

MANIPULATION OF PUBLIC SPACE DESIGN WITHIN CITIES: ARCHITECTURE AS A CRIME CONTROL THEORY IN RESPONSE TO CASES OF CHILD VIOLENCE

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ABSTRACT

Data shows that, all recorded cases of violence in Indonesia, most of the victims were children. architecture needs to respond to this phenomenon by manipulating certain spatial designs, because these cases occur in architectural spaces. This issue should ideally be considered on a city scale, seeing that the highest mobility of children is movement within the city, perhaps going to school or to the playground within the same city. To create a safe environment for children from violence that lurk on a city scale, it is necessary to manipulate the design of spaces in the city where children usually carry out their activities, thus these spaces can be called child-friendly spaces. By using the theory of architecture as a crime control, which is a prevention and protection mechanism for victims and potential victims of urban-scale violence, the spatial and formal aspects that need special attention are visibility, dimensions and shape, and accessibility.

Keywords: Child, Violence, City, Visibility, Accessibility

INTRODUCTION

Based on the data listed on the Online Information System for the Protection of Women and Children website (SIMFONI PPA) which developed by the Ministry of Women's Empowerment and Child Protection of the Republic of Indonesia, as of January 1, 2023, 12,491 cases of violence had been recorded in Indonesia. Of these 12,491 cases, 57.3% of the victims were children and 82.6% of the perpetrators were adults. 7,707 or the equivalent of 65% of cases of violence in Indonesia occurred in households. It can be concluded, child violence in the household is a case of violence that dominates in Indonesia. Based on where it happens, other 35% of child violence happens out of household such as school, public facility, work, education, end others (SIMFONI PPA doesn't mention what is other specifically).

Child abuse by adults can take several ways. Moore once said (Nataliani, 2004), Violence and misbehaviour against children can generally be classified into three categories: physical, sexual, and emotional violence. An international Psychologist called Terry E. Lawson, who stated the definition of child abuse, explained that there are several types of child abuse: emotional abuse, verbal abuse, physical abuse, and sexual abuse. There's a lot of impact that can happen caused by child abuse, especially impacts for the victims themselves. Broadly speaking, the impact is emotional and psychological which has an impact on social behaviour and deter children's development in several aspects such as cognitive, emotional, and social.

Specifically for sexual and physical violence, there are physical impacts that victims felt, such as pain, cuts, bruises, and even injuries. This design will focus on the direct impact, that is the physical and psychological condition of a child as a victim of violence right after experiencing violence and trying to save themselves.

A study said child friendly space can effectively give protection for children from risk and threats which can detain psychosocial wellbeing and support developmental assets amongst younger children (Hermosilla, 2019). Because child violence has bad impacts to children emotional, physical, and psychological, so it can be concluded that child violence is a risk and threat for child growth and development. From this fact, child friendly space can be expected to give protection to children from violent threats.

THEORY / RESEARCH METHODS

Descriptive qualitative method used in researching the issue of child violence in urban public spaces discussed in this paper. With this method, the facts of the problem that have been mentioned in the introductory section will be observed and observed by studying documents and previous expert discussions on this topic. This research will focus on discussing the topic of urban design manipulation in responding to the phenomenon of cases of child violence in public spaces by looking at architecture as a control against cases of child violence. Neal Katyal in this journal architecture as crime control discusses how architectural aspects control criminal phenomena on a city scale. As secondary data, the theory of architecture as a crime control and previous researchers' discussions regarding it as a support will discuss how architecture becomes a control for cases of child violence.

This research was carried out by examining four mechanisms of architecture as a crime control and five attentions in designing city elements to minimize cases of violence. In the context of child violence cases, the crimes that will be discussed are cases of child violence, especially in public spaces. That way, what architectural aspects need to be focused on in designing child-friendly city elements and how to implement them can be determined.

