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DESIGN AGAINST CRIME: FEAR AND DETERRENCE AS MOTIVATORS FOR CRIME PREVENTION DESIGN

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ABSTRACT

Purpose: This paper reviews various methods of deterrence measures integrated into design for crime prevention. It discusses crime prevention concepts such as surveillance and detection methods, protective barrier systems and security lighting. The paper draws attention to the place of fear in the concept of deterrence. Fear has always been one of the driving forces behind human aspiration and activity. It drives people to take action either for self-interest or self-preservation. Fear of victimisation drives people to take precaution to prevent further victimisation while fear of apprehension and punishment could deter criminals. It argues that the use of design and physical security measures can help to achieve deterrence.
Design/methodology/approach: The method adopted was narrative review of existing literature and observation of existing practices for deterrence in Abuja, Nigeria. Observation is a qualitative research method that helps a researcher to have a deeper understanding of the phenomenon under study.
Findings: The paper presents a deterrence framework that consists of three components of crime act considerations, deterrence considerations and deterrence application (crime containment). The framework links together the theories of fear of crime, deterrence and crime opportunity. The study noted that the application of turnstile access control mechanism integrated into design helped to enforce orderly pedestrian entry into the Federal Capital Development Authority complex while allowing security to closely observe employees and visitors entering the complex. The result also indicates that the design of some buildings allow for surveillance shadows which could lead to security breach.
Originality/value: It concludes that by leveraging on the principle of fear designers of buildings, the built environment and security products can contribute immensely to crime prevention and reduction. An understanding of the Crime Containment Framework will increase crime prevention practitioners' knowledge and effectiveness. Deterrence measures, leveraging on situational crime prevention, should be focussed on crime settings by increasing the difficulties and risks of committing crime.

Keywords: Crime prevention; design; deterrence; fear; punishment.

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1. INTRODUCTION

Society is a complex network of groups, organisations and institutions expressive of human relationships. The urban society, because of its nature, attracts to it people of diverse cultural, racial, religious and economic backgrounds in search of potential and actual opportunities available among divers institutions, organisations and groups. This has also produced opportunities for crime due to its anonymous setting. If there is an absence of options crime becomes a means of survival, especially in large cities. Cities are becoming more and more attractive to people because of their financial power, economic opportunities, wealth, places of interest and job opportunities that offer a standard of living many people yearn for, or the life style they promise (Burdett and Sudjic, 2011). The urban space, therefore, assumes a leading role in providing people identity and a sense of comfort (Karim and Azizi, 2015). Fear of crime is an important issue that reduces access to public spaces and restricts interaction with these places (Rezvani and Sadra, 2017). Fear has a profound effect on the spatial form of a city, neighbourhoods, building designs and spatial distribution of population. It affects interaction within the urban space. How designers form space can affect social processes greatly. The spatial arrangement of urban space is a reflection of social practices and relations.

The demands and operations of the social environment have a direct bearing on how architects design buildings and the built environment, especially the urban space. Architecture gives order to the built environment and by extension helps to influence social patterns and human interactions. It creates a meaningful structure for human activities. Different settings with different architectural design patterns have different social consequences. Thus architecture exerts a great influence on how we act or react in different settings. Human behaviour, on the other hand, affects architectural design which in turn influences the desired human behaviour (Mckay, 2014). The built environment can be manipulated through the planning and design to control social patterns. Evidences from research and practice show that undesirable social patterns of behaviour such as crime can be influenced by environmental design (Reynald, 2014; Jansen, et al., 2017; Mahmoud, 2018).

Since crime issues are not stagnant it is necessary to have some level of continuous actions designed to respond to changing urban environment, security dynamics, fears and realities. An outcome of negative security and safety dynamics is fear. Fear is the direct and immediate reaction to crime. It is the fear of criminal victimisation that drives people to take measures to prevent it. On the other hand, the fear of apprehension and punishment could deter a person from committing a crime. The deterministic model of human behaviour assumes that actions of people are determined by forces and factors operating on them. It argues that current behaviour of individuals can be influenced by the current situations they are in and the forces they encounter in those situations (Rubin and Babbie, 2009). This implies that if a would-be offender encounters a situation that is inimical to his operation he is likely to abort the criminal operation. This paper discusses the concept of fear and deterrence as powerful drivers of architectural design for crime prevention and examines the various ways that deterrence measures are applied in buildings.

