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ARCHITECTURE AGAINST CRIME

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ARCHITECTURE AGAINST CRIME

Abstract

The accelerated development in the industry of weapons has reshaped the human behaviors, which led to spreading of wars and terrorism. Since World War I, homeless people could not live without making crimes as a source of income. Residential compounds, private properties, and public projects have become attraction points magnetizing robbers. Consequently, architects have realized the importance to use design strategies reducing crimes. The scale of crime prevention is varied to cover a single building or a group of buildings. This paper proposes awareness-guidelines for 'architecture against crime' to be considered before setting the urban design of residential compounds in particular. It is a qualitative research based on a theoretical approach defining the meaning of crime then presenting a literature review highlighting previous architectural attempts in crime prevention. After that the paper deducts specific criteria for reducing crimes in the residential compounds. These criteria will be examined through analyzing three public housing projects; (WOES Public Housing in New York City, Sejong Public Housing Development, Sejong City, South Korea, and Abode at Great Kneighton Cambridge Shire Housing Project, Cambridge, UK). These case studies have been selected for implying certain urban treatments and elements that urban designers provided to reduce crimes. This analysis ends with a comparison between the case studies to conclude general guidelines that can be used as a formal code in the urban design of housing projects. Finally, the paper sets a group of conclusions to be a warning alarm provoking architects and urban designers to think firstly and before anything in life safety.

Keywords

Architecture, crime, design, urban, built environment.

ARCHITECTURE AGAINST CRIME

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ABSTRACT: *The accelerated development in the industry of weapons has reshaped the human*

behaviors, which led to spreading of wars and terrorism. Since World War I, homeless people could not live without making crimes as a source of income. Residential compounds, private properties, and public projects have become attraction points magnetizing robbers. Consequently, architects have realized the importance to use design strategies reducing crimes. The scale of crime prevention is varied to cover a single building or a group of buildings. This paper proposes awareness-guidelines for 'architecture against crime' to be considered before setting the urban design of residential compounds in particular. It is a qualitative research based on a theoretical approach defining the meaning of crime then presenting a literature review highlighting previous architectural attempts in crime prevention. After that the paper deducts specific criteria for reducing crimes in the residential compounds. These criteria will be examined through analyzing three public housing projects; (WOES Public Housing in New York City, Sejong Public Housing Development, Sejong City, South Korea, and Abode at Great Kneighton Cambridge Shire Housing Project, Cambridge, UK). These case studies have been selected for implying certain urban treatments and elements that urban designers provided to reduce crimes. This analysis ends with a comparison between the case studies to conclude general guidelines that can be used as a formal code in the urban design of housing projects. Finally, the paper sets a group of conclusions to be a warning alarm provoking architects and urban designers to think firstly and before anything in life safety.

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1. INTRODUCTION

Every man dreams of a city that ensures the highest quality of life for a single resident or families. Achieving the highest economical movement and better places for work, in addition to the presence of educational facilities and all social and different life activity spaces. In spite all of that, it should be safe for living with less threat of crimes and violence, in which can help in developing the economic movement, having a better social life where people feel safe through their interaction and communication, and having safer environment for children's education via safe roadways to schools and colleges. The mega urban cities provide a high-class level of the quality of life. Such types of cities attract people from everywhere having a high density of population. This increase in population helps in growing the economical, commercial, and social activities all time, day and night with 24 hours of activity. (Glaeser & Sacerdote, 1999) This paper sheds the light on a problem, which is the fact that this increase of population has resulted in raising percentages of crimes, robbery, drugs, and every single type of violence. Thus, growing of crimes percentage and fear of crimes have a significant negative impact on the development of cities and became an important factor in buildings design. (Walker, 2010) People, therefore, may rethink in moving to such dangerous places. People may even rethink again if they want to work in such places and having their lives in the hands of criminal and having a less good places of schools and children activity area. (Santana, 2009) In the beginning of the twenty first century, importance of architectural design and the new standards in urban design has started taking place in helping prevention of crimes in cities and neighborhoods. Despite the major role of police and governmental actions in preventing crimes, it is a hard point to be practically achieved. Though, architecture has begun to reshape cities in having less crime (Poyner, 1983) Architects, therefore, have now suggested applying new strategies for crime prevention and control using 'Building Design' and 'Crime Prevention through Environmental Design', CPTED. In which designers aim to reshape the criteria of building composition and landscape design to enhance control, in addition to redefine the materiality used in the building. (Shamsuddin

