

## ASSESSMENT OF CRIME PREVENTION MECHANISMS IN PUBLIC BUILDINGS IN AKWA IBOM STATE OF NIGERIA

S.O. Ebong\*, S.N. Zubairu, R.E. Olagunju

*\*Department of Architecture, University of Uyo, Uyo, NIGERIA.*

*Department of Architecture, Federal University of Technology, Minna, NIGERIA.*

\*Corresponding Author: [sebong@rocketmail.com](mailto:sebong@rocketmail.com)

### Abstract

The occurrence of crime is very rampant in the Nigerian society and its multi-dimensional nature is a threat to both national and individual security, safety and development. This paper argued that the environment and building could be designed to deter, delay, detect and deny access to unauthorised users thereby preventing crime. The research methodology adopted for the study was survey research method. Purposive sampling was used. Observation of facilities in legislative and judiciary complexes was undertaken. The findings revealed that only basic crime prevention mechanisms were applied. Critical and important anti-terrorism and high profile crime prevention mechanisms such as protective glazing, vehicle access control systems and barriers among others were not applied leaving the facilities vulnerable to criminal actions involving use of light arms. The test of hypotheses using chi-square with significance at 0.05 revealed that the application of the mechanisms depended on the type of facility. The study concluded that the public buildings and the users in the study area were not adequately secured against high profile criminal actions. It recommended appropriate upgrading of the existing facilities and use of relevant crime prevention mechanisms that can impact on terrorism and general crime prevention through proper collaboration among professional stakeholders.

**Keywords:** Crime, Crime prevention, Mechanisms, Public buildings, Safety.

### Article history:

Submitted: 29/12/2016; Revised: 30/05/2017; Accepted: 11/06/2017; Online: 27/06/2017

### INTRODUCTION

The global trend of population growth and rapid urbanisation has caused crime to become one of the most serious social problems as crime rates around the world continue to escalate (Marzbali et al., 2011). This is further intensified by media reports on crime. Results of studies carried out by Romer et al (2003) show that fear of crime and concern about crime is in part a by-product of exposure to crime-saturated television news. There is also the perception that policing and military actions alone cannot solve the problem as police are unresponsive in many cases or only respond after the crime has taken place. People's aspiration for safer built environment is a challenge to architects to enhance crime prevention. It has also been noted that "creating an environment that is physically and psychologically safe is one of the biggest challenges of the 21<sup>st</sup> century" (Bercovich, 2010, p.3).

Security and safety are essential to the growth and development of any society (Ebong et al., 2014). People desire not only well-designed and beautiful buildings and environments but also places where they can live, work and recreate that is free from crime and the fear of crime. People also desire places they can feel safe to improve the quality of their lives and to enjoy themselves (Ebong et al., 2014). The public building environment in Nigeria is at risk of crimes ranging from simple break and entering and burglary to kidnapping, arson, theft of sensitive document, sabotage of sensitive equipment and bombing of facilities. This is a cause for serious concern while drawing attention to the need for an inclusive approach to crime prevention. Crime in this study means illegal activities that involve stealing from others using any physical means (illegal entry, violence and threats), damage and destruction of property and attacking people. This study assesses architectural response to crime and fear of crime in public buildings using crime prevention through environmental design components such as perimeter protection (territoriality), surveillance, access control, target hardening, lighting, landscaping and fire (arson) prevention.

### PROBLEM STATEMENT

In Nigeria there have been several incidences of high profile crime in public buildings. On 16<sup>th</sup> June, 2011 a car bomb exploded in the parking lot of Louis Edet House, the headquarters of the Nigeria Police in Abuja killing six people and damaging several cars. On 26<sup>th</sup> August, 2011 a car bomb exploded in the United Nation House in Abuja killing 24 people and destroying cars and parts of the building. In the early hours of 2<sup>nd</sup> February, 2015 three court buildings were bombed in Degema,

Isiokpo and Port Harcourt in Rivers state. The court in Degema was razed and documents burnt to ashes (CKN Nigeria Newspaper, 2015). The fear of repeated attacks made some workers insist that security measures be put in place before they can resume work. In June, 2013 during the students' protest in the University of Uyo, Uyo Akwa Ibom state, buildings accommodating the vice-chancellor, deputy vice-chancellor academic, director of academic planning and students' records were burnt and vital documents destroyed. The operation of militants in the Akwa Ibom – Cross River states axis is a serious cause of security and safety concern. Their activities include kidnapping, murder, assassination, armed robbery and bombing of facilities. Essien and Ben (2013) note that kidnapping is the most lucrative form of violent crime among youths in the Niger Delta region with the spate of kidnapping in Akwa Ibom state being extremely high.