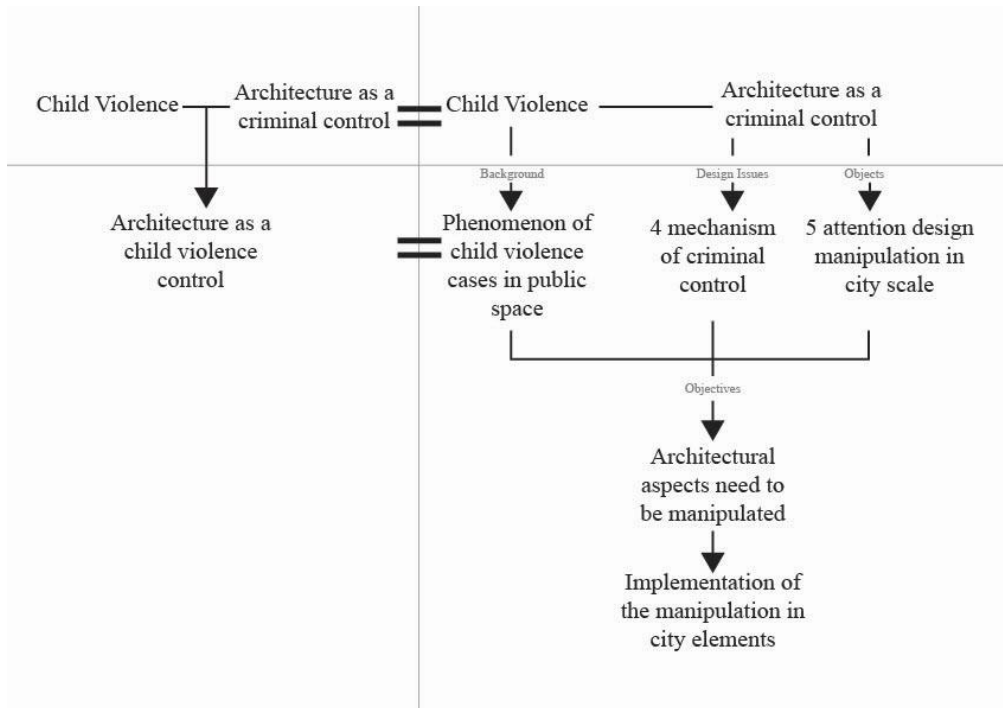


Figure 1. Method Flowchart

Methods

Child violence as crime

Refers to UU No. 23 year 2004 about Elimination of Domestic Violence (Indonesian Constitution), child abuse is included in the category of criminal law. In the work of some architectural theory, architecture as a crime control was written to demonstrate how additional attention to cities, neighbourhoods, and individual buildings can reduce criminal activity (Katyal, 2002). This shows how as "architecture" all activities and activities from the scale of individual buildings to urban planning are the concern of architects.

Based on the background, this phenomenon is ideally studied on a city scale, in the fact that the highest mobility of children movement within the city, the application of mechanisms in the theory of architecture as a crime control can be studied on a city scale by manipulating the design of public spaces in the city. Children act either as victims of violence or potential victims who need to be supervised so they don't experience acts of violence. While adults act either as supervisors as or criminals, looking at the data showed in the SIMFONI PPA (Online Information System for the Protection of Women and Children) website shows that most child abusers are adults. Mechanisms in architecture as criminal control can be studied so that it can be concluded what spatial-formal aspects of architecture need to be considered in designing child-friendly public spaces.

Architecture as a Crime Control

Neal Katyal explains that the role of crime prevention as an act of crime is a discussion in the realm of law, but other fields including architecture also have a role as control of the crime itself. Architects have proposed that crime can be prevented by manipulating the design and placement of many simple items, such as doors, bus stops, and park benches (Katyal, 2002).

On a city scale, there are two things that need to be manipulated in the design to control criminal cases, that are roads and open spaces. Urban streets account for at least 25% of urban space. Inner-city roads are technically owned by the government; therefore, the government has a role here to redesign inner-city streets with attention to lighting, public transit facilities, attractive barriers for high-crime risk areas, vegetation, and traffic control. Streets that were rarely used can trigger criminal actions, the presence of open spaces can trigger new activities on quiet street spaces to increase surveillance and security from criminals. In child abuse crimes cases context, users of this program can be categorized into children and adults. Overall, architecture as a crime control offers four strategic mechanisms for how architecture can control criminal acts: natural surveillance (making a visible space), territoriality (clarifying the territory of a space), building community (combining many activities in one space), and strengthening targets (facilitating the victim's access to space).