& Hussin, 2013) The paper therefore aims to produce 'Architecture against Crime' as a new way of urban design that helps in decreasing the probability of crime and violence. It is not just understanding and studying users' needs, but it also depends on studying needs of misusers and the criminal way of thinking and acting in order to reach his violent goals, in which the design would play the main role preventing the criminal from even thinking to take his action. (Kankondi, 2012) It is a way of studying types of crimes and criminal minds in order to design a better-safer public spaces and private buildings. Through recognizing the mentality of the criminal and his/her way of action, and knowing types and classification of criminals that would help in knowing how to deal with this issue through different effective solutions. (Douglas, 2013) The design of the overall urban planning, the outdoor spaces, and the building itself should be taken into consideration with a new different perspective, in order to achieve better choices for decreasing percentage of criminal activities and violent actions. Thus, knowing the new design criteria and new strategies in Urban Planning and 'Crime Prevention through Environmental Design' (CPTED) nowadays is what architects and planners should be aware of, in order to have a better social impact on people and their surroundings. (Fennelly, 2013)

2. DEFINITION OF CRIME

Crime is a delinquent act that is defined by breaking rules. These rules vary throughout the deference of place and time. Rules are usually defined by the standard moral of human being. The government authorizes these rules, and citizens must follow. These laws shape the behavior codes and ethics that every single man should follow. Breaking these rules may lead to punishment by the name of law. It should be noted that not every delinquent act is considered as a crime such as a civil offense. The 'crime' word is usually reserved for the offences that cause harm or injury to the public, individuals or the state. Ferraro gives us the definition of fear as “an emotional response of dread or anxiety to crime or symbols that a person associates with crime. This definition of fear that implies some recognition of potential danger, what we may call perceived risk, is necessary to evoke fear.” (Fennelly, 2013) After highlighting the definition of 'crime', the paper takes a closer look at two American examples as a historical brief through a literature review on the first trials of prevention happened on an urban scale, then this review clarifies the role of architecture in preventing crimes.

3. LITERATURE REVIEW

There were prominent publications in the field of 'design against crime' written by architects such as; Barry Poyner, Lawrence Fennelly, Randall I. Atlas, and Omagano A. Kankondi. Their books tried effectively to find solutions to prevent crimes and violence through a clear-organized architecture. Historically, London's underground could be the first built environment that accommodated criminals and poor people who seek to find a residency for free. It can be figured out that criminals search always for hiding in unseen places. After World Wars I and II, weapons have spread and became in hands of many people. Other horrible phenomena have emerged like drug-trade, prostitution, smuggling, counterfeiting, subversions, terrorism, due to the architecture of ruins that protected criminals and terrorists. The increasing number of floors in the residential buildings, particularly in the cities of high-rise-buildings like New York and Chicago, has created alleys, narrow passages, dark walkways, recesses, and unseen backyards. Unfortunately, these urban elements have risen the percentage of crimes. In Missouri, 'Pruitt-Igoe' was a known residential compound, built in 1954 and by the late 1960s, the entire complex turned to be a spot of crimes. Thus, in 1972, the American government decided to demolish it announcing its clear failure, as shown in figures 1(a) and 1(b). Although it was a successful project sheltering many families, but criminals got beneficial from defects of the International Style that provided long corridors, separated units, and isolated residences. (Moore, 2012)



Fig. 1(a) Left: Pruitt-Igoe housing project was a concrete jungle.

Source: Photographed by Bettmann/Corbis

Fig. 1(b) Right: Part of Pruitt-Igoe project was demolished in 1972 due to the spreading crimes.

Source: Photographed by Getty Images

3.1 Crime Prevention

As known, rates of crime had been increasing lately in cities in a way that the world heavily started to spotlight this problem in a way for trying to have solutions for this issue using various strategies. According to Oscar Newman, professionals had obtained three main categories of prevention solutions that should be applied. (Newman, 1973)

3.1.1 Corrective prevention

People turn to crime because of psychological, social and economic issues. Due to that, governments should start programs for anti-poverty in the low-income places in order to give those the right help. In addition, providing education opportunities with the help of social active buildings may raise the level of people morals and awareness.

3.1.2 Punitive prevention

It is a strategy of raising strictness of law. Criminals would be more afraid of making any crime due to the strict punishment results in addition to raising the number of police members in order to have more security in the city.

3.1.3 Mechanical prevention

It is the way of increasing obstacles that could face the criminal, such as; security cameras, metal doors, fences and many other obstacles.