The above incidences draw attention to the vulnerability of many public buildings in Nigeria. The Nigerian Department of State Services (DSS) had in the past pointed out that intelligence reports show that key government buildings and ministries are targets of high profile criminal and terrorist attacks. Subsequently the alert level in Abuja and several Nigerian cities was raised and advice issued to diplomatic missions and international organisations to take adequate security precautions for their staff and premises (Department of State Services, 2013). The immediate response has been to surround sensitive and other public facilities with improvised barriers, intimidating guards, blocking of whole or parts of the roads around the facilities. This shows that crime prevention mechanisms are often considered retroactively and implemented after a crime has been committed rather than during the design development and construction stages.

### CRIME PREVENTION MECHANISMS

These are intervention measures underpinning the different prevention strategies applicable in different contexts – social, economic and the physical environment. Since crime prevention involves a wide range of activities, prevention strategies frequently involve many overlapping intervention measures in different combinations. Crime prevention mechanisms for physical environment security come in many varieties as there are different types of crime. These mechanisms should be known by the architect and incorporated into designs. As noted by Press et al (2001), design can be used as a tool to aid crime prevention by incorporating features into potential targets that make criminal activities less appealing to criminals and by introducing mechanisms of deterrence into a design. Moreover, crime can also be discouraged through increasing the difficulty of criminal activity by using target hardening measures (physical barriers) such as locks that require more skill and equipment on the part of the offender to compromise. The consideration of crime prevention mechanisms in design requires extending the designers' thinking from normal product use to its misappropriation, mistreatment and misuse by criminals (Press et al., 2001). For example, external burglar proof system improperly designed and fixed can also aid the criminal to climb up and access the first floor of a building. Designers are therefore expected to anticipate the vulnerability of security products to crime. Physical security elements in the building environment for surveillance, perimeter protection, access control, and target/building hardening are referred to in this paper as crime prevention mechanisms. They functionally give physical expression to the 4Ds of crime prevention (deter, detect, delay and deny). They also act as psychological deterrence to crime while supporting the intended use of the space (Federal Emergency Management Agency, 2007). Crime prevention mechanisms, as protective measures, can be categorised into the following: site layout elements, building components and monitoring/detection elements. The application of these mechanisms will depend on the risk assessment and the cost of the protection requirements.

**Site layout elements** are those elements placed in the areas around the building. They include perimeter barriers, landscape elements, lighting (main and emergency), landform, boulders, fence, general site barrier elements (retaining walls, berms, bollards and vehicle control systems). **The building components** are those measures directly associated with the building (US Department of the Army, 2001). They are target hardening measures and include walls, roofs, windows doors, floors, locks, security screens, burglary proof, gates, protective glazing, special mounting hardware on doors and windows to make them hard to remove or tamper with, reinforced walls and floors, mechanical access control systems, and other elements required to protect the building. **Monitoring/ detection elements** include CCTV systems, lighting systems, intrusion detection systems, access control, weapon and explosive detectors and x-ray machines. Crime prevention mechanisms for perimeter security involve two main elements: the perimeter barrier to prevent unauthorised entry to site and access control points for screening and inspection before access to site is permitted (Federal Emergency Management Agency, 2007).

The main aim of applying physical security prevention mechanisms to the buildings and integrating them into design is to architecturally influence behaviour for crime prevention. It has been

acknowledged that architecture is a very important though less explored method of crime prevention (Yong, 2015). McKay (2014) suggests that human behaviour affects design which in turn influences the desired human behaviour. According to Lockton (2011) architects and planners inevitably influence behaviour through designing and constructing places where people live and work. Investigation of crime prevention through environmental design (CPTED) concepts and principles reveal an age long method of leveraging the environment to support and influence behaviour (Crowe and Fennelly, 2013). Furthermore, the design of the environment exhibit cues that affect human behaviour. Teeuw et al. (2011) opine that the most apparent method of influencing behaviour is direct physical measures through design. Arguing further, they maintain that the design of the environment for effective surveillance, access control and territorial control can be used to enforce safe behaviour to counter crime. In that sense a fence creates territorial influence and signals to people that the premise is controlled and that questions will be asked and actions taken. Gates and gatehouses/security posts signify access control for security checks. They create delay and possible apprehension of would-be offenders. Lighting enhances surveillance and creates psychological deterrence that there is the possibility of recognition and apprehension (Plate I). It also reduces the fear of crime.



