

The Effects of Neighborhood Forms on Crimes Occurrence in Residential Neighborhood in Dar ES Salaam

Paulo Kitosi, Mlelwawiladi

Abstract:- This paper explains the link between the neighborhood form (physical characteristics of streets layouts) and the occurrence of crimes in residential neighborhoods. The research findings indicate that there is relationship between the physical makeups of the neighborhood elements such as streets layout plan, Land use zoning and streets design with crime occurrences. This part also indicates how different environmental or physical character of a neighborhood elements influences crimes. The physical characteristics which prevent public surveillance are characterized by high rates of crime compared to area where there is public severance. Physical elements of the residential neighbourhood that have been designed and implemented haven't considered safety and security. These brought crimes in areas such as along the roads, inside the houses, in space between structures, in open spaces and in abandoned properties. On residential roads crimes tend to occur due to lack of street lights and lack of walk ways. On residential houses crimes occurred due to disorder block layout design, imbalance of land uses, lack of fences, and poor maintenance of openings. On open spaces crimes occurred due to lack of lightings, street furniture, Informal activities carried out in open spaces and Poor maintenance of open spaces. Finally, crimes occurrence on between structures was due to narrow street paths and lack of outdoors lightings including side to side walls lightings during the night.

I. INTRODUCTION

Neighbourhood form means physical characteristic of neighbourhood layout which includes streets layout and design, landscape elements and land uses (Dempsey, 2010). A good neighbourhood design result to the good neighbourhood form with active streets which cut down crimes (Mohamed, 2016). If these elements are disrupted then security disintegrates and the neighbourhood breaks down (Parker, 2000). A good design is essential to the occurrence of safer and more comfortable environment (Mohamed, 2016). A defensible space is created when pedestrian have a clear sense of spatial definition and when natural surveillance in development takes the form of placing public spaces and high activities areas where they provide visual overview, mixed uses also provides increased security through increased activities and natural surveillance, clearly defined and observable space create a perception of risk for potential offenders while giving pedestrian a sense of security (Oliveira, 2016).

Physical environment includes, Housing design, block layout, Land use and circulation patterns, Territorial features and Physical deterioration (Taylor, 1996). Physical environment can influence the chances of a crime occurring (Taylor, 1996). Offenders may decide whether or not to commit a crime in a location after they determine the following question. How easy will it be to enter the area, How visible, attractive, or vulnerable do targets appear, What are the chances of being seen, If seen, will the people in the area do something about it, Is there a quick, direct route for leaving the location after the crime is committed (Bottom, 2007).

Neighbourhoods that are cohesive and respond quickly to small changes in their environment have a reduced risk of larger crime problems developing (Owatonna, 2012). Some strategies that can be used successfully to reduce crimes in residential neighbourhoods are Prompt removal of abandoned vehicles, Fast cleanup of illegally dumper items, litter and spilled garbage (Owatonna, 2012). Also fresh paints on buildings, keeping sidewalks and gutters clean, continual maintenance of vacant properties prevent crimes occurrence in residential neighbourhood (Owatonna, 2012).

Promoting good design and layout in a new development is one of the most important ways in which the Council can address community safety issues (Slater, 2006). Good designs and layouts can make crimes more difficult to commit because it increase the likelihood of detection and improve public perceptions of safety (Slater, 2006). Attractive and well-designed environments also encourage a sense of pride and 'local ownership' amongst the local community (Slater, 2006).

Crime is influenced by the built environment (MacDonald, 2015). Physical factors for crimes occurrence are broken windows, poor managed of public spaces, poor orientation of buildings, ignore of green spaces, lack of opportunities within the neighbourhood form and vice versa promote neighbourhoods crimes (MacDonald, 2015). Economic opportunities it is a very important aspect in neighbourhood form since there is a direct relationship between social economic and neighbourhood insecurity due to crimes occurrence (UN-HABITAT, 2014). People may not worry about the perceived connection between density and social problems, such as crime, poverty and depress if there is a well-designed and organized neighbourhood with the emphases of employment opportunities (UN-HABITAT, 2014).