3.2 Role of Architecture in Crime Prevention

Corrective prevention is a good way for raising prevention ratios but it may take time, in addition to that, it may be ineffective for some people. Punitive prevention is also important way for decreasing crime rates, but it is not easy to be achieved due to the high costs of this application, in addition to the low efficiency of mechanical prevention since there have been no regulations imposing owners to apply such steps. In a result these traditional preventions are important but hard to achieve and less efficient in many cases. Thus, architects have suggested new strategies for reducing crime possibilities. A way of manipulating the design such as building compositions, openings, types of doors and many others can be appropriate criteria for decreasing this issue. According to Neal K. Kaytal, These strategies are categorized in four main parts. These strategies are defined under the main title of "Crime Prevention through Environmental Design" (CPTED). Design should cover: (i) increasing the percentage of natural surveillance for the surrounding people, (ii) having a sense of territoriality for helping residents in controlling attitudes, (iii) building communities in order to have less isolation, (iv) strengthening crime targets. (Kaytal, 2002)

3.2.1 Natural Surveillance

It is a way for using architectural compositions providing more well viewed spaces for the people surrounding. In which, it can be said that as the surveillance ability of space increased, opportunities of a crime would surely decrease. Isolated spots and spaces that cannot be seen by people are much vulnerable to danger such as narrow pathways between buildings, spaces of dense shrubs, and spaces of poor visibility. By following words of the critic Jane Jacobs "eyes on the street", percentage of crime will theoretically decrease. An isolated house can have much danger than a house in a community. (Kanigel, 2016) Surveillance can be achieved by three different ways:

- Diversity of building use: In which the building would serve more than its primary function, thus, it can attract many people in different time of day. Such active places or spaces would reduce the attempts of crimes due to the density of users there.
- Building Design: Reshaping the building composition and zones can provide more visible open spaces throughout having good visual connectivity between different zones and the opening of the building enhancing the surveillance part, such as parking, elevator lobbies, and mailbox areas that attract criminals, as shown in figures 2(a) and 2(b).
- Lighting: It is considered one of the most important aspects of surveillance, in which dark places are one of the most preferable areas for criminal activities. Thus, have a well-lighted area would surely decrease the percentage of attacks.

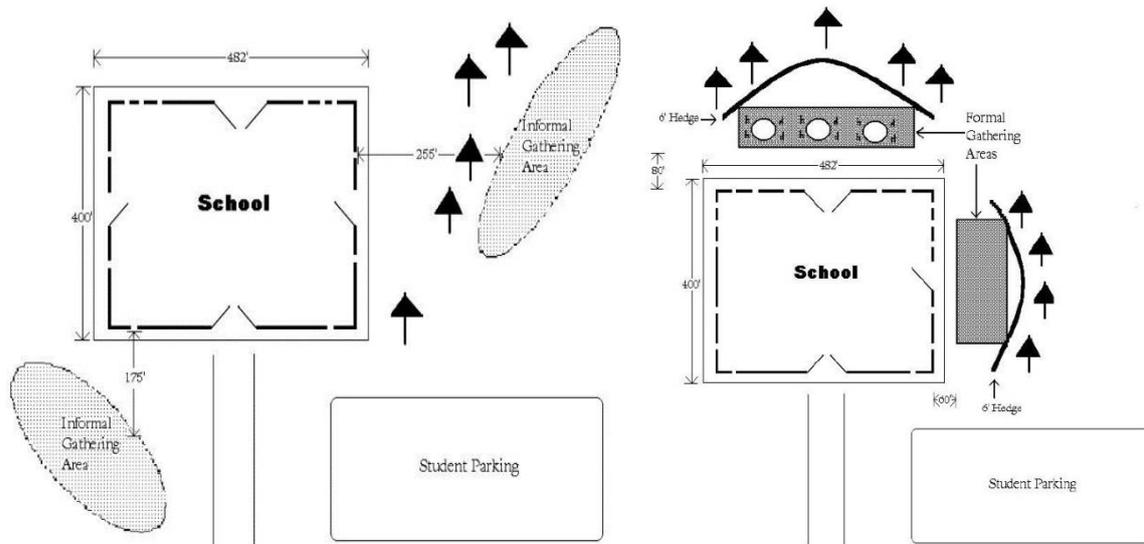


Fig. 2(a) Left: Design composition before re-shaping
 Fig. 2(b) Right: Design composition after re-shaping