1.1. Concept of fear as a motivator for crime prevention design

Fear of crime is a social phenomenon that has serious implications on the well-being and quality of life. In-spite of the efforts of relevant security agencies fears of crime and concerns about security and safety have not reduced. The media plays an active role in generating feelings of insecurity through embellishing crime reports and misleading opinions on crime and criminals. Media influence on society has grown dramatically with the advances in information technology. Information received about insecurity plays out in the mind of people with the feeling that what happens elsewhere is likely to happen where they are. This leads to panic over criminal activities that harm will happen to the collective and individual safety if something is not done. Fear is an internal feeling and arises when sensory systems in the brain have determined an external stimulus poses a threat (Moller, 2017). Furthermore, threat detection triggers a general increase in brain arousal which can result in altered threat processing: fear and anxiety disorders. Fear is an emotional response to threat and victimisation. It is a psychological reaction to present or future danger as a result of recent or past event or problem characterised by a feeling of worry, anxiety and concern. It is the feeling that something bad or dangerous will happen if adequate measures and precautions are not taken.

Fear is a reality that has physical, social, psychological and health dimensions. Crime is a key factor that is responsible for creating and intensifying it. Crimes involving the use of weapons and explosive devices could cause emotional trauma and nightmare. Pearson and Breetcke (2014) maintain that there are clear evidences provided by researchers that fear of crime could result in various mental health-related issues such as anxieties and psychological distresses. These mental health issues could also include degenerating behaviour, mood swing, delusion, hallucinations and disintegration of personality. Fear of crime could also result in detrimental physical health problems (Pearson and Breetcke, 2014; Moller, 2017). Fear can exhaust an individual both physically and emotionally thereby weakening the immune system. Some researchers also point out that the results of criminal acts are fear of victimisation or re-victimisation leading to the likelihood of poorer physical and cognitive functioning (Warburton, et at., 2006), pitiable emotional well-being and reduced standard of life (Stafford, et al. 2007). The implication of the afore-mentioned is that fear has the capacity to affect the productive output of individuals.

Hebb and Donderi (2013) posit that fear increases with intellectual capacity and argue that the level of the dread of danger is directly proportional to the information and awareness of danger. This suggests that where no knowledge of danger exists fear ceases to exist. Emotional reaction to threat (of victimisation and apprehension) increases with exposure to information. This also suggests that the more informed a person is the more he or she is susceptible to the fear of crime and/or apprehension during a criminal act. Generally, victims of crime, by reason of fear of further successful attacks adopt security measures in design and construction of buildings such as fence and gates as crime prevention measures. The perception of the certainty of being recognised and apprehended could increase the possibility of crime prevention and reduction. This perception depends on the offender's knowledge of the implication of apprehension (conviction, punishment, shame, loss of freedom and proceeds of crime, ostracism, loss of respect).

Some observers agree that only a small part of a person's knowledge is in the conscious mind at a particular period and that it is the unconscious motivations rather than the conscious that determines actions (York and MacAlister, 2015). The conscious

mind is constantly relating with the unconscious mind which is a storehouse of all the knowledge that a person has accumulated in various ways. Past experiences together with the successes, failures, consequences and feelings are pushed into the conscious mind when an opportunity presents itself. It is the unconscious mind that influences actions most. Furthermore, in today's society man is more susceptible to outside influences and therefore his attitudes can be shaped without his being aware of it. Using this principle, the environment can be manipulated by design to trigger fear of apprehension and punishment in a would-be offender and cause him to abandon his criminal intentions.

Roth and Clark (2014) argue that the human mind is configured to search for implication and significance of the information it receives. This has a link to the desire to survive. The mind organises all information it receives into a meaningful form in order to interpret it on the basis of evaluated information already stored in it. Furthermore, the mind organises data according to certain built-in preferences. This principle is the basis for an effective incorporation of security requirements into architectural design for crime prevention. Above all other considerations, the criminal prefers not to be apprehended. The architect designing for security should carefully and creatively exploit this concept. This concept should be adapted for surveillance, barrier placement and target hardening.