II. THEORIES AND CONCEPTS ORIENTATION TO CRIME

Several theories have been advanced by different authors on crime and its relation to the built environment (Newman, 1972) proposed four constituents of good design to encourage the social control networks which he claims have been eroded by urbanization, population pressure and new building techniques. These four measures were:

- Territoriality: which he described as the subdivision of buildings and grounds into zones of influence to discourage outsiders from entering and encourage residents to defend their areas
- Surveillance: the design of buildings to allow easy observation of the related territory.
- Image: this being the design of public housing to avoid stigma
- Environment: the juxtaposing of public housing projects with safe zones in adjacent areas.

Oscar Newman looked into defensible space which states that access to an area should be restricted to legal users. Jeffery's work on crime prevention through environmental design (CPTED) looked into a manual support to defensible space theory and he takes it a step further by the manipulating of the physical environment to influence behavior to deter crime (Jeffery, 1971) Clarke's came up with situational crime prevention which takes both theories into consideration while including management and design interventions to reduce crime (Jeffery, 1971) The theory develops social and economic strategies to achieve a sustainable environment. 16 These theories have been developed separately from each other. The environmental criminology theory by Jeffery resembles to a great extent the crime prevention through environmental design theory. It is also inspired by Lynch's (1964) urban design concepts and zonal ecology theory.

The sub cultural perspective suggests that the concentration of relatively large numbers of individuals within micro-social units fosters the creation and expansion of deviant subcultures. Urbanization, through the complementary processes of structural differentiation and value diffusion, promotes social support for a multiplicity of behavioral choices. Further, it engenders greater tolerance for non-conformity among the more conventional members of the community. As a consequence, the more populous urban areas are expected to experience more criminal activity than less populous ones.

A. Crime occurrence and Physical Environment

The idea of crime prevention through environmental design attracted particular attention when (Jacobs, 1961) argued that modern city design typically undermines peoples' ability to observe public streets and thus breaking down informal social control on criminal activity. Jacobs asserted that crime and the physical environment are related in a systematic, observable and controllable manner. (Jeffery, 1971) Argued that the crime prevention strategy with the greatest potential involved heavy reliance on design and physical changes that could help reduce criminal opportunities in the environment. The theoretical

discussions of Jacob and Jeffery drew attention to the importance of investigating the relationship between the built environment and public safety.

B. Defensible space Theory

In the early 1970s, Oscar Newman introduced his theory of defensible space as a workable solution to reducing levels of crime in urban areas. The theory proposes that spaces which are more likely to convey a likelihood of observation and difficulty to escape are less attractive to potential criminals. Defensible space is a model for residential environments which inhibits crime by creating the physical expression of a social fabric that defends itself (Newman, 1972)

This theory was useful in this study because during data collection information like defensible space elements mentioned by Oscar Newman that includes plot boundaries, platters materials, fences and well lit both public and private spaces was collected through observation on streets layout, public and private spaces.

C. Broken window theory

Broken windows theory is linked to the defensible space and CPTED theories in that a rundown quality of the environment in which people live can negatively influence the sense of pride in belonging and ownership of their environment, thereby making them less likely to act on both environmental problems and crime. Broken windows theory attempts to explain the loss of community involvement as a result of physical disorder and crime and the fear that results from crime. Wilson and Keeling's (1982) broken windows theory provides a model for crime in which visible signs of neighbourhood deterioration negatively impact residents' perceptions of the area, resulting in a withdrawal from community life, a reduction of social control, and increased crime.

This theory was useful in this research in the way that during data collection through observation, different elements like buildings, cars, open space, streets and walkways conditions was collected in relation to crimes occurrence in the residential neighborhood.

III. METHODOLOGY

The case study was located in Dar es Salaam City which the case study selection in this research considered the information-rich case in which one can learn important aspects of the issue of central importance. According to (Nachmias, 1996) the case study research strategy is the most suitable where the case to be investigated is one with rich information. Reason of selecting Temeke west as a case study due to these. According to the crimes statistic report of January 2014 shows that total crimes in Temeke Region is 5442 while in Ilala is 4984 and Kinondoni is 5381.

The study was conducted at Mabatin subward in Temeke municipality, Dar Es' Sala.