3.2.2 Territoriality

Through architecture, using landscape design or any specific feature can give residents the feeling of territoriality of their area, as shown in figures 3(a) and 3(b). This strategy will enhance these people for taking care of this place in addition to giving this area the sense of privacy. This aspect would help in reducing the number of people sharing same entrances, elevators, stairs and other public facilities or maybe having a low fence in a way of having less stranger's entry in the area. (Douglas, 2013)

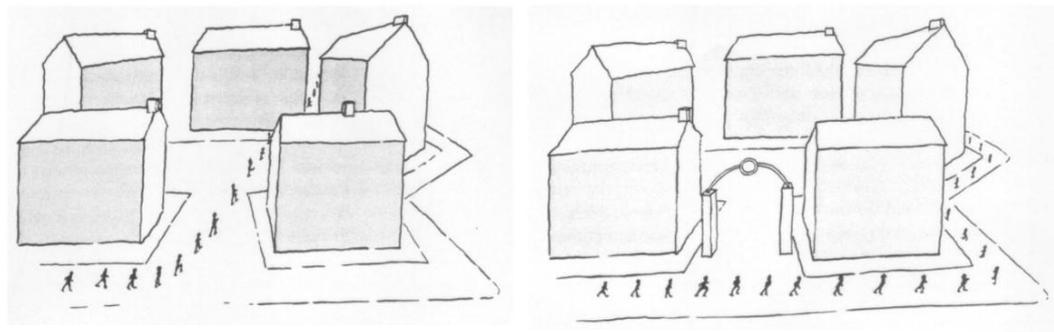


Fig. 3(a) Left: Design without territoriality sense
 Fig. 3(b) Right: Design with territoriality sense

3.2.3 Building Community

In order to enhance the interaction among people and improving the human relations, 'building community' is a figure of interconnection can be created through designing and shaping a well-organized neighborhood's composition. This term may help people in knowing each other in which leading to less isolated social community that may reduce criminal cases.

3.2.4 Strengthening Targets

Manipulating the third dimension of the building design can be effective in catching criminals. Architects can install more secure materials and elements into the building such as deadbolts on lower doorframes, raising fire escapes, reducing size of mailbox opening and installing metal doors and windows, thus having more secure places. (Kaytal, 2002)

After presenting a literature review highlighting a historical background about the presence of crime in architecture and the strategies to prevent it, the paper can use the following research methodology to analyze three case studies trying to conclude general guidelines of 'architecture against crime'.

4. METHODOLOGY

Based on the preceding, the paper can use the deductive method to deduct specific criteria and elements of designing architecture and urban against crime. As indicated in table 1, eight criteria can be used to prevent crimes and violence.

Table 1: Criteria of designing architecture against crime

Source: The authors, 2018

Design Criteria of designing architecture and urban against crime							
Surveillance	Diversity of Building	Buildings Composition	lighting	Interior Composition	Territoriality	Building Community	Strengthening Targets

These criteria will be detected in the following case studies. In the next part, the paper will use three research methods; first - the inductive method by reading references and publications extracting three case studies from different countries. Second - the analytical method by analyzing these projects trying to detect the design strategies of preventing crimes. Third - the comparative analytical method by comparing between the three projects to conclude the common criteria and to deduct general guidelines. To unify the typology of case studies, the paper selects three housing projects for analysis. The reason beyond choosing the residential function is the fact that the highest percentage of crime is taking place in residential complexes and apartment buildings. Another reason of selection is the urban scale for the three projects. The research will not analyze a single building; rather it will detect the urban treatments and elements that urban designers provided to prevent crimes. Through analysis, the research will explain the impact of architectural design in crime control as follows.

4.1 Public Housing WOES, New York City, USA, 2012

After World War I, in the Modernism era of architecture, the government of New York City decided to execute multiple of public housing projects affording apartments for workers and the low-income people. The first public housing project in New York City was built in 1935. It offered 122 rent-apartments to be the start of this huge increasing movement of public housing. As of 2012, according to figures compiled by Mark Jacobson for New York Magazine, these housing projects have extended to 334 projects, 2602 buildings, nearly 180,000 apartments, and 400,000 to 600,000 tenants. (Price, 2014)



