and exit the Laguna apartment unit. Although this apartment already has an access system to enter the apartment unit, some visitors can still easily enter and exit this apartment. This can be seen when observing the Laguna apartment, and it was found that a visitor who was not asked for his identity, a visitor who left the wrong apartment elevator area, easily invited visitors to enter and leave the apartment, a dark parking area (Figure 2 and Figure 3).



FIGURE 2. Security Area Analysis
Source: Google.com/maps, downloaded 13 November 2021



FIGURE 3. The Atmosphere at Night in the Parking Area
Source: Authors, 2021

Lack of lighting in the parking area can lead to higher crime. What's more, if the area is not guarded by security and has large trees, it is not easy to guard what security does and needs additional guarding. Therefore, Access control is needed to increase security. The lighting and security area was added in the same area (Figure 4).



FIGURE 4. Proposed Additional Security Officer Area
Source: Google.com/maps, downloaded 13 November 2021

Surveillance and Target Hardening

Public facilities are located on the ground floor and second floor of the Laguna apartment, namely the food court and various other functions. In this regard, supervision of the apartment entrance area is essential for residents and visitors to public facilities. Therefore, it is hoped that implementing the surveillance strategy in Figure 5 would prevent criminal acts from occurring. On the ground floor area, there is a food court for the public area, which does not have a good monitoring system, so that food court visitors, both residents, and non-residents, are straightforward to enter and leave the public area without supervision.

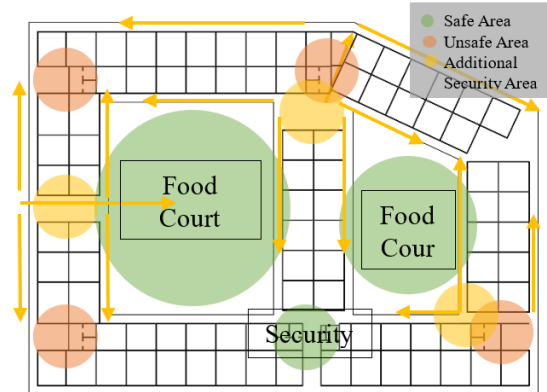


FIGURE 5. Proposed Addition of a Security Officer Area on the Ground Floor

Source: Authors, 2021

When observing the apartment area, security does not ask for visitors' identities, so visitors entering and leaving are not well controlled. Therefore, the analysis results on the ground floor require additional security placements to control visitors entering and leaving only one access door.

Surveillance and Activity Support

When observations were made, apartment unit residents talked between units with other units but did not yet have a particular lounge area. Activity support such as a lounge area needs to be added so that residents can interact together while monitoring their surroundings, as shown in Figures 6 and 7.

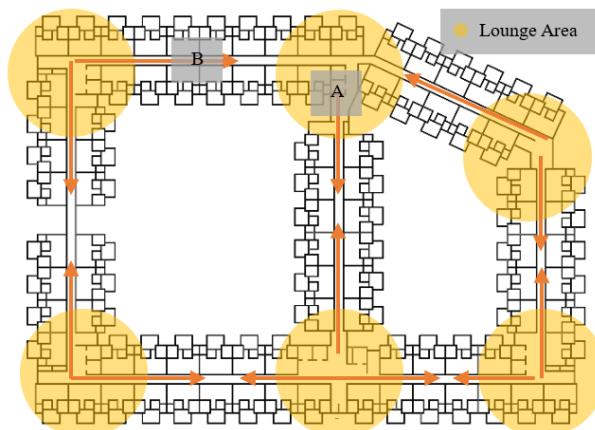


FIGURE 6. Proposed Addition of Gathering Room Activities for Apartment Occupants on Each Apartment Floor

Source: Authors, 2021

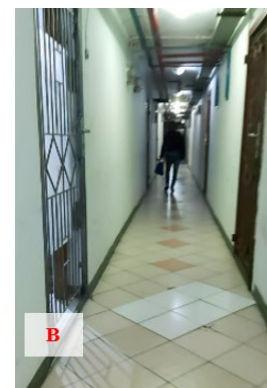
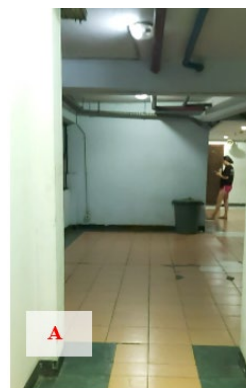