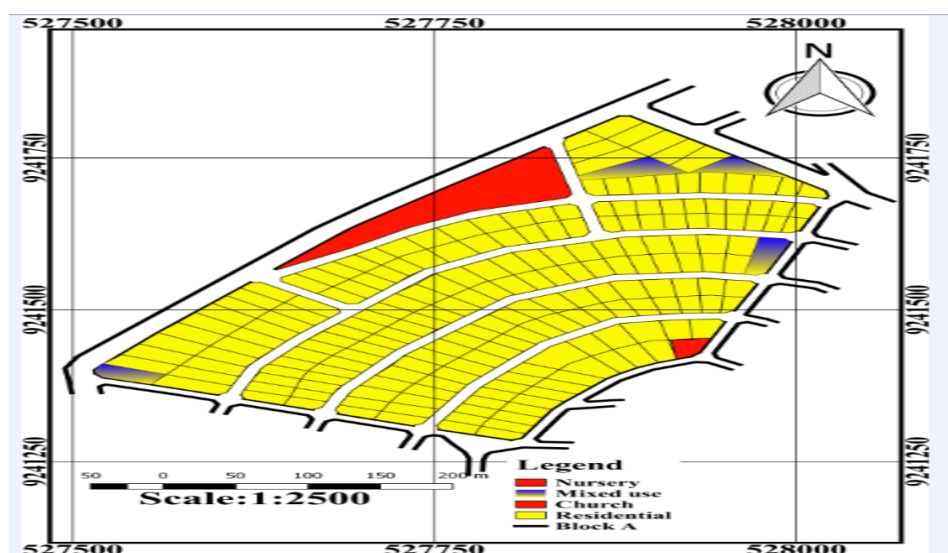
IV. DATA ANALYSIS AND FINDINGS

The characteristics of built environment in a neighborhood has a great influence on the occurrence of crime. The research findings indicated that there is a relationship between the characters of built environments with crime.

A. Blocks layout plan and crime in residential neighborhood.

Research findings shows about 84% of burglary happened inside the houses in pure residential blocks. The existing street layout planned with through traffic where by streets allows free access of people in all blocks while most of the blocks planned for pure residential with small consideration of mixed land use. This layout influenced burglary occurrence during the day between 7.00-12.00pm since at this time most of the residents attended to job and criminals had free access to commit crimes inside houses because the layout reduced defensible space (privacy). This design is against to the Oscar Newman ideas who said street layout should be divided into two design style first puree

residential street should have dead ends(cul- de sacs) for the aim of increase privacy through restricting nonresidents passing free through the blocks. Second public streets should allow free movement for all and should be well designed with balanced land uses in order to encourage people to walk and live all the time which increase street eye on commercial areas and institutions areas. Public Street means street with mixed land uses that includes commercial-residential, commercial, institutions, residential and recreations areas. Having these Oscar Newman he believed that crimes can be restricted due to the fact that in pure residential blocks cul-de sacs prevent free access and small blocks enhance permeability and active streets. From the existing developed plan shows most of the blocks layouts have curved linear form with free access into blocks which influenced burglary occurrence, also in terms of land use distribution about 90% land use is for pure residential this zoning influencing burglary occurrence during the day due to the fact that street lacks varieties activities which increase active street . See map 1.



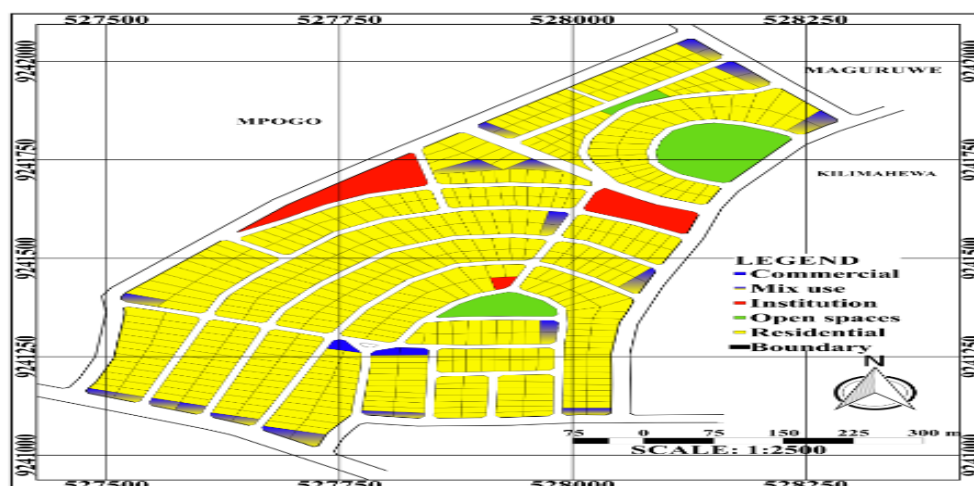
Map 1: Streets layout plan in Temeke West Neighborhood