Fig. 4 WOES Public Housing is a crowded prototype composition

Source: Photographed by Alan Chin, January 12, 2017

These public housing projects are considered the home of the poorest people in NYC in which they afford acceptable rent-apartments for working-level people in the city. Crime and violence rates were very high in these areas, in which crime was rampant, and drugs became available for everyone. Children have grown up having a little access to educational opportunities, which usually leads to criminal pathways. These public housing compounds are designed mainly for accommodating the maximum number of residents. As shown in figure 4, the composition is defined by huge number of similar prototype buildings that are arranged in a way that provides a public green space for every cluster. Each cluster has buildings of eight floors with maximum number of apartments using every space for residency. In such

harsh visual environment, clusters are consisted of rentable and low-level apartments attracting poor people, in which they may occupy this building or area for a limited time. In addition to the fact for having huge number of population in the area that occupy the single building or even the whole compound, people would have difficulties to define the meaning of territoriality. Residents have felt with insecurity afraid from being victims to any violent act. Besides, the intended green spaces with the growing trees and green elements have turned to be the most critical spots that attract criminals. Surveillance is nearly unavailable in these parks, dense trees that block the visual continuity, which helps criminals in having more private-unseen areas, shown in figure 5. According to the dense population, architects of the compound designed many circulation-elements such as stairs, elevators, and lobbies, which increased percentage of dangers. (Price, 2014)



Fig. 5 High and dense green elements in the surrounding
Source: Photographed by Alana Samuels, May 19, 2015

In addition to the long pathways to the building, floors' long corridors, shown in figures 6(a) and 6(b), have slight lighting, which raises opportunities for having more attraction for violent actions.

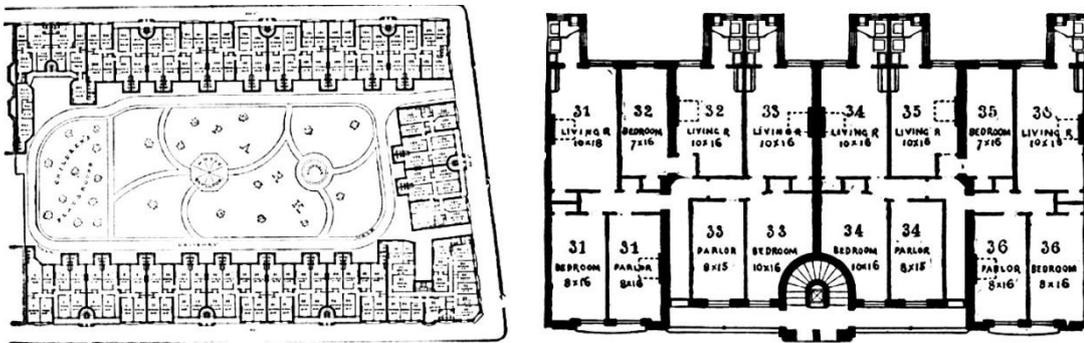


Fig. 6(a) Left: Master plan of a cluster in the NYC Public Housing
Fig. 6(b) Right: Typical floor plan of one of the buildings

Therefore, it can be figured out that these residential clusters have witnessed crimes for a long time. In 2017, the New York City Housing Authority has released new design guidelines for these clusters through updating elevators, redesigning landscape, offering many seating areas, installing steel fences, changing the lighting system and other subtle treatments invisible to residents. (Kinney, 2017)

4.2 Sejong Public Housing Development, Sejong City, South Korea, 2013

Sejong Public Housing Development is a winning proposal of the 2-2 M2 Block Public Housing Development competition, which is designed by New York, based H-Architects. The Korea Land and Housing Corporation arranged the competition for celebrating their 50-year housing development. It is a project of 77000 m2 in Sejong City, South Korea. H-Architects Office aims to avoid rigidity in design, shown in figure 7(a), giving more interactivity and communication between residents by opening opportunities for choosing their own location and community. The project focuses on fulfilling three main

strategies; (1) creating interactive pathways between residential units and other facilities, (2) providing more communicational and interactive spaces between units, (3) allowing variety of building layout units. Thus, more connectivity between residents would surely decrease the number of criminal-action possibilities. The design is based on low-density residential units with a variety of blocks that vary from two to six stories building maximum. Thus, accommodating less number of residents in each block decreases the number of people sharing the same facilities, which creates safer places. This strategy would also play a main role in having more connectivity between people sharing the same place in a way that facilitates the idea of identifying their neighbors and people sharing the same block. (H-Architecture, 2015)



Fig. 7(a) Left: Sejong Public housing perspective shot
Source: H-Architects, 2015