FIGURE 7. Suggestions for Adding a Gathering Activity Room for Apartment Occupants on Each Apartment Floor

Source: Authors, 2021

Territoriality on Ground Floor

The territory on the ground floor is divided into three, namely the public zone, private zone, and service zone (Figure 8). Territory can be interpreted as an area marker by the design of the apartment design to limit one's needs for activities. For this reason, the division of territory is essential to reduce abuse of login access by unknown visitors. There is much access to public areas, which can be seen in Figure 8 so that the entry and exit of visitors are less visible to local security. Likewise, the elevator entrance area of the apartment unit is outside the area of security surveillance. This would allow the occurrence of criminal acts in the apartment unit. Therefore, design changes are needed to maintain security for residents by 1) minimizing access to public areas and changing the lift entry area for apartment units to make them more private; 2) security is also required at each lift entrance area of the apartment unit on the ground floor (Figure 9).

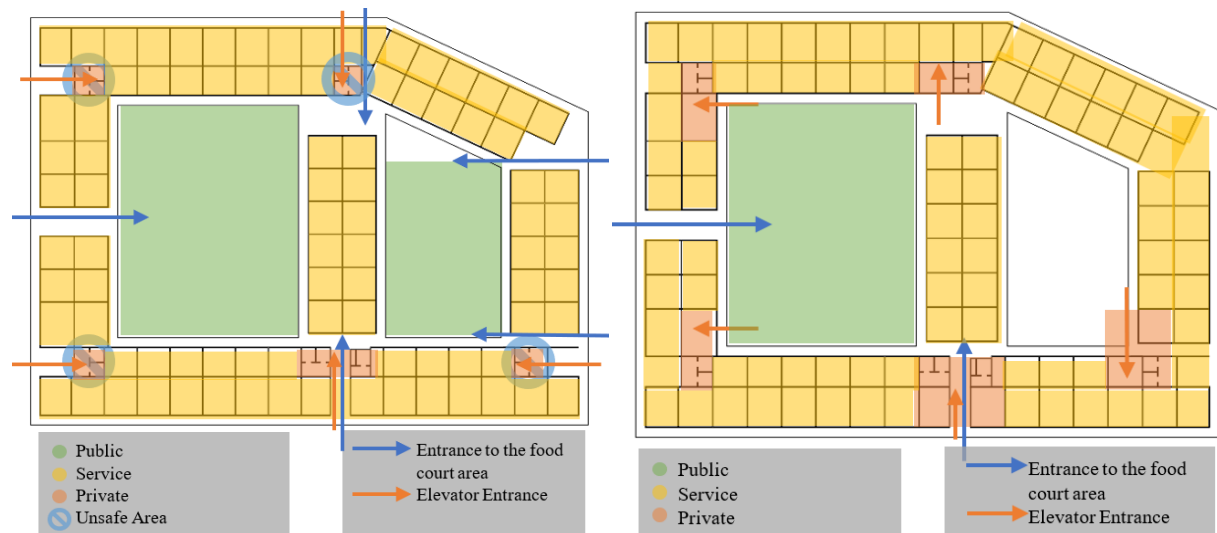


FIGURE 8. Public, private, service, and unsafe area locations **FIGURE 9.** Proposed Changes to Public, Private, and Service Territories
Source: Authors, 2021 Source: Authors, 2021

Application of the CPTED Concept to Prevent Suicide

Three suicides were recorded in the Laguna apartment. Suicide was committed in the apartment area and the bridge connecting the apartment blocks (Figures 10, 11). Meanwhile, the bridge connecting the block was closed by the apartment and not used again. Therefore, it's far more essential to use the CPTED concept that focuses on hardening, surveillance, and territoriality to prevent suicide.