Natural Surveillance

Natural surveillance is a strategic mechanism to make space visible by many people around. The goal is to prevent criminal acts where victims can take shelter and protected in a crowd and prevent crimes that occur in closed spaces. For example, a house near a bar is even safer than a house on the outskirts of town because bars can trigger crowds (Jacob, 1982). The bar itself will certainly protect its visitors, so if one day a crime occurs, the victim can run away into the bar and feel safe. In this discussion, the public crowds is the architectural design itself, the manipulation of design lead people to join the crowd. There are three principles in the natural surveillance strategy. First, diversity building use, by accommodating various functions and activities in the design at the same time. Second, building design, placing architectural elements for the natural surveillance function first and then adjusting other aspects. For example, placing openings in areas where traffic is high so that people passing by can easily anticipate criminal acts. Furthermore, other aspects such as ventilation and lighting are considered according to the position of the opening elements that have been positioned previously. Third, lighting is an important aspect in criminal cases because light has two roles; it is clarifying visibility or stakes and gathering the masses. The application of lighting also needs to be adjusted to the existing lighting standards.

Territoriality

The strategy is to form or construct landscapes and buildings that create a sense of territoriality. This strategy can be carried out by making smooth boundaries that clarify the ownership of the space and also give a private sensation of the space.

This mechanism compensates for the natural surveillance mechanism which wants to make space openly. So that the space created is neither too closed nor too open, the boundaries used must be symbolic barriers.

Building community

In applying the building community mechanism, it means designing architectural structures and formations that combine various activities rather than separating them. This relates to the principle of building diversity in the natural surveillance mechanism, combining these various activities to facilitate unplanned social interactions and reduce feelings of isolation. The strategy is to provide a place or feature that can accommodate many people. For example, providing lots of benches in public spaces to invite people to sit there.

Strengthening Targets

The strategy of this mechanism is to protect the activities/facilitate access of the victim (or potential victim) in the program and block the access of criminals. These mechanisms need to be applied in the design of city-scale child-friendly public spaces that can manipulate the design to minimize the possibility of criminal cases. In the city, all places and spaces are connected by roads. At least, 25% of the city's area is road space. In the process, victims of violence can see street space as a place where criminal cases occur as well as connections or access to save themselves from cases of violence. To design safe street space, Neal Katyal wrote down five things that need attention (Katyal, 2002).

First, lighting will substantially prevent crimes including violence against children in public spaces. It is because adequate lighting can increase visibility in the road space. In addition, a bright atmosphere will give the sense of safety for people who will pass through the road so that it is likely that more people will pass through the road and will not make it a criminal prone area.

Second, public transit facilities such as terminals and bus stops. This transit area can be a double-edged sword, on the one hand it can make it easier for victims to escape from perpetrators of violence, on the other hand it can make it easier for perpetrators of criminal to escape. So, this transit facility needs to pay attention to its design so that it would be easier for children to access and other adults who are not criminals to hinder criminals to escape. Since another category of adult was needed to act as supervisor, it was necessary to invite many people to the bus stop. In cases where the bus stop is located in a deserted route, it needs to be positioned in a busy area such as a trade and service area, or public parks.

Third, an attractive barrier. On certain deserted streets which are prone to cases of violence such as kidnappings and cases of child sexual violence, these streets need to be marked with attractive boundaries so that children will not pass it. This boundary needs to be understandable for children, not only just marked by signage or writings which may be difficult for children to understand.

The fourth is vegetation, the provision of vegetation can give an orderly and clean impression to create a safe and comfort sense. Vegetation can also act as a

shade that makes it comfortable for both adults and children to walk, thus encouraging many people to come or walk along the road. Maintenance needs to be considered periodically so it will not become a dirty place and give the impression of being unsafe.

The fifth is traffic control. Traffic control is needed in addition to the convenience of traffic to support pedestrians. Since children are not allowed to drive vehicles, a child-friendly roadway should support non-motorized transportation, such as bicycles, scooters, and pedestrian access.

RESULTS AND DISCUSSION

Important aspects in designing public spaces that control child violence can be applied in open spaces for the public that are child-friendly and in road sections that do not only act as a link but also as a space for activity. By paying attention to the aspects of visibility, dimensions and shape, and accessibility, these things can be implemented in the design.