Fig. 7(b) Right: Master plan of Sejong Public housing
Source: H-Architects, 2015

As shown in figure 7(b), these blocks are connected between each other by alleys that pass through small open spaces. Passing through these alleys and open spaces, residents would enjoy having more community spaces that can provoke them for socializing. The placement of staggered blocks may play an important role in increasing surveillance for more security and self-policy among residents. In a strategy for creating more interactive spaces between residential blocks, the design is based upon instead having single pathways for individual's blocks and isolated spaces, the proposal is to share open public spaces for enhancing interactivity through these linked spaces, shown in figure 8. These spaces vary between 10 m2 to 1000 m2 for different types of events. Ground floors are designed with an opportunity for having outdoor extension such as terraces or exterior open green areas, or even low-rise fences. This strategy can increase privacy and territoriality for the ground floor residential units in a way that will obviously increase crime control and prevention.

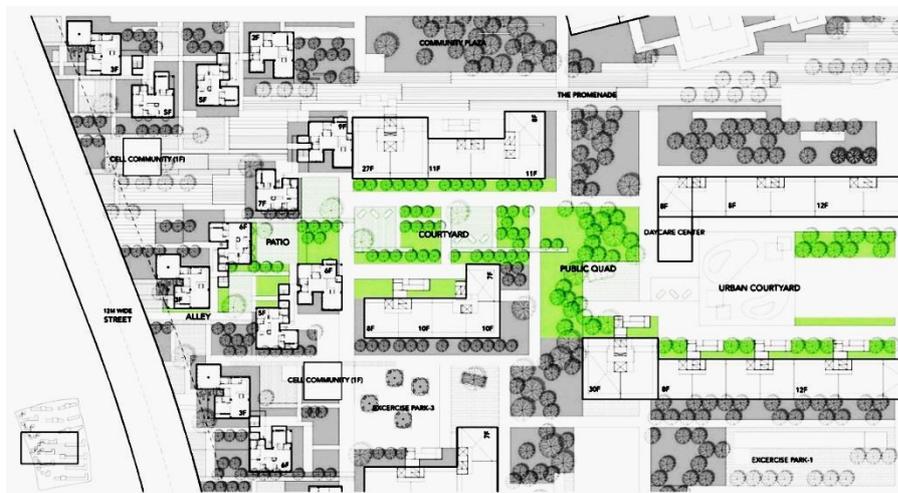


Fig. 8 Zoom in plan on Sejong Public housing representing the relation between buildings and green areas.

Source: H-Architects, 2015

This housing development project has a well-visually-coherent composition with more interaction between people throughout several green open spaces and community and leisure facilities that support enhancing interactivity among residents. This design strategy enforces the sense of territoriality, which is the most important aspect in such project. (H-Architecture, 2015)

4.3 Abode at Great Kneighton Cambridge shire Housing Project, Cambridge, UK, 2015

This project develops a new housing and mixed used community compound containing 450 sustainable new homes on the edge of Cambridge. Great Kneighton is located 3.7 Km south of Cambridge. As shown in figure 9, the vision is to provide a well-developed area that consists of new homes, in which the compound is designed upon having a well interactive area that contains green public open spaces, that accompanying provision of sports and recreation, health and community, education facilities, and local shopping facilities. The design aims to provide a variety of housing types fitting all kinds of people in an arranged hierarchy of spaces. The project insures the best welcoming entry to the whole compound giving a formal sense of arrival at site entrance. The territoriality feeling that overwhelms residents is the most important strategy in the design planning, in order to have both relaxation and secure feeling. (Proctor & Matthews, 2015)



Fig. 9 Master plan represents a well-organized urban composition

Source: Courtesy of Proctor and Matthews Architects, 2015

The design is a well-considered theme of the project upon using simple and controlled palette of building materiality of brickwork, and highlighted with panels of textured brick. Also having a large formal "Great Court" landscaping, that plays an important role on the gateway of the project. All these aspects help in building and shaping up a special character for the project and having more neighboring and social development. The project is considered a mixed-used area, providing different kinds of spaces that are essential for everyday life. In addition to public and residential areas, the compound contains educational green-public-open spaces, educational facilities, sports and recreation, health and community facilities, and local shopping facilities that enhance the public movement in along the day, thus having more socializing and secure public spaces that lead to more interactivity between residents, as shown in figures 10(a) and 10(b). Hierarchy of different public and private places helps in creating public spaces leading to more socializing among residents.



Fig. 10(a) Left: Adobe project house prototype and privacy manner.