Source; Ministry of land housing and human settlement, Traced by Author, 2018

B. Land use zoning consideration and crime in residential neighborhood

Research findings shows about 90% of the land use is planned for pure residential this reduced the natural surveillance of the streets during the day because single land uses made most of the street to be dormant when residents

attended to jobs outside the neighborhood and influence criminals to commit for crimes such as burglary since they saw no body is looking for them due to the fact that pure residential land uses reduced eyes on streets as shown in figure 2.



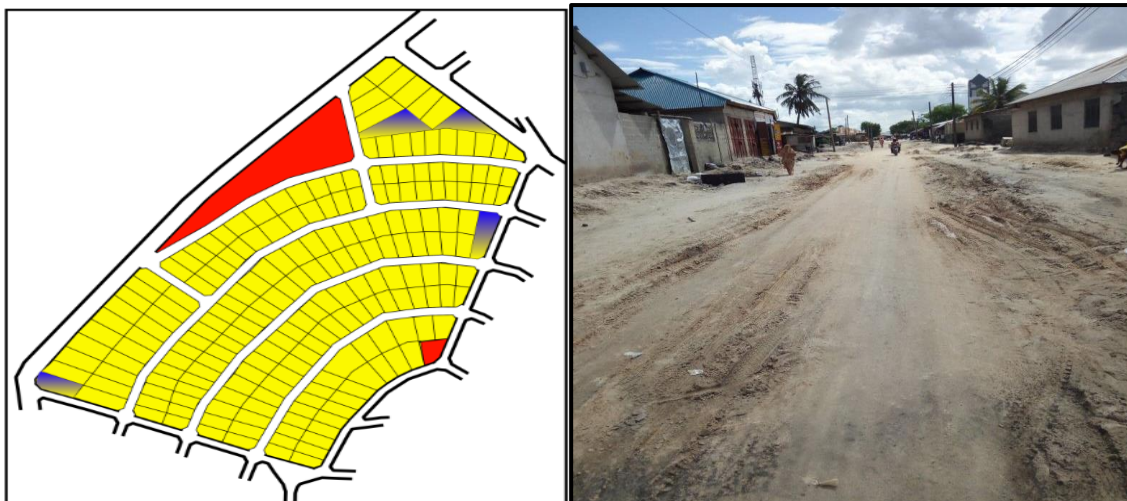
Map 2: Land use distribution in Temeke West neighborhood

Source; Ministry of land housing and human settlement, Traced by Author, 2018

From the literature review Neighborhoods with a mix of residences, offices and retail outlets are thought to cut down crimes; Mixed-use neighborhoods enable people to walk more. According to JohnMacDonald “a neighborhood with lunch counters, offices, and bars is likely to have more “eyes on the street” at more times of day. And this collective surveillance and deters criminals.

C. Street functions and crime in residential neighborhood

The place function is essentially that distinguishes a street from a road. From the research findings about 84% of burglary happened inside the houses within a streets at 7.00-12.00am due to the fact that most of the street observed has single use mainly dominated by pure residential which created dead street during a day when most of the people attended to job and leaving a chance for criminals to commit crime because of absence of street eyes from the frequency movement of people for various functions as shown in map 1 and plate.



Map 3 and plate 1: Non active streets in residential neighborhood

Source: Field Work, 2018

This is contrary to mixed use concept which emphasis the variety of functions into blocks for the aim of creating natural surveillance through vibrant spaces created by various functions. Street functions such as commercial activities and ceremonies events create street attractive many people to walk which discourage a change for criminals to commit burglary inside the houses since it is easy to be recognized by the street users.