Visibility

In road segment, visibility involves pedestrian space and vehicle road space. Road space belongs to adults while pedestrian space has the potential for violence against children. Pedestrian space and road space need to be separated clearly for safety factors from accidents, but this barrier should not be massive to provide visual exposure. Material elements should use materials that do not dampen sound and tend to reflect sound such as fibre and metal. To minimize visual obstruction by road furniture, there should not be a gap behind it that children could use as an access point. These gaps have the potential to block the view from the street and reduce overall safety (Figure 2).

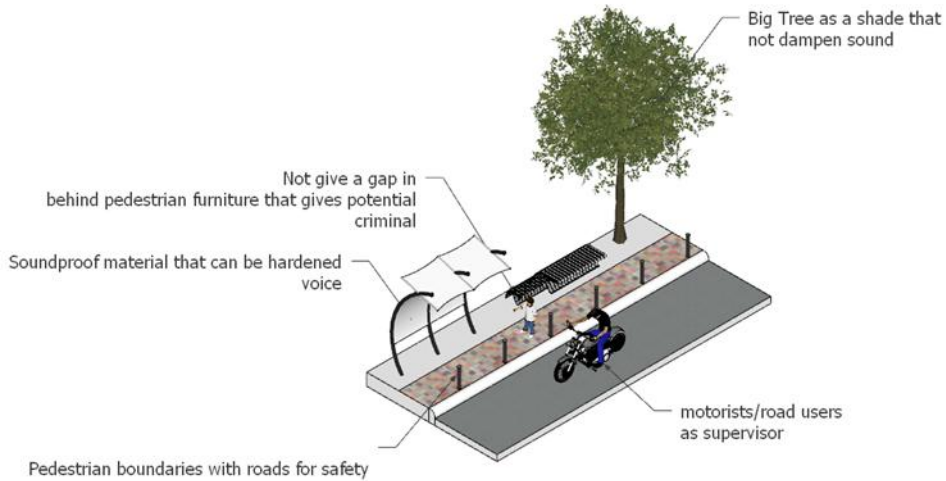


Figure 2. Pedestrian Space for Child-Friendly Roads

In addition to child-friendly roads, public open spaces also need to adopt this visibility principle. The application of exposure to open spaces or child-friendly public spaces involves spaces with different users. An open space that adopts community building mechanisms, a lot of activities are included to invite all kinds of people. However, there are special areas that are focused on specific functions and users, such as playgrounds for children and kiosks for adults. Between these spaces it is necessary to provide artificial or transparent boundaries so that these spaces give a paradoxical impression. It is open but also provides privacy because of their territoriality. Pseudo or transparent boundaries do not have to be in the form of glass or transparent materials. It can also be in the form of gaps or not massive boundaries. In the example below, the boundaries used are screens with a tensile membrane material that is flexible and not massive, with gaps to give the impression of clear territorial boundaries while providing openness (Figure 3).

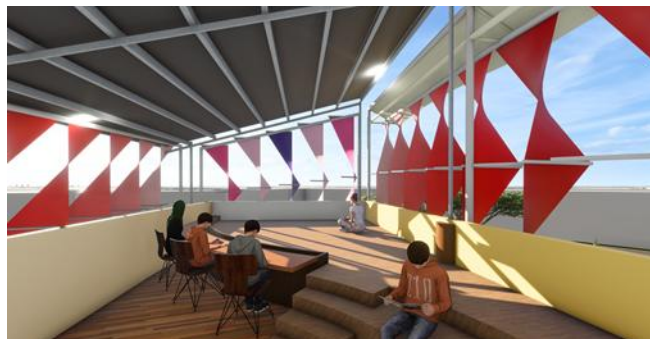


Figure 3. The Delineation of Pseudo and Non-Massive Space Creates Exposure to Territoriality and Natural Surveillance Mechanisms

Dimension and Shape

Children's body dimensions are different at each age, according to UNICEF, children's ages can be divided into toddlers, children, and adolescents. Each category has different body dimensions. Especially for toddlers and children who will most likely be very uncomfortable if they use furniture with standard adult dimensions. So, it is necessary to add furniture for toddlers and children. Apart from that, the furniture or these elements will become the identity of the space. For example, a room with 30 cm high benches and colourful is a space for children and toddlers. For rooms with standard elements such as a table with a height of 75 cm is space for adults (Figure 4 & 5). These elements include furniture, signs, as well as street elements such as stairs, ramps, elevators, etc.