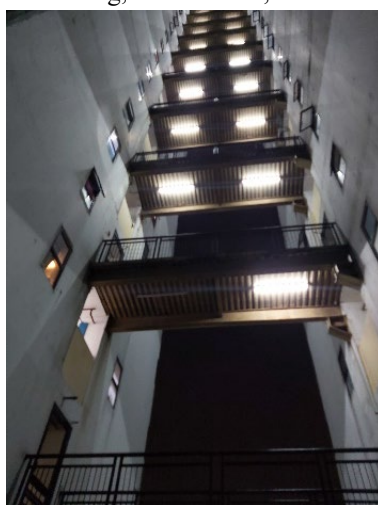


FIGURE 10. Locations of Suicide in the Bridge Area
Source: Authors, 2021

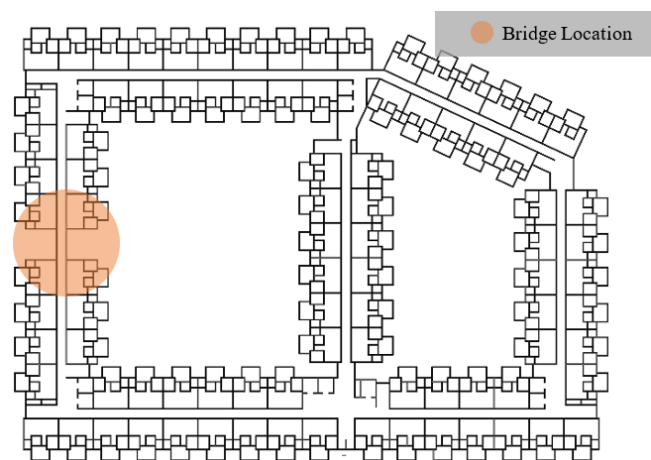


FIGURE 11. Location of Block Connecting Bridge at Laguna Apartment
Source: Authors, 2021

Target Hardening on Block Connecting Bridge

The lack of height of the railings and the open side of the bridge connecting the block in the Laguna apartment tower make it easier for suicides to occur by climbing the railing. The connecting bridge between the blocks has a poor design where the block connecting bridge is located on each floor of the apartment located relatively high, and the wind is strong. For this reason, an alternative that can be done on the block connecting bridge with a semi-closed or closed design is to prevent the connecting bridge from being used as a place to commit suicide. There are three alternative design solutions, namely: (1) Making a high railing up to the ceiling so that it functions as a transparent fence and wind circulation would still be able to enter (Figure 12); (2) Semi-closed using brick wall material and glass windows (transparent), but the wind cannot enter the bridge (Figure 13); (3) Closed (massive) using brick wall material and glass windows at the height of +2.00 m, but the wind cannot enter the bridge (Figure 14).

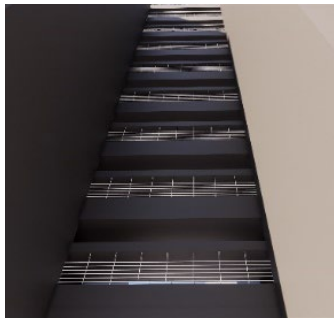


FIGURE 12. Alternative (1) Design of Block Connecting Bridge with High Railing Up to Ceiling
Source: Authors, 2021

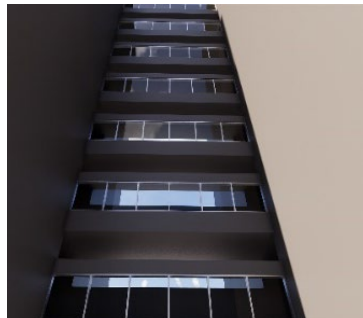


FIGURE 13. Alternative (2) Design of Semi-enclosed Block Connecting Bridge Using Brick Wall Material and Glass Window
Source: Authors, 2021

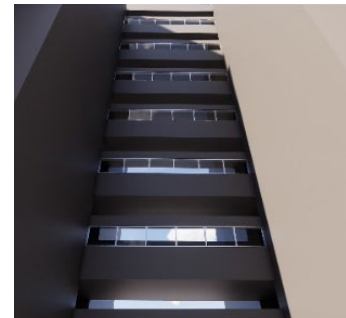


FIGURE 14. Alternative (3) Design of Semi-enclosed Block Connecting Bridge Using Brick Wall Material and Glass Window at an elevation of + 2.00 m
Source: Authors, 2021

Surveillance and Activity Support to Prevent Suicide

A lounge area in the apartment unit is needed in the surveillance concept as a shared interaction space (Figure 15) to prevent suicide.