D. Street movement and crime in residential neighborhood

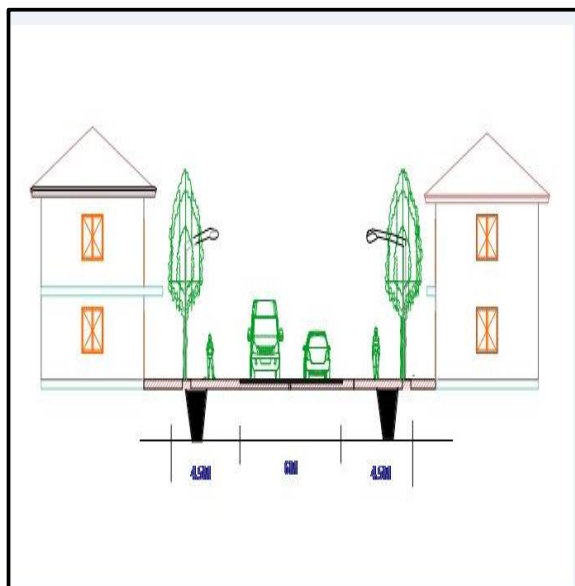
Providing for movement along a street is vital, but it should not be considered independently of the street's other functions. The existing situation observed priority consideration given during implementation is for vehicles, but the passage of people on foot and cycle has often been neglected. This contributed to 92% of robbery and picks pocketing along the roads during 7.00-10.00pm because mostly of the people they prefer vehicles than walking. See plate 2.



Plate 2: Streets with no walkways created non Active Street

Source: Field Work, 2018

Walking and cycling are important modes of travel, offering a more sustainable alternative to the car and create Active Street during day and night which help to deter criminals intended to commit crimes. From the literature review a street should be walk able with friendly environment to the street users. Walk able street should have street lights, walkways and trees that provide shades during the day. See sketch 6.1.

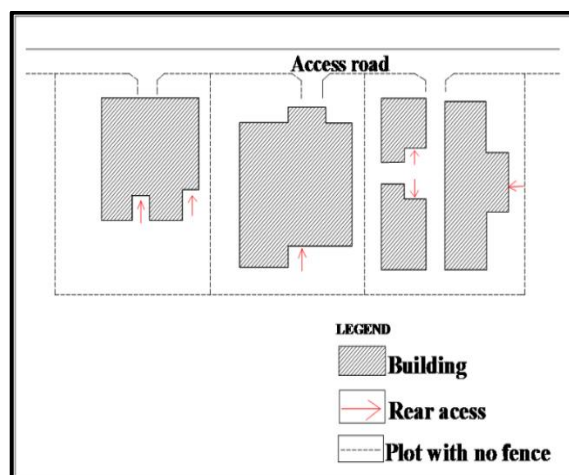


Sketch 1: Walkable Street with walk ways, street light and trees

Source: Author construction, 2018

E. Access to buildings and crime in residential neighborhood

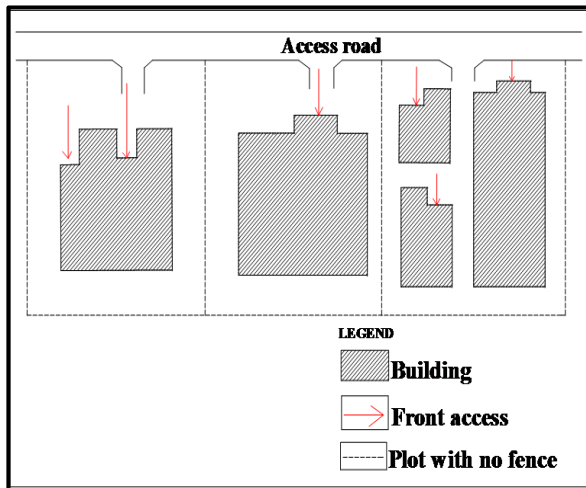
Research findings shows that about 84% of burglary happened inside the houses caused by poor orientation of the building because most of the houses observed entrance are at the rear side of the street and right or left of the plots with rear sitting rooms from the street (Swahili houses) .See sketch 6



Sketch 1: Rear and side access to building with long corridors in residential houses.