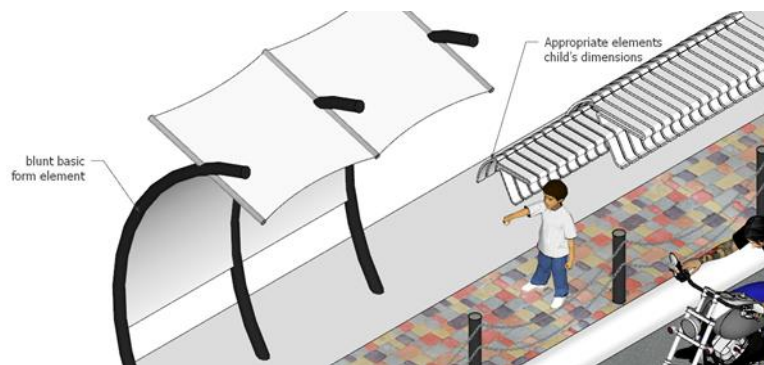


Figure 4. Implementation of Dimension and Shape Principles to Road Segment Illustration



Figure 5. Illustration Dimensions of Space Identity Elements: Furniture with Childish Dimensions for Child Users

A safety shape, with obtuse angle as the basis form, will give the effect of a curved shape that tends to be oval. Circles, on a large scale need to be avoided because they are likely to create new bends that interfere with accessibility. The shape of curve will eventually affect the basic form of circulation and the building mass which tends to be curved as well.

Children have higher mobility such as running around but have a low level of alertness. Certain shapes are dangerous for children. Based on the Guidelines for Outdoor Play Areas published by the Directorate of Early Childhood Education, the Ministry of Education and Culture in Indonesia, the risk factors could be falling from heights, being pinched/stucked, and injury from sharp angles. To avoid falls from a height, the solution is a floor material that minimizes injury from falling, such as a soft material. In order to avoid getting stuck, the child needs to see a gap as either passable or impassable. For gaps that impassable, they may only be 5-10 cm wide and for those that passable are above 23 cm wide. Gaps between 10-23 cm need to be avoided to prevent the risk of being pinched. To avoid injury due to sharp corners of outdoor elements, avoid sharp corners and apply more obtuse angles (Figure 6). These solutions can be applied not only on furniture elements but also other elements such as landscaping and buildings. However, curves (obtuse angles) that cause blind views should be avoided. Reflection through mirrors the use of other sensory signals such as hearing could be provided to show the situation around the corner.



Figure 6. Illustration of the Curved Shape as the Result of Shape-Exploring Obtuse Elements in The Design of Children Friendly Public Open Space.

Accessibility

Circulation must pay attention to and anticipates children who are victims of violence will escape into this open public space. In accordance with the design limitations, the spontaneous condition of the child who will escape into this public space is likely to be in a state of confusion and in a bad psychological condition. This state is due to any type of violence or in a bad physical condition such as injury or bruise due to physical violence. So, the target strengthening strategy that is applied here is to make a linear circulation that has a few turns. A minimum turn is

defined as a situation where when people does not need to rotate their bodies up to 90° per one step. The aspect of visibility also plays a role in turns, as it is necessary to pay attention to so that it does not block the view from a distance. As an illustration of the implementation of this concept, Figure 7 is an example of a child-friendly public space design that conceptualizes circulation and access by considering several scenarios in which children come when trying to save themselves from acts of violence to the available public space. The result is that there are three entrances that children can easily access to seek help. A child-friendly public space needs to be accessible from all roads on the side of the public space location. So then, it is recommended to build it on land that intersects with more than one road segments.