Plate I: Good environmental lighting can reduce fear of crime and enhance surveillance.

## RESEARCH METHODOLOGY

The study adopted the survey design approach. The study was conducted in three stages. In order to identify the public building complexes that will fit the purpose of the study an exploratory and observatory survey was first carried out in July, 2014. The second stage was the pilot study in August, 2014. The main field work was conducted between April and July, 2015. Additional field work was carried out in line with the progressive focusing method (Sinkovics and Alfoldi, 2012) to obtain additional information and confirm previous data collected between 16<sup>th</sup> to 18<sup>th</sup> December, 2015 and 22<sup>nd</sup> to 30<sup>th</sup> March, 2016.

A multi-case study approach was adopted for the direct observation to address response to crime and fear of crime by architects and users. The response was divided into two aspects as follows: response as part of original design and construction and response by users after construction (retrofit). The study involves seven different types of public buildings in two public building complexes (judiciary and legislative). These are administrative (offices), social, administration of justice, education/research, law making, religious and multi-purpose buildings in six locations. Each type of public building functions as categorised. For instance, the multi-purpose building is used for seminars, workshops, wedding receptions and other non-judicial purposes. The selection was based on security and safety concerns noted in these complexes during the exploratory survey. Also, information and news reports which indicated that courts are increasingly under threat (bombings, arson, theft of sensitive documents and threat to users, especially judges) were also considered in the selection.

The selection of the public buildings complexes for study was also based on the following criteria: (i) the complexes should have different types of public buildings, (ii) risk grouping of users should range from low to very high, and (iii) the buildings should have sensitive documents and information with high risk profile. The public buildings used for the study accommodate high profile

personalities like chief judge, judges and speaker of the house of assembly and other categories of staff. The complexes also house sensitive documents such as court judgements and security and other sensitive documents and information in the house of assembly. A checklist for the observation developed from literature was used (United States Department of the Army, 2001; Federal Emergency Management Agency, 2003 and 2007; Harris, 2013, Crowe and Fennelly, 2013; Sakip, et al, 2012). The advantages of using the observation method are that it helped to clearly identify what was available and what was not available and the variables can easily be quantified and statistically analysed. The data collected were analysed using SPSS (version 20). Descriptive statistics was used for the data analysis. A hypothesis was tested using the Chi-square.

### Study Area

The study area is Uyo in Akwa Ibom State located in the south south geo-political zone of Nigeria. Akwa Ibom State was created from Cross River state on 23 September, 1987. It consists of thirty one (31) Local Government Areas. It is a fast developing state with rapidly growing urban centres. The state has a total area of 8,412 square kilometres and a population of 3,920,051 persons (National Bureau of Statistics, 2008). It lies between latitudes 4°33' and 5°33' North and longitudes 7°35' and 8°25' East. It is bounded on the north by Abia State, on the east by Cross River State, on the west by Abia and Rivers State and on the south by the Atlantic Ocean. The state capital, Uyo was used for the study. It is located on co-ordinates 5° 03' N and 7° 56' E.

## RESULTS AND DISCUSSION

### Results

Thirty seven (37) important and relevant crime prevention mechanisms from the literature review are listed in the checklist for observation and evaluation. The check list was divided into two sections, namely; section A with twenty one (21) mechanisms for buildings and section B with sixteen (16) mechanisms for the external areas. For the buildings the mechanisms include, access control systems, alarm systems, burglary proof, security doors in critical areas, mechanical access control doors, mechanical security locks and electronic/biometric locks. Also included were dead bolts, protective glazing, special anti-remove mountings on doors and windows, walk-through metal scanners, fire hydrants, fire extinguishers, fire alarm, smoke detectors, sprinklers, fire service connection points. The checklist also has fire doors and windows, reinforced concrete building walls, holding down equipment and close-circuit television. In the external areas the mechanisms are, fence, gate, gatehouse/security post, engineered planters, fixed bollards, mechanical bollards, jersey barrier and retaining wall. Berm, landscape elements, vehicle control systems, main security lighting, emergency lighting, drop arm access control, crash beams, and close-circuit television were also included. The highest number of mechanisms in a facility is used to represent the level of application in each of the complexes. The results are presented in Table 1.