Source: Field Work, 2018

This situation contributed burglary occurrence inside the houses because rear access to the building facilitate more criminals to enter inside the house without being overlooked by the pedestrians walking along the street or living in the street Access to buildings and public spaces is another important function of streets. Providing buildings frontages that are directly accessible on foot and that are overlooked from the street is highly desirable for security purpose this helps to increase building natural surveillance from the street users and restrict the criminal to enter into the house due to fear of being seen by the street users. See sketch 6.2 shows frontage access to building from the access road.



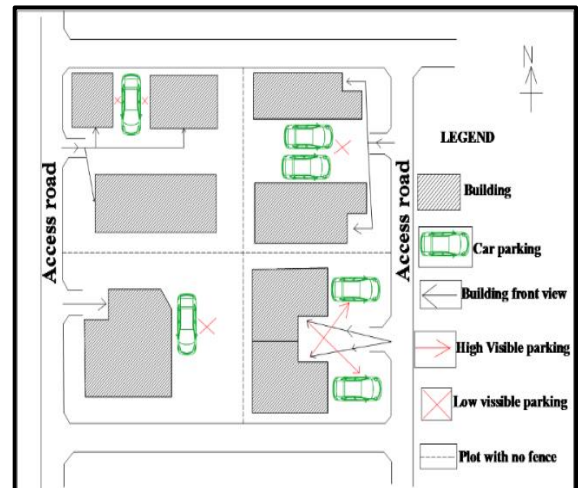
Sketch 2: Frontage access to building reduces crimes inside the house

Source: Author Construction, 2018

This create defensible space from non-residents by restricting for any one decides entering inside the house and easy will be recognize by the street users. Therefore instead of rear access to the house which accumulated crimes occurrence, great emphasize of the proper orientation of the building access is highly needed for the aim of crimes reduction.

F. Car Parking and crimes occurrence in residential neighborhood

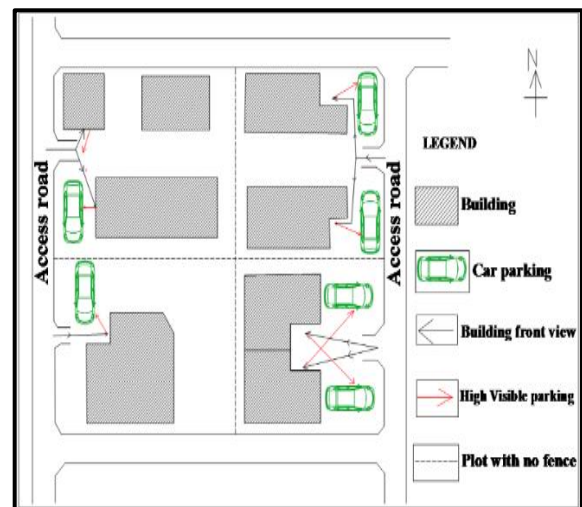
There is a link between the design of parking lots or area with the occurrence of crime in the residential neighborhoods. The location of parking facility within the residential plot has a great influence on possibility of criminals to commit crime. Research findings shows about 18% there is a carjacking and car parties' theft that happened in residential neighborhood. Observation shows that most of the streets had no designed on site packing which is front of the house. Parking system is on rear side of the building, in the corridor between two structures which is not visible by the house owners that contributed to the car parties like site mirror theft and other car accessories and other form of parking is through informal on-street parking this contributed to the carjacking and car parts theft since this parking space lose natural surveillance from the house owners and street users. See sketch 6.3 which is supported by Thomas Telford who said poorly designed parking can create safety problems and reduce the visual quality of a street.



Sketch 3: Poor onsite parking spaces with low visibility from the house owners

Source: Field work, 2018

This is contrary to parking design principles outlined by London Borough of Barnet toward clear commitment to crime reduction and community safety as includes. Overlooked parking, well lit (lighting) parking, and visible parking from the building (front of the house) as shown in Sketch 6.