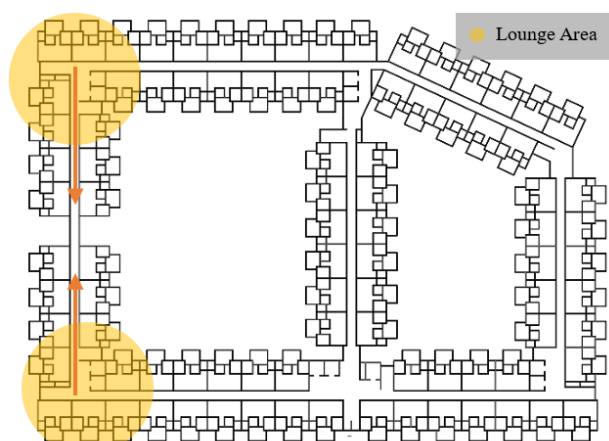


Figure 15. Proposed Locations for Adding a Lounge Area
Source: Authors, 2021

Territoriality on Apartment Plans to Prevent Suicide

The intimacy of the relationship between residents from one unit to another is so important that if the apartment does not have a shared area such as the Lounge Area, there would be no socialization between apartment units (Figure 16). So it is necessary to add a semi-public territory for residents to socialize on each floor (Figure 17). In addition, if an irregularity occurs by a visitor or apartment resident, the occupants of the other unit would be part of the surveillance system for other residents.

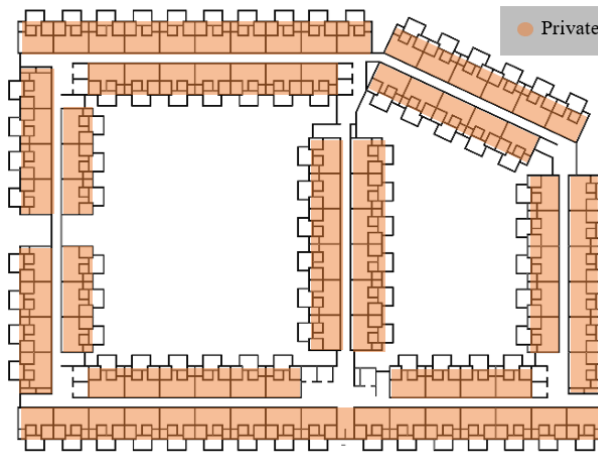


FIGURE 16. Plan of Existing Territoriality in apartment units
Source: Authors, 2021

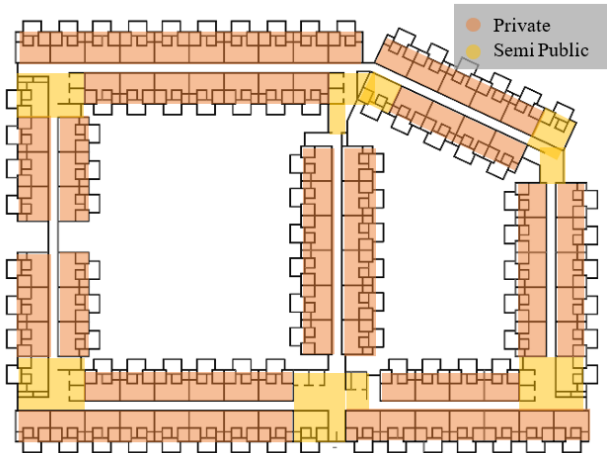


FIGURE 17. Proposed location addition Lounge Area
Source: Authors, 2021

CONCLUSION

Applying several CPTED concepts in the Laguna apartment is necessary to provide more security for residents and prevent crime, suicide, and accidents. The CPTED concepts are: 1) access control; 2) surveillance; 3) territoriality; 4) target hardening. The CPTED concept is interrelated with one another, such as:

1. Access control, surveillance and target hardening; surveillance and activity support; territoriality become an integral part of the security analysis method to prevent homicide
2. Target Hardening on Block Connecting Bridge; Surveillance and activity support; Territoriality by adding a lounge area to increase security and prevent suicide.

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