In Table 1 the variables were measured using the following attributes – Presence of crime prevention mechanisms, part of original design, retrofitted and not present. For example, in the Chief Judge/High court 1 building 14 (66.67%) out of 21 crime prevention mechanisms were present. Out of these, eight (66.67%) were part of the original design of the building while six (28.57%) were retrofitted to meet security challenges. Seven (33.33%) mechanisms were not present. In the main legislative building housing the legislative chamber, 16 (33.33%) out of 21 mechanisms were present. Out of these 11 (52.38%) were part of the original design while five (52.38%) wereretrofitted. Five (52.38%) of the mechanisms were not present. The reason for the breakdown is to find out architects' and users' response to crime and fear of crime.

Table 1: Results of Evaluation of Crime Prevention Mechanisms

FACILITIES	Presence of crime prevention mechanism	Part of Original Design	Retrofitted	Not Present
JUDICIARY FACILITIES				
Chief Judge/High court 1 building	14 (66.67%)	8 (38.10%)	6(28.57%)	7(33.33%)
High court 2	12 (57.14%)	8 (38.10%)	4(19.05%)	9 (42.86%)
High court 3	10 (47.62%)	7 (33.33%)	3(14.29%)	11(52.38%)
High court 4	7 (33.33%)	5 (23.81%)	2 (9.52%)	14(66.67%)
High court 5	10 (47.62%)	7 (33.33%)	3(14.29%)	11(52.38%)
High court 6	7 (33.33%)	5 (23.81%)	2 (9.52%)	14(66.67%)
High court 8	10 (47.62%)	7 (33.33%)	3(14.29%)	11(52.38%)
High court 9	10 (47.62%)	7 (33.33%)	3(14.29%)	11(52.38%)
High court 10	9 (42.86%)	5 (23.81%)	4(19.05%)	12(57.14%)
High court 11	10 (47.62%)	7 (33.33%)	3(14.29%)	11(52.38%)

Chief Registrar/Administration building (Offices)	14 (66.67%)	5 (23.81%)	9(42.86%)	7 (33.33%)
Finance and Probate Revenue building (Offices)				
Bar Centre (Social activities)	13 (61.90%)	6 (28.57%)	7(33.33%)	8 (38.10%)
Directorate of Customary Court Matters building (Offices)	7 (33.33%)	7 (33.33%)	0 (0.00%)	14(66.67%)
Multi-purpose Hall (Events, Conferences, Religious activities)	10 (47.62%)	8 (38.10%)	2 (9.52%)	11(52.38%)
Restaurant/Business Centre/Co-operative building (Commercial activities)	8 (38.10%)	8 (38.10%)	0 (0.00%)	13(61.90%)
Law Library building (Education/Research)	8 (38.10%)	6 (28.57%)	2 (9.52%)	13(61.90%)
Administration building (Metro road complex)				
<b>MEAN PERCENTAGE APPLICATION</b>	12 (57.14%)	9 (42.86%)	3(14.29%)	9 (42.86%)
External Area	11 (52.38%)	6 (28.57%)	5(23.81%)	10(47.62%)
<b>LEGISLATIVE FACILITIES</b>	<b>48.15%</b>	<b>32.01%</b>	<b>16.14%</b>	<b>51.85%</b>
Main Legislative building (Law Making)	5 (31.25%)	5 (31.25%)	0 (0.00%)	11(68.75%)
Administration block (Offices)				
Assembly Chapel (Religious)				
Maintenance block (Ancillary facility)	16 (76.19%)	11(52.38%)	5(23.81%)	5 (23.81%)
<b>MEAN PERCENTAGE APPLICATION</b>	16 (76.19%)	9 (42.86%)	7(33.33%)	5 (23.81%)
External Area	8 (38.10%)	8 (38.10%)	0 (0.00%)	13(61.90%)
	6 (28.57%)	6 (28.57%)	0 (0.00%)	15(71.43%)
	<b>54.76%</b>	<b>40.48%</b>	<b>14.28%</b>	<b>45.24%</b>
	6 (37.50%)	6 (37.50%)	0 (0.00%)	10(62.50%)

Figure 1 shows the mean application of crime prevention mechanisms in buildings. There were 48.15% and 54.74% available mechanisms in the judiciary and legislative facilities respectively. Out of this 32.01% was part of original design and 16.14% were added-on in the judiciary facilities and 40.48% was part of original design and 14.28% were added-on in the legislative facilities. It also revealed that 51.85% and 45.24% of the mechanisms were not available in the judiciary and legislative facilities respectively.