2. THEORETICAL FRAMEWORK

2.1. Models of fear of crime

Previous studies on fear of crime indicates the three principal models that address fear of crime as victimisation or vulnerability, disorder and social participation/integration theories (Maskaly, 2014). Okunola and Amole (2012) classify models of fear of crime into facilitators of fear (vulnerability and disorder theories) and inhibitors of fear (social participation theory). The victimisation theory claims that if a place is vulnerable to criminal activities it will facilitate the fear of crime and victimisation in the users or visitors to the place. It argues that increased exposure to victimisation and fear could be as a result of high crime rates, economic problems and lack of resources to take reasonable precautions. This theory suggests that fear might be redefined in the light of the extent to which the reactions to fear are found to be possible/impossible or useful/un-useful after considering costs and options (Garofalo, 1981). The vulnerability of people indicates that they are at risks of becoming victims of crime (Okunola and Amole, 2012). This model strongly appeals to the need for a holistic architectural design that provides for adequate protective measures to reduce the sense of vulnerability.

The disorder model is drawn from the "broken windows" theory that poor property maintenance leads to a downward spiral of neglect, deterioration and abandonment which attracts criminal elements to a place, thereby increasing crime and fear of it (Kelling and Benton, 2015). This theory argues that human behaviour can be influenced positively by the perception of order. Designs should allow for ease of maintenance. Some designs make it difficult to access some parts of a building for proper maintenance. Specification of materials with short life-cycle leads to fast deterioration of the building and increases maintenance problems.

The social participation theory suggests that certain responses to crime can reduce or inhibit the basis for fear. It argues that increased participation by members of the

community with neighbourhood cohesion can diminish worry over crime (Okunola and Amole, 2012). It involves using community control mechanisms such as police presence and residents' participation in crime prevention through collaboration with relevant law enforcement agencies and other activities such as neighbourhood watch. Participation of individuals and communities are critical to solving criminal issues (Sakip, *et al*, 2012, Maskaly, 2014). Available evidence suggests that there is a link between community cohesion where people participate to exercise control over public spaces to deter criminals and the rate of crime in the community (Levy, *et al*, 2014). Review of evidence also shows that the higher the levels of collective involvement within a community, the lower the crime rates (Basia, 2013; Levy, *et al*, 2014). This strongly suggests the need for an effective and all-inclusive stakeholder participation in crime prevention.

The theory addresses participation of only residents of neighbourhoods and communities. In this regard it has failed to capture specialised groups such as architects whose works (design of the buildings and shaping of spaces to form the physical setting of the communities) bring about social interactions. This theory needs to recognise the specialist contribution of built environment professionals in addressing the issues of crime and fear of it. Their inclusion can greatly and practically enhance and enrich the process of crime prevention in communities as participants. This paper, therefore, considers architects and built environment professionals as a prime group in the social participation model as their inputs can reduce the fear of crime.

2.2. The theory of deterrence

Fear undergirds and drives the theory of deterrence – fear of recognition, apprehension, punishment and the associated social and moral implication of the arrest and/or punishment. Deterrence is a psychological approach to crime prevention that is directed at the decision-making process of the criminal with the intension of making him/her to decide against a criminal act (Ebong, 2017). Studies reveal that the chance of being arrested is a much more effective deterrent than punishment. Kennedy (2009) observes that the theory of deterrence assumes that human beings are rational enough to ponder the consequences of their actions and to be influenced by those consequences. This theory was developed from the works of Thomas Hobbes (1588 – 1678), Cesare Beccaria (1738 – 1794) and Jeremy Bentham (1748 – 1832). These classical theorists drew attention to the facts that actions aimed at preventing crime is more effective deterrent than punishment; human beings are rational beings who weigh cost and benefit before committing any crime; and that the permeating self-interest nature of human beings could lead to crime.

Over the years, other theorists have either built on it or argued against it. An important derivative of this theory is the rational choice theory of crime prevention. Human beings as rational creatures are endowed with the freewill to make decisions. This privilege of choice is influenced by the benefits and cost of their actions (Kennedy, 2009). Furthermore, it is the behaviour with the greatest advantage that has the utmost likelihood of being acted upon. Deterrence theorists presume that human beings are self-interested and egocentric rational thinking beings. Consequently, deterrence becomes effective with the principle of certainty. This principle is based on the premise that the possibility of being caught could tilt the decision balance in favour of crime prevention. It is the perception in the mind of a would-be offender of the possibility of being caught and punished either during the crime act or after. Paternoster (2010) argues that the deterrence theory is more concerned with the perception of sanction threats and the relationship between the perception and behaviour.