Source: Proctor and Matthews Architects, 2015

Fig. 10(b) Right: Interactive pedestrian pathway between houses.

Source: Proctor and Matthews Architects, 2015

As shown in figures 11(a) and 11(b), building up central landscape as a public “Great Court” with parallel green corridors running perpendicularly to every single house, creates a safe relation between all compound spaces. The green pedestrian pathways between units create more interaction between outdoor and indoor people through the direct eye connectivity. This connectivity between private spaces of units and the outdoor corridors leads to more shared spaces, thus having more surveillance between every single space that enhances people for having outdoor activities at any time with having a full-secured area.



Fig. 11(a) Left: Great Court interactive space

Source: Courtesy of Proctor and Matthews Architects, 2015

Fig. 11(b) Right: Adobe Project building and green areas master plan composition.

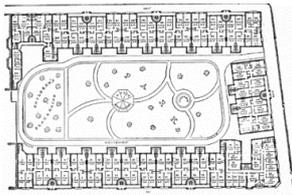
Source: Courtesy of Proctor and Matthews Architects, 2015

In this compound, there are several types of residential units opening up the opportunity for high and low income people. The private unit is consisted of a single-family private house. This unit includes a private front-yard of the house, and an elevated terrace on the rear side, approaching a view on the green pedestrian pathways, which creates more shared areas. Even in case of low class units in a two to three-story maximum apartment building, the spaces around have more control on the shared public facilities like the elevator and stairs in which six houses may share the same facility. This help in containing more secure private spaces in both low and high residential units. Depending on sustainable techniques of energy consumption such as having solar power systems that helps in lighting up the neighborhood all night time for having more clear view and more secure spaces. (Proctor & Matthews, 2015)

5. DISCUSSION

In the previous case studies, many criteria have been detected. Architects and urban planners of the three residential projects have differentiated in setting urban and sustainable treatments to reduce crimes and violence. Delicate relations between indoor and outdoor spaces are considered grey zones that criminals can penetrate. Table 2 represents the comparison between the three case studies as follows.

Table 2: Comparison between the three case studies
Source: The authors, 2018

Project	NYC Post-War Public Housing	Sejong Public Housing Development	Abode at Great Kneighton
Architect	Government Mainly	H-Architects	Proctor and Matthews Architects
Date	Started in 1935, proceeded 2012	August 2013	2015
Location	Ney York, USA	Sejong City, South Korea	Cambridge, UK
Plan			
Surveillance	Bad surveillance due to tall buildings/narrow pathway/high trees	Maximum public open green spaces	More interaction between public and private spaces
Diversity of building lighting	Just residential units Bad lighting	Many recreational facilities Good lighting	Many recreational and educational facilities Good lighting
Building Design	Bad relation between building and pathways	Good relation between facilities	Super relation between facilities
Territoriality	Low rate of territoriality	Medium rate of territoriality	High rate of territoriality
Building Community	Slight interaction between people	High integration	High interaction
Strengthening Targets	Good secure materiality but without security systems	Good target strength	Good target strength
Interior Composition	Long corridors with public stairs and elevator	Mostly private and secure entry	Maximum secure entry

6. CONCLUSIONS

The paper may set a group of conclusions as follows:

- a. Design of low-income residential units should be designed upon taking into consideration the social impact not just having shelters for all whom in-need.
- b. In designing projects, architects and urban planners concern firstly with the concept, vision, and aesthetic composition. They should also give much concern with the surrounding environment in order to decrease crime issues.
- c. The following guidelines can be a design manifesto for 'Architecture against Crime':

- On the 'Human' scale:

Before setting the design of any project, architects have to make a judicious study on the intended users classifying them into certain categories. This study will briefly highlight users' identities, behaviors, attitudes, and their expected movements. This study should also include analyzing the threatening forces coming from the surrounding neighbors. After executing housing projects and before selling residential units, a detailed study should be made on buyers knowing their personal information, employments, financial situations, and social circumstances. These social studies can predict the possible types of crimes, which can be reduced by accommodating users into the right location in the project. Concentrating on building purity in function without taking into consideration

the social interaction and surrounding activity impact would lead to a failure-design in the humanity scale.

- On the 'Urban' scale:

Urban designers can set clear well-organized composition of residential clusters trying to avoid (multiple alleys, isolated-unseen areas, sharp edges, long passages, and dark spots), regardless the assembly approach of units 'fragmented, staggered, radial, linear, ext.'. The shared public spaces should remain open without barriers to create a clear vision, which decreases chances of violence. Network of car-roads and pedestrian walkways should be monitored, controlled, and secured.