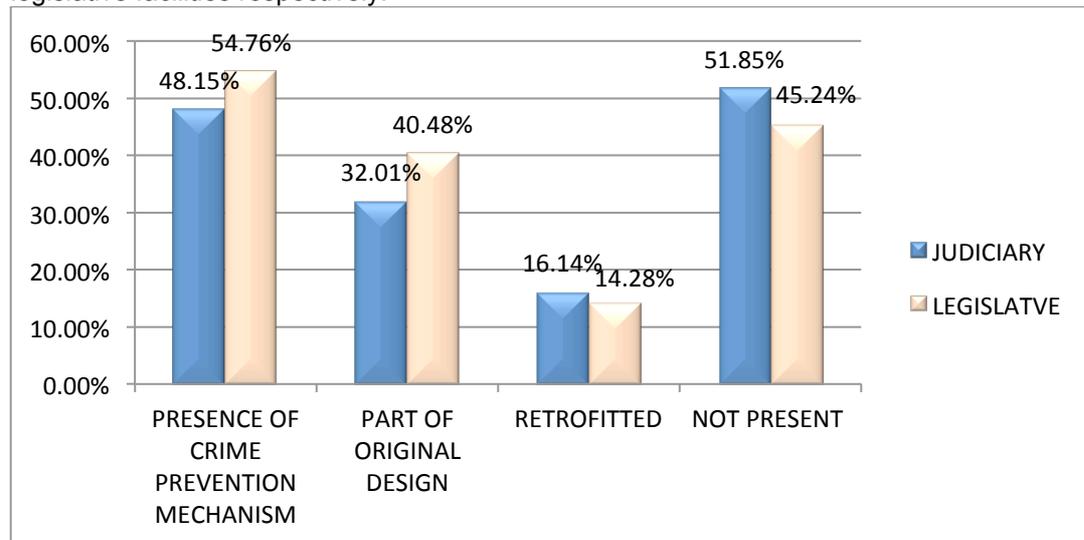


Figure 1: Mean Application of Crime Prevention Mechanisms in Public Buildings in Akwa Ibom State, Nigeria.

### Test of hypothesis

Two hypotheses were tested using the chi-square test statistic at 5% level of significance.

- (1) **H<sub>0</sub>**: The availability of the crime prevention mechanisms is independent of the type of facilities.

**H<sub>a</sub>**: The availability of the crime prevention mechanisms is dependent on the type of facilities.

This hypothesis tested the assumption that the application of crime prevention mechanisms to deter, delay, detect and deny unauthorised access could be affected by the type of facility or asset. The decision rule is that the null hypothesis will be rejected if the computed value of the chi-square is greater than the table value. For the judiciary facilities, the analysis shows that the computed value (16.361) at 0.05 significance level and degree of freedom 17 is greater than the table value (8.672). The null hypothesis is rejected and the alternate hypothesis accepted. The study therefore concludes that the availability of such mechanisms depends on the type of facility. For the legislative facilities, the analysis shows that the computed value (15.954) at 0.05 significance level and degree of freedom

3 is greater than the table value (0.352). The null hypothesis is rejected and the alternate hypothesis accepted. The study therefore concludes that the availability of such mechanisms depends on the type of facility.

### Discussion

The findings show that important anti-terrorism and high profile crime prevention mechanisms such as protective glazing, walk-through metal scanners, fire doors and windows, reinforced concrete building walls in critical areas, vehicle control systems and close-circuit television were not applied. The implication of this is that the users and security personnel will be taken unawares should there be serious criminal actions involving use of light arms, improvised explosive devices or bomb laden vehicles. The fact that there were mechanisms installed after construction shows that there was need for additional security measures. This should have been taken care of in the original design. The use of gates as access control measure was considered a useful measure in the security of the complexes (Plate II).



Plate II: Entrance gate to Akwa Ibom State House of Assembly is the only perimeter access control measure. The separate pedestrian gate allows for control and screening of pedestrian.