This assertion, therefore, makes deterrence a perceptual theory that operates more at individual level.

2.3. Opportunity theories

Crime prevention through Environmental Design (CPTED) originates in architecture and planning and draws on many crime-related theories to strengthen and elaborate its concepts and practices (Ekblom, 2013). An understanding of the factors responsible for criminal tendencies alone does not clarify how crimes occur. To explain crime, it is imperative to understand the relationship between criminal tendencies and opportunity. Criminal disposition must interact with opportunity for a crime to occur. The aim of CPTED is, therefore, to reduce these criminal opportunities. Opportunity-based theories are also known as situation-based theories or theories of the crime event. While the theories of crime and criminality deal with the individual's tendency to commit a crime, the opportunity-based theories are concerned with the actual crime event and the environment and circumstances within which the crime occurs. Therefore, the criminal is regarded as one element among others – victims, bystanders, environmental conditions - in the crime chain (Summers, 2012). The Home Office (2016) notes that conclusive evidence indicates that the availability of opportunities to commit crime increases the incidences of crime. This justifies the assertion that crime prevention is effective when opportunity to commit crime is removed.

All the opportunity-based theories maintain that environmental characteristics impact in various degrees on the occurrence of a crime because of the opportunities created for a motivated criminal. In other words, it is the environmental features that provide the needed opportunities such as, easy access, attraction, poor asset protection and others, for crime to occur. These theories stress the interaction between the criminal and the place (environment and location) that the crime is committed. The following theories have been identified to form the current theoretical base of CPTED. They are relevant to this paper because of their emphasis on place and opportunity.

2.3.1. Crime pattern theory

The theory explains why crimes occur in certain locations. Brantingham and Brantingham (2008) argue that crime acts are not random events but occur in time and space when the activity spaces of the target and offender overlap. They contend that crime events are either opportunistic or planned and that places are either crime generators or crime attractors. Andresen (2014) examines the configurations of activity of a place in terms of 'paths' (roads and other linkages), 'nodes' (activity areas) and 'edges' (outlying areas) to determine places that are crime generators or crime attractors. A lot of crimes are known to take place because a lot of people pass through a place or are drawn to it because they consider the place to be of low risk, less difficult to operate and more rewarding to criminal activities (Ekblom, 2013). From the perspective of crime pattern theory, a criminal may find it difficult to commit a crime if a physical barrier prevents him from familiarising himself with the area beyond the barrier (Clare, Fernandez and Morgan, 2009). Therefore, physical barriers could make an area beyond the barrier an uninviting target.

2.3.2. Routine activity theory

This explains how routine activity in a place could lead to more or less crime. Changes in an environment can affect the number of targets or capable protectors against crime can

affect crime positively or negatively. The routine activity theory's concept of guardianship has been an important theme of environmental and urban design theorists and architects who have variously considered how the physical environment can promote or discourage crime with emphasis on the importance of natural surveillance or what Jane Jacobs referred to as 'eyes on the street.'

2.3.3. Rational choice theory

The theory explains the criminal act from the perspective of the criminal who seeks to commit a crime by asking questions about the reward, the method to be used, the ease, the risks involved and alternative crime if prevented from committing the crime. It is more concerned with the thinking process of the criminal and how he evaluates the opportunities available for the crime. This theory helps in considering the different methods of reducing criminal opportunities. The situational crime prevention methodology draws from this theory with four major objectives for preventing crime - increase the difficulty of committing crime; make it riskier to commit crime; make smaller the anticipated proceeds; and eliminate justifications for crime. However, this theory fails to take into consideration the fact that human beings are not always rational nor do they always make rational choices, especially under the influence of substances. There are several issues competing with reason such as severe hunger and peer and economic pressures which should be controlled for. However, since architecture can influence behaviour it is reasonable to specify and integrate crime prevention mechanisms into architectural designs and buildings with the expectation that majority of the people with criminal intentions will be influenced to abandon their crime targets. In cases where these place and opportunity-based strategies do not stop crime, it may provide delay and monitoring measures that allow for response and the likelihood of arrest.