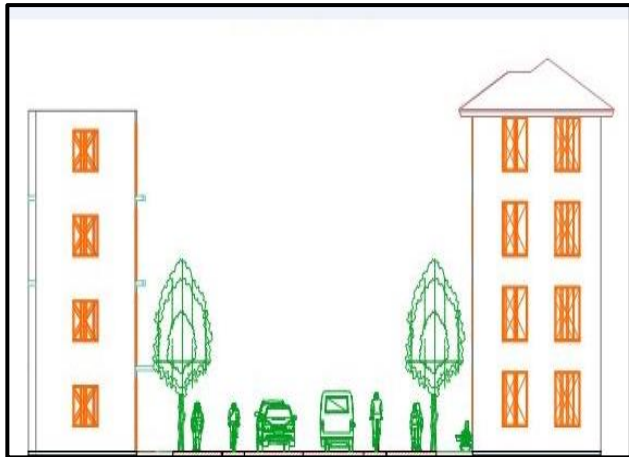
Sketch 4: Parking designed front side of the building for car safety

Source: Author construction, 2018

This is also supported by Thomas Telford who said a well-designed on site and street parking that provide convenient access to frontages of the street can add to the vitality of a street hence street safety from crimes and accidents.

G. Street lighting in residential neighborhood

Research findings shows about 92% of robbery occurred along the road and crimes intensity is very high at 7.00-11pm and 00.00am-5.00am. Field observation and official interviews found that all streets in Temeke west neighborhood had no street lights. See plate 6.5 shows streets lacks street lights and walk ways which discourage street users to walk in safe position and creating non active Street and insecurity security due to robbery at night.



Sketch 5: Street with no street lights

Source: Field Work, 2018

Lack of street lights reduced pedestrian movement during the night between 7.00-10.00pm therefore this influenced criminals to commit crimes along the roads, in open spaces, in external buildings corridors and in parking spaces since they haven't fear of being overlocked by the street users.

Generally block layout design, imbalance of land uses, Poor parking orientation, Rear side entrance, and poor walking environment contributed to the crimes occurrence in the residential neighborhood specific in crimes sports areas which includes inside the house, in open space, on residential roads and on street parking.

V. CONCLUSION

The study concluded that the physical characteristics of the residential neighbourhood had a contribution to the occurrence of the urban crimes. Physical elements of the residential neighbourhood that have been designed and implemented haven't considered safety and security. These brought crimes in areas such as along the roads, inside the houses, in space between structures, in open spaces and in abandoned properties. On residential roads crimes tend to occur due to lack of street lights and lack of walk ways. On residential houses crimes occurred due to disorder block layout design, imbalance of land uses, lack of fences, and poor maintenance of openings. On open spaces crimes occurred due to lack of lightings, street furniture, Informal actives carried out in open spaces and Poor maintenance of open spaces. Finally crimes occurrence on between structures was due to narrow street paths and lack of outdoors lightings including side to side walls lightings during the night.

Research Findings revealed that addressing physical environment elements that influence crimes in residential neighbourhood have a great contribution on urban safety. This will achieved through designing out for crimes prevention in all physical environmental elements that influence crimes since the research findings identified physical elements including poor management of open spaces, lack of streets lights, presence of abandoned properties, vacant lots, Mixed uses imbalance and lack of walkways. All these contributed to the crimes incidences in Temeke west neighbourhood.

The study had been successful in identifying crimes prevention strategies undertaken by the residents were by most of the strategies are inadequate useful since the adaptation of that strategies is not for all few of them successful while most of the residents has no any strategies towards crimes prevention. General crime incidences can still increase if designing measures are not undertaken. Therefore there is a need to foster on the adaptation measures towards crimes prevention in residential neighbourhoods such as outdoor street lights, defensible spaces, Maintenance of properties, Environmental cleaning, Proper layout design and implementation, also strictly by law enforcements and neighbourhood watch groups.

The research findings revealed that the operations of the addressing challenges facing residents towards crimes preventions in residential neighbourhood bring to the successful of crimes preventions in residential neighbourhood hence increase liveability and economic development of the neighbourhood since it was revealed that crimes incidence creates fear for crimes and affect economic activities which lead to urban poverty.

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