In all the facilities studied the entrances to the complexes, although gated, were without mechanisms for vehicular slow approach and arrest such as retractable bollards, bumps, mechanical wedge and placement of obstacles in a serpentine pattern. These mechanisms are relevant as obstacles to forced approach and entry.

In all the buildings studied burglary proof at designated entrance doors, lobbies and windows were the main security measures. Armitage (2006) found that there is a statistically significant link between the presence/absence of a real or symbolic barrier at the entrance of a facility and the level of victimisation experienced in the facility. The presence of these target hardening measures could therefore be considered as having influences on the level of criminal victimisation and fear of victimisation. In all the buildings studied, the glazing was ordinary glass. Glass from shattered windows can cause extensive and large number of injuries in event of an explosion. Apart from blasts ordinary glass can easily be broken by burglars or even protesters throwing stones and other objects. It is therefore necessary that glazing be specified to meet different levels of protection. There were no CCTVs in the external areas. Since security personnel cannot be deployed to all areas at all times the implication is that it may be difficult to detect suspicious persons and activities in areas not covered. The tests of hypotheses reveal that the application of crime prevention mechanisms depends on type of public building facility. It showed that the more sensitive a facility is the more the protection measures. For example the chief judge/high court 1 building has more prevention mechanisms than the bar centre used by lawyers for social activities (Table 1). The sensitivity of a facility relates to purpose and use, users, activities and asset value.

## CONCLUSIONS

The occurrence of crime is rampant in the Nigerian society and its multi-dimensional nature is a threat to both national and individual security and safety. It can frustrate national development efforts and stability if not adequately checked. The findings of the study were vital to the conclusion reached. A very important finding of this study is that crime prevention mechanisms are not holistically applied in the public buildings evaluated or integrated into the design of public buildings in the study area. The study has shown that important anti-terrorism and high profile crime prevention mechanisms were not applied. The paper therefore concludes that the facilities and users were not adequately secured against serious criminal actions involving use of light arms, improvised explosive devices or bomb laden vehicles. No security measure can completely eradicate crime because its complex nature. In spite of this many actions can be taken to reduce criminal opportunities and fear of crime and increase the capacity for solutions.

## RECOMMENDATIONS

The paper recommends that there should be more focus on prevention than prosecution and punishment to reduce crime, tension and fear in the Nigerian society. This calls for multi-sectorial participation and partnerships for crime prevention. Architects by virtue of their prime role in shaping the built environment where these crimes occur can play a vital role in helping to prevent crime through their designs. It also recommends that crime prevention mechanisms should be holistically evaluated, specified and integrated into the design of public buildings in Nigeria to help prevent and/or reduce crime and fear of crime. There is need to upgrade these facilities security-wise. For glazing the paper recommends four solutions. The first is to use glass that will not easily break such as laminated glass. The second solution is to introduce measures to retain the glass fragments such as transparent anti-shatter film applied to the inner surface of glazing. The third is to apply a UPB laminated inner leaf to the glazing. The fourth is to use glass curtain. The choice of the glazing system will depend on the risk assessment, protection requirements and the cost.

The external site design should be such that placement of barriers should mitigate forced entry by assailants. It recommends the use of a comprehensive vehicle access control system (CVACS). This is shown in figure 2.