2.4. The crime containment framework

The Crime Containment Framework presented in Figure 1 is a conceptual framework developed on the premise that a criminal or would-be offender considers the risks and rewards of a criminal act while assessing the ease or difficulty of committing the crime. The framework is multi-layered and links together the theories of fear of crime, deterrence and crime opportunity. It considers vulnerability of the target or victim to be closely linked to an offender's motivation to commit a crime at any available opportunity. The victim/target, motivated offender and a crime opportunity are grouped together to form the core of the framework. This known as the crime act consideration stage. The second stage in crime containment links deterrence theory, which is concerned with the perception of sanction threats and the relationship between the perception and behaviour, with opportunity theories that seek to threaten opportunities to commit crime. Deterrence measures, leveraging on situational crime prevention, focuses on crime settings by increasing the difficulties and risks of committing crime. The application of the physical elements of security is expected to have a psychological effect on the would-be offender to convince him or her to abandon the criminal act for fear of sanction threats. The question is what do these mechanisms communicate to the would-be offender? Since it has been acknowledged that self-interest is a driving force for crime, then deterrence measures should be a driving force for self-preservation. The deterrence application (crime containment) component forms the outer layer. This layer links fear of sanctions with the decision against committing the crime, which is the major focus of opportunity theories.

2.4.1. Discussion of the framework

When a would-be offender is considering a crime act he must locate a victim and a target that has the anticipated reward. He has to be motivated enough either by greed, hunger, peer pressure, increased criminal reputation or any other factor or combination of factors to want to commit the crime. Then he must look for a suitable opportunity to commit the crime. For deterrence to occur there must first of all be a law to make the anticipated act illegal with spelt-out punishments. A published law, with the intent and purpose made known will make the would-be offender to know the full implication of his action.

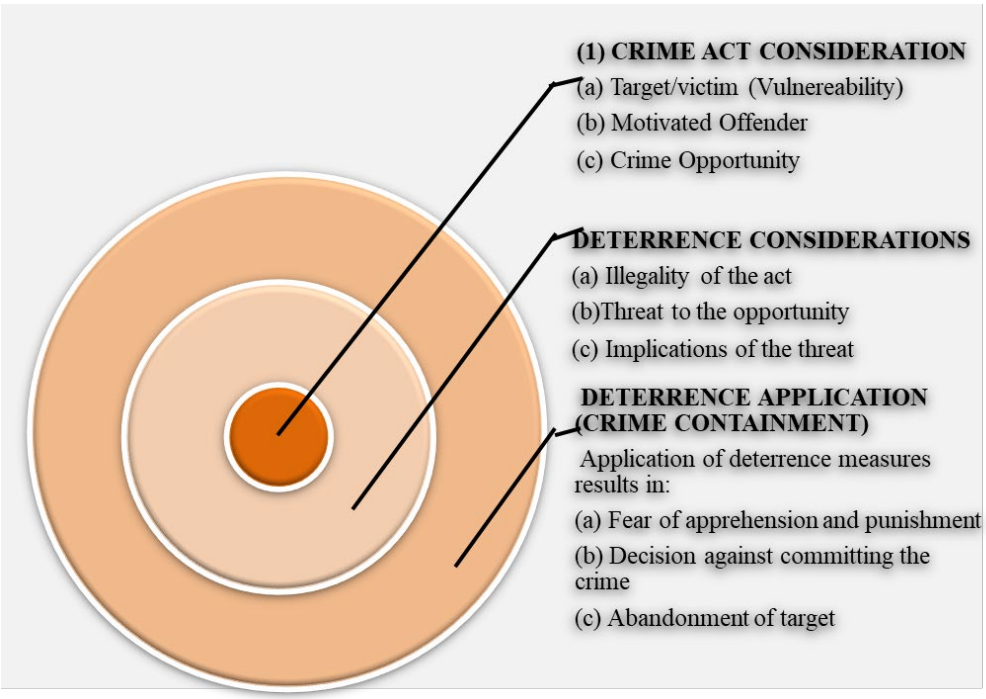

Figure 1: The Crime Containment Framework

A very important aspect of the deterrence consideration component is the threat to the opportunity to commit the crime. This involves the design and physical mechanisms put in place to make the criminal opportunity not utilisable through fear of recognition and apprehension. For example, lighting does not stop crime but makes monitoring of an environment in the night easy. It makes concealment difficult so that it is easy to spot an intruder. Target hardening measures increase the difficulty to access a crime target and cause delay for security response to occur. The implication of the threat is that the criminal could be recognised, apprehended and punished. The outcome is deterrence through fear of apprehension which could cause the criminal to abandon his criminal intention. The ultimate aim of deterrence in security design and physical security is crime prevention and reduction, and not punishment. This is different from the criminal justice system that lays emphasis on punishment threat as the major deterrence to crime.