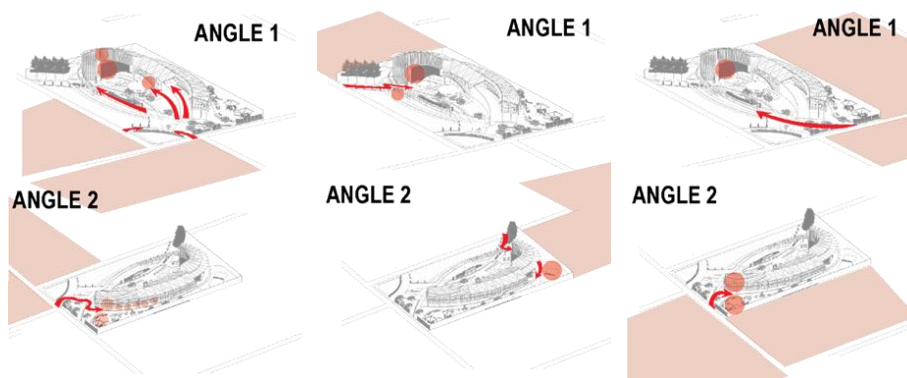


Figure 7. Linear Circulation with a Curved Base Shape to not Confuse Children Who Are Victims of Violence

Because children will also access road and pedestrian spaces to go from one place to another in the city, there needs to be roads that are specifically designed as child-friendly roads, so that children can understand which roads are safe for them. This road segment specifically designed for children, is certainly not possible to be applied to all roads in the city. Special road sections to prevent cases of child abuse are needed on certain sections that connect spaces whose users are children such as school buildings, some specific skill courses area, *posyandu/puskesmas* (community healthcare organization for children and public), and playgrounds. In addition, this road section must also be able to connect spaces that are used by children with the authorities, such as the nearest police station or the office of a social organization that cares for children. If some spaces not connected by road, then a catalyst needs to be provided; a child-friendly open spaces that become the link between these spaces. If there are no organization or police nearby, then the function of the open space can be added as a place for community organizations, such as the PKK (Family welfare development organization) and youth organizations, which are gathering points for child victims and potential victims of violence who try to seek protection from adults. In cases where in a city area there are health facilities, school buildings, security offices, and several children's play areas, the roads connecting these buildings need to be designed to be child-friendly roads. If there is a building

that is very far from other buildings, for example a school away from these buildings, and without road that can directly connect this school, then it is necessary to add a children's public space that becomes a link between that child-friendly street and this separate school (Figure 8).



Figure 8. Design for Child-Friendly Roads and Child-Friendly Open Space

On child-friendly roads, attractive instructions need to be given, such as paving patterns and the arrangement of furniture so that they navigate the direction of children's circulation. With regards to visibility, children can be navigated to walk through areas of high exposure such as avoiding closed places behind street furniture as well as avoiding dead ends. Dead ends can be closed in subtle ways such as turning the paving pattern onto a safe path so that children do not walk towards a dead end or adding a small park at the end of a dead-end street (Figure 9).

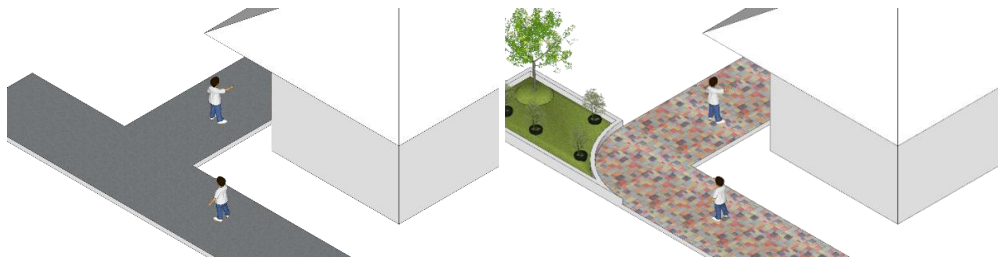


Figure 9. Illustration of Treatment for Dead-End Road

CONCLUSIONS

1. In response to cases of child violence on a city scale, aspects that need to be designed are open public spaces and roads.
2. The theory of architecture as a crime control is used by seeing violence as a criminal act where the victim needs to be given supervision and protection. This approach has four mechanisms, namely natural surveillance (making a space visible), territoriality (clarifying spatial territory), building community

(combining many activities in one currency), and strengthening targets (making it easier for victims to reach space).

3. Based on a study of the theory of architecture as a crime control and its response to cases of child violence, the architectural aspects that need to be considered in designing city elements are visibility, dimensions and shape, and accessibility. These aspects need to be taken into consideration for every element of the city, namely city-owned public facilities and road spaces within the city.

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