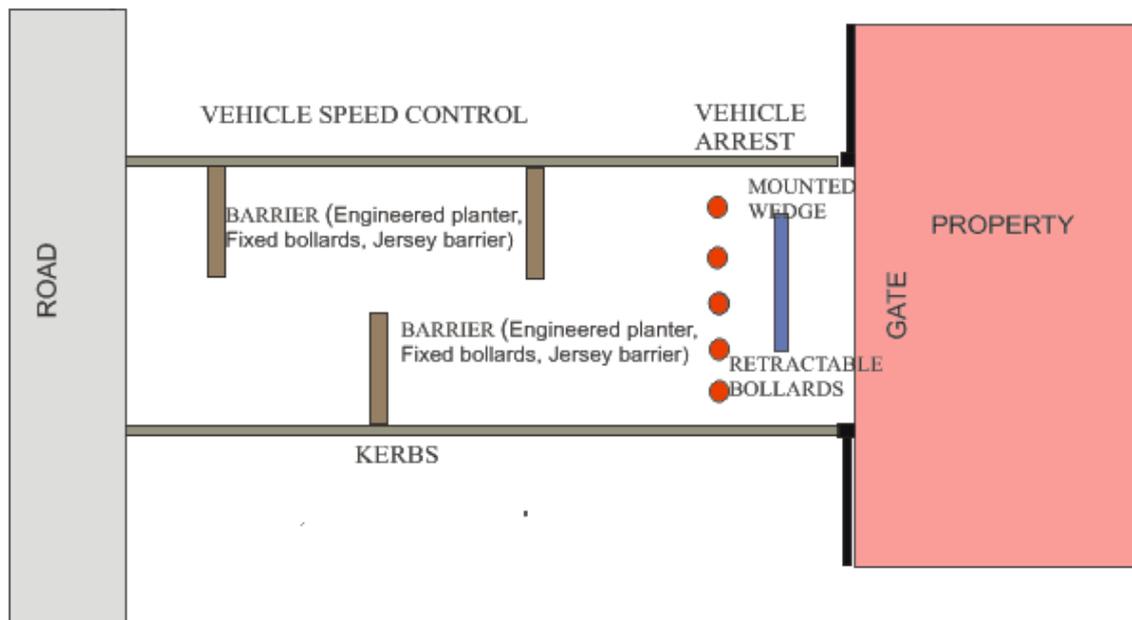


Figure 2: Comprehensive Vehicle Access Control System

## References

- Armitage, R. (2006). Predicting and Preventing: Developing a Risk Assessment Mechanism for Residential Housing. *Crime Prevention and Community Safety: An international Journal*, 8(3), 137 - 149
- Bercovich, D. H. (2010). The Fear Society: Design for Safety. Retrieved from [www.essays.se/about/Dana+Hakim+Bercovich](http://www.essays.se/about/Dana+Hakim+Bercovich)
- Department of State Services (2013). Successes, Failures and Fatalities. Retrieve from [www.en-wikipedia.org/wiki/departement\\_of\\_state\\_services](http://www.en-wikipedia.org/wiki/departement_of_state_services)
- Ebong, S. O. and Ekong, F. (2014). Integrating Security Requirements into Architectural Design and Planning for Crime Prevention and Anti-terrorism in Nigeria. In, Afolabi, M. and Ushie, J. A. (eds), *Harvests from the Gown*. Uyo: University of Uyo, 2, 322 – 333.

- Essien, A. M. and Ben, E. E. (2013). The Socio-Religious Perspective of Kidnapping and Democratic Sustainability in Akwa Ibom State. *International Journal of Humanities and Social Sciences*, 3(4), 273 – 284.
- Federal Emergency Management Agency (2007). *Site and Urban Design for Security (FEMA 430)*. Oakland: Earthquake Engineering Research Institute.
- Lockton, D. (2011). Architecture, Urbanism, Design and Behaviour: A Brief Review. Retrieved from: [www.danlocton.co.uk](http://www.danlocton.co.uk)
- Marzbali, M., Abdulla, A., Razak, N. And Tilaki, M. (2011). A Review of Effectiveness of Crime Prevention by Design Approaches Towards Sustainable Development. *Journal of Sustainable Development*, 4(1), 160 – 172.
- Press, M., Erol, R. and Cooper, R. (2001). Design as a Tool for Social Policy: The case for Design against Crime. Paper presented at the Fourth European Academy of Design Conference, Aviero, Portugal.
- Romer, D., Jamieson, k. H. and Aday, S. (2003). Television News and the Cultivation of Fear of Crime. *Journal of Communication*, 53(1), 88 – 104.
- Sinkovics, R. R. and Alfoldi, E. A. (2012). Progressive Focusing and Trustworthiness in Research: The Enabling Role of Computer-Assisted Qualitative Data Analysis Software (CAQDAS). *Management International Review*, 52(6), 817 – 845.
- Teeuw, W. and de Boer, J. (2011). *Influencing Behaviour for Safe Working Environment*. Enschede, the Netherlands: Saxon Research Centre for Design and Technology.
- Three Courts Bombed in Rivers State (2015, December 3). CKN Newspaper, p. 1
- United States Department of the Army (2001) *Physical Security (3 – 19.30)*. Washington D.C.: United States Department of the Army.
- Yong, S. (2015). Panopticism Techniques in Crime Prevention through Environmental Design. *Global Journal of Business and Social Sciences Review*, 1(2), 462 – 469.