3. MULTI-LAYERED APPROACH TO ENHANCING DETERRENCE FOR CRIME PREVENTION

3.1. Design

The built environment space is physical in nature which allows or restricts human movements and interactions that create the social fabric, functioning and processes of society. This social functioning can be affected by the feeling of safety or danger in a place leading to psychological insecurity. Urban space without its psychological security is just a sole communication artery (Rezvani and Sadra, 2017). Crime prevention should, therefore, extend beyond the physical component to incorporate measures that address psychological security. These measures are closely related to the interplay of the components of the physical form of the built environment (roads, pathways and street networks, design of residential and commercial neighbourhoods, buildings and public spaces where people access and interact physically and visually), urban characteristics and spatial distribution of population and social networks. Fear affects the spatial form of a place. Rezvani and Sadra (2017) maintain that the characteristics of poor and inefficient urban space are the creation of fear and anxiety. This puts the onus on built environment professionals to design functional urban space and structures that effectively and functionally address social functioning of the urban space.

Architectural design can play an important role in addressing the issues of crime by increasing the fear of apprehension and influencing behaviour for crime prevention (Ebong, 2017). Architects and planners can unavoidably influence behaviour through the design and construction of places where people live and work (Lockton, 2011). Investigation of CPTED concepts and principles reveal an age-long method of leveraging the environment through designs that exhibits cues to affect human behaviour (Crowe and Fennelly, 2013). An evaluation of cross-sectional research and quasi-experimental studies by MacDonald (2015) indicates that place-based experiments that manipulate features of the built environment influenced criminal behaviour to reduce crime.

Teeuw and de Boer (2011) argue that direct physical measure through design is the most obvious technique of influencing behaviour and that safe behaviour to counter crime can be enforced through effective surveillance, access control and territorial control. An environment that can encourage normal behaviour and discourage undesirable ones can be created through design (Pirbasti et al., 2015). Design measures should include layers of security and control points, building hardening, material specification and construction techniques, building layout and orientation to enhance observation and views, controlled perimeter, access control, vehicle and people barrier, controlled parking, traffic and circulation and clear zones. Design can channel users to these security screening points which are points of transition from one zone to another. The numbers of these transition points depend on site layout, positioning of building and interior space functions and layout. Plate I shows a building design with blank wall that inhibit surveillance and monitoring of the environment. Blank walls create surveillance shadow. A surveillance shadow is an area outside a surveillance corridor. It impacts negatively on deterrence as offenders are likely to assume that they can access a target without being seen or recognised.

Plate I: A blank wall creates surveillance shadow that could reduce deterrence and compromise security (Residential Building, Wuse II, Abuja). Photo credit: Samuel Ebong

Plate II: A building design with windows that allow natural observation of areas outside the building thereby increasing deterrence (AP Plaza, Wuse II, Abuja). Photo credit: Samuel Ebong

A good design should create surveillance corridors or clear lines-of- sight for natural and/or technology-aided surveillance and reduce surveillance shadow to the barest minimum. Plate II shows a building with properly located windows that allow monitoring of all the surrounding areas.

3.2. Protective barrier systems

Barriers are very important physical elements in site and building protection that should be integrated into design. Fennelly (2012), Baker and Benny (2012) and the US Department of the Army (2001) agree that barriers are useful in defining and protecting the boundary of a facility and activity or area. Fully integrated into the site design, they function to restrict, channel, delay or deny access to a facility or parts of a facility. They also create a psychological deterrent for any person or group of persons seeking to gain unauthorised entry. The US Department of the Army (2001) advocates the use of barriers to help in providing entry control points for identification, control pedestrian and vehicular traffic flow, define restricted and sensitive areas, delay unauthorised entry, prevent monitoring by unauthorised persons and protect assets.

Available evidence suggests that barriers are effective in preventing crime (Levy, *et al*, 2014). However, some analysts have argued that excessive use of physical barriers for target hardening can create a "fortress mentality" causing people to, out of fear, hide behind the barriers thereby rendering people policing of the environment ineffective (Schneider and Kitchen, 2007). Vehicle access control measure should be comprehensive where possible. This should include vehicle speed control and vehicle arrest systems (Plate III).