- On the 'Building' scale:

Many criteria should be taken into consideration in designing the single building. Light must be available 24 hours in the circulation elements (staircases, elevators, corridors, lobbies, entrances, and exits). Corridors should be designed short and direct with clear vision. Fire escape exits should be accessible easily through these corridors. Entrances and exits have to be well-secured using high technology of locks if possible. Walls under windows should be designed high in case of luxurious buildings. Importantly, (ground floor, basement, and roof) are the three floors that must be very well monitored and controlled. In special projects such as; banks, malls, hotels, prisons, jewelry shops, and luxurious buildings, there are definitely other consideration for protection and safety like (thickness of glass, thickness of walls, number and area of openings, and level of each floor).

- On the 'Landscape' scale:

On the outer fence, specific type of plantation can protect users such as; Cactus, Ficus, Cypress, and others. Green natural elements can play the role of incubating people in safe areas. In public spaces, high shrubs may be barriers so they are not welcomed elements. For the hard-landscape of pergolas, fountains, stairs, kiosks, and fences, architects should select appropriate materials and shapes providing the maximum range of safe built environment.

- d. Finally, it can be confirmed on Winston Churchill's statement, "We shape our buildings, and afterwards, our buildings shape us", in which architectural design would be the master of redirection the social level in cities.

REFERENCES

- Barry Poyner, (1983). "Design Against Crime: Beyond Defensible Space," Oxford, UK: Butterworth-Heinemann.
- Edward L. Glaeser and Bruce Sacerdote, (1999). "Why is there More Crime in Cities, " Journal of Political Economy 107, no.6, part 2, pp. 225-258
- H-Architecture, (2013). "H-Architects winning proposal for the Sejong Public Housing Development competition", bustler, accessed November 15, 2015.
http://www.bustler.net/index.php/article/h_architectures_winning_proposal_for_the_sejong_public_housing_developmen_t
- Jen Kinney, (2017). "NYC Releases Design Guidelines for Public Housing", January 12, 2017, a blog published on the link: <https://nextcity.org/daily/entry/nycha-design-guide-public-housing>
- John Douglas et al., (2013). "Crime Classification Manual: A Standard System for Investigating and Classifying Violent Crime," London: Wiley.
- Lawrence Fennelly et al., (2013). "Crime Prevention through Environmental Design," Oxford, UK: Butterworth-Heinemann.
- Neal Kumar Kaytal, (2002). "Architecture as Crime Control," an article published in 'Yale Law Journal' 111, issue no.5, pp. 1046-1089
- Omagano Adelina Kankondi, (2015). "Design against Crime: Exploration of Opportunities for Design Interventions to reduce Crime," Saarbrücken, Germany: Lap Lambert Academic Publishing.
- Oscar Newman, (1973). "Architectural Design for Crime Prevention," National Institute of Law Enforcement and Criminal Justice, U.S. Department of Justice.
- Paul Santana et al., (2009). "Crime and Urban Environment: Impacts on Human Health," a paper presented at the City Future Conference, Madrid, Spain.
- Proctor and Matthews, (2015). "Architects Adobe Great Kneighton Project," a project uploaded on the official website of Proctor and Matthews architects, accessed November 15, 2015
<http://www.proctorandmatthews.com/project/abode-great-kneighton>
- Robert Kanigel, (2016). "Eyes on the Street: The Life of Jane Jacobs", Alfred A. Knopf; 1st edition, New York, USA.
- Rowan Moore, (2012). "Pruitt-Igoe: death of the American urban dream", an article published in 'The Guardian', UK, Sunday 26 February 2012. The article is uploaded on the link:

<https://www.theguardian.com/artanddesign/2012/feb/26/pruitt-igoe-myth-film-review>

- Richard Price, (2014). "The Rise a Fall of Public Housing in NYC," Guernica Magazine of Art and Politics.
- Samuel Walker. (2010). Sense and Nonsense about Crime, Drugs, and Communities: A Policy Guide. Belmont, California: Wadsworth Publishing.
- Shuhana Shamsuddin and Natasha Hussin, (2013). "Safe City Concept and Crime Prevention through Environmental Design (CPTED) for Urban Sustainability in Malaysian Cities," American Transactions of Engineering and Applied Sciences Journal 2, issue no.3, pp. 223-245.