Plate IV shows turnstile access control mechanism integrated into design to enforce orderly pedestrian entry into a government complex. Man trap building access control mechanism allows one side to close and lock before the other side can unlock and open. It is configured to detect metals and therefore is useful for screening people for weapons as the inner door does not open when a metal is detected. This enables the security personnel to respond appropriately. The man trap building access control door is used by all major banks in Nigeria (Plate V).

Evidence from studies and practice indicate that fence can create territorial control that signals that intruders will be questioned. Engineered blocks and bollards are used as vehicle barrier to increase deterrence and stand-off distance to the use of bomb-ladden vehicles to target the building. Researchers have noted that a fence designed to increase visual continuity effectively increases natural surveillance. (Plate VI and VII).

Plate III: Drop arm security barricade for access control is positioned in front of the gate as a vehicle arrest system (Federal Capital Development Authirity Complex, Abuja. Photo credit: Samuel Ebong)

Plate IV: Turnstile access control mechanism at Federal Capital Development Authority Complex, Abuja. Photo credit: Samuel Ebong

Plate V: Man trap building access control door (Bank, WuseII, Abuja). Photo credit: Samuel Ebong

Plate VI: The fence creates a territorial identity thereby establishing ownership and control of the space within the fence. Engineered blocks and bollards are used as vehicle barrier. These increase deterrence (Ministry of Foreign Affairs, Abuja). Photo credit: Samuel Ebong

Plate VII: Metal fence with visual continuity aids surveillance. Engineered planters are used as vehicle barrier to deter use of bomb-laden vehicles to target the building (Ministry of Finance, Abuja). Photo credit: Samuel Ebong

3.3. Physical security lighting

A number of studies carried out in a variety of settings indicate that there is ample evidence that improved street and external lighting are effective in reducing property crime significantly (Welsh and Farrington, 2006 and 2009a). Other evidence suggests that it is not very effective on violent crimes (Levy, *et al*, 2014). Security lighting permits security guards to visually monitor an area at night (US Department of the Army, 2001). Its use should not be limited to psychological deterrence but, as the situation dictates, for continuous and periodic observation. It should provide illumination for the whole facility, the grounds and the perimeter (Federal Emergency Management Agency, 2007). Lighting reduces opportunities for concealment, covert entry, surprise and makes the work of a potential assailant riskier. It is particularly necessary for sensitive areas, buildings and entry control points that require constant monitoring.

3.4. Surveillance and detection devices

The Close-circuit television (CCTV) is the most common device used for surveillance and detection in crime prevention. There has been an increased awareness and its use as a crime prevention mechanism in recent years. Available evidence generally agrees that CCTV surveillance contribute to crime prevention (Welsh and Farrinton, 2008; Welsh and Farrinton, 2009b). Minnaar (2007) observes that the mining industry and gold/precious metals refineries in South Africa effectively use CCTV as a surveillance and detection mechanism to deter the smuggling and pilfering of products from their facilities. Available evidence also suggests that it effectiveness in deterring crime depends on the extent to which people are aware of its existence (Griffith, 2003; McLean *et al*, 2013). Building design configuration, planting and other landscape features and lighting can also greatly affect its effectiveness. CCTVs should have clear lines of sight for effective observation by guards and other monitoring mechanisms.

Walk-through metal detectors are also appropriate for access control and entry security to detect weapons and other concealed attack devices. The space design should allow convenient placement of the mechanism and work station. Plate VIII is an important access control deterrent mechanism used for delay and detection of weapons.

Plate VIII: M-scope metal detector for access control during a function (This Day Dome, Abuja. Photo credit: Samuel Ebong)

4. CONCLUSION

Fear has always been one of the driving forces behind human aspiration and activity. It drives people to take action either for self-interest or self-preservation. The paper has drawn attention to the important role that fear plays in applying deterrence in crime prevention It has situated fear of victimisation and apprehension as prime factors to be considered and exploited to enhance security in architectural design for crime prevention. Leveraging on the principle of fear designers of buildings, the built environment and security products can contribute immensely to crime prevention and reduction. An understanding of the Crime Containment Framework will increase crime prevention practitioners' knowledge and effectiveness.

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