

**APPLICATION OF CRIME PREVENTION THROUGH ENVIRONMENTAL  
DESIGN (CPTED) IN THE DESIGN OF A SHOPPING MALL IN MINNA,  
NIGER STATE**

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**JANUARY, 2023**

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**A THESIS SUBMITTED TO THE POSTGRADUTE SCHOOL FEDERAL  
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## **ABSTRACT**

Crime Prevention through Environmental Design (CPTED) is a place-based crime strategy. It affirms that, the proper design and efficient use of the built environment can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life. Crime has been a growing social problem in Nigeria, due to rapid urbanization. The challenge for shopping malls is the creation of an environment that is at the same time entertaining and safe. The aim of this study was to assess CPTED principles in shopping malls and how they relate to the perceived safety of users. The study was conducted in Minna, Niger State. Data for the study was obtained from case studies. The instruments used for the data collection in this study were a structured questionnaire and CPTED Audit. The findings suggest that traditional CPTED principles are being implemented within the design and built form of the study areas. The CPTED audit and the personal safety surveys both reported high levels of CPTED features within the environments. Although exploratory, these findings suggest CPTED is identified within the environment in similar ways by a CPTED audit and by citizens in the personal safety survey. CPTED concepts appear to be intact. Some of the study recommendations are: CPTED should be integrated into building process right from the design stage to completion and people should be educated about CPTED; they should be aware of its role as part of a comprehensive crime prevention strategy.

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## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 Background of the Study**

Crime Prevention as defined by the National Crime Prevention Institute (NCPI) is the expectation, identification and evaluation of the risk of crime thereby initiating some measures to prevent it (National Crime Prevention Institute, 1986). Crime Prevention through Environmental Design (CPTED) is defined as the appropriate design and proper use of buildings or neighbourhoods that can lessen crime panic and its incidence and as well improves the quality of life. CPTED is aimed at reducing opportunities for criminal activities that may possibly be incorporated into building designs (Crowe, 2000).

The relative influence of economic, location and other functional factors have aided towards a considerable increase in shopping activities in Nigeria. Rising on the back of increased urban population, changing shopping attitude, demographics and an increasing middle class, the development wide spreading through the retail market in Nigeria is becoming larger as the market looks forward to about 200,000 sqm of real estate space (Caroline, 2014). The increase in the Nigerian retail space directly reflects the growing awareness of the Nigerian middle class, whose shopping desire has moved from the traditional shopping in the open market, to a more organised and comfortable shopping experience guaranteed by malls (Odinaka, 2014). In order for a convenient shopping experience to be achieved, there is need for the customers to feel safe as they carryout their shopping activities.

The main aim of CPTED is to prevent potential criminals by altering the built environment; it relies on the urban design and psychology belief suggesting the surrounding environment can influence human behaviour (Cozens *et al*, 2005). Crime Prevention through Environmental Design (CPTED) is a multi faceted measure to crime resistance and prevention by deliberately changing certain components of the environs. CPTED is one of the core methods of place-based crime prevention; with the theory implying the surrounding alters the behaviour of its occupants, and therefore can be worked upon to lower the occurrence and panic, which in turn improves life (Schneider & Kitchen, 2002).

CPTED attest that the logical and deliberate change in the design of neighbourhoods has the ability to discourage potential criminals from committing crime (Crowe, 2000; Cozens, 2014). CPTED targets four main ingredients that should be present to prevent occurrence of crimes in the built environment. These include: Territorial reinforcement, access control, surveillance and image management (Crowe, 1991)

## **1.2 Statement of the Research Problem**

In Nigeria, owing to the increasing urban population crime has become a growing social dilemma, in recent past; researchers have criticized the ineffectiveness of the penal system (courts, police and prisons) in the area of crime as not meeting the expected result. (Sutton *et al.*, 2013). Hence, researchers have since been searching for a more flexible and citizens' friendly approach to neighbourhood crime prevention. Shopping malls` major challenge is to build an environment that is entertaining and also safe for their visitors (Kajalo & Lindblom, 2016). Attempts to deter crime in malls are very crucial when considering they have millions of visitors at all time. Though shopping malls can be seen as cities on their own, they are still linked to a greater 'social system'

via main thorough fares which give room for the convenient access and exit of shoppers (Felson, 1987). The connections that malls have to the social environment is crucial because malls can be designed to provide for aesthetically pleasing architectural layouts and porous borders, sometimes neglecting how such configurations will relate to site 'susceptibility,' crime 'possibility,' and 'target cruciality' (Kennedy, 1992). Therefore, every mall is supposed to be secured for their visitors; crime prevention techniques must be put into serious consideration right from the initial stage of the design to finish. Hence, it becomes mandatory for professional to come up with other means of lowering the chances for crime in mall environs, so that a relaxed and comfortable shopping adventure can be achieved.

### **1.3 Aim and Objectives of the Study**

#### **Aim of the study**

The aim of the study is to apply Crime Prevention through Environmental Design (CPTED) in the design of a shopping mall to enhance the safety of the building and its surrounding.

#### **Objectives of the study**

The objectives of the study are to:

- i. Access the causes of crime in malls and how they affect the building and the users
- ii. Identify CPTED principles that can be used to successfully prevent crime in shopping malls.
- iii. Implement CPTED principles for successful crime prevention in the design of a shopping mall in Minna, Niger State

#### **1.4 Justification for the Study**

This study is essential because it will contribute to knowing how design affects the safety of the building and the users of shopping malls in Nigeria, particularly Minna, Niger State. The study seeks to identify the causes of crime in shopping malls, implement CPTED principles designers used in designing a safe shopping environment. And also as a means of achieving a comfortable and safe shopping environment in Nigeria and Minna in particular. This research will increase the activities of shopping in malls than shopping in open air environment due to adequate safety that will be achieved.

#### **1.5 Scope of the Study**

This research will be conducted in Minna, Niger State. The study will focus on the application of CPTED principles in mall design. The study limits to application of CPTED principles only but not concerned about other crime prevention principles.

#### **1.6 The Study Area**

Minna, the capital city of Niger State is in the north central part of Nigeria (see Figure I.1). Minna had a population of approximately 356,456 as at 2009 (NBS, 2010). 9° 33' N and 9° 45' N in latitude and 6° 34' E and 6° 42' E in longitude (see Figure I.2). The local language is Gwari. The name "Minna" is in Gwari which means to set fire. The main agricultural products of the city are guinea corn, yam, ginger and cotton. It connects Abuja the country's capital by road 150km distance. There is also a small airport in the city. The geological found in Minna are basement complex and sedimentary rocks. Minna experiences a distinct wet and dry season with yearly rainfall varying from 1100mm to 1600mm. The rainy season begins from the month of April to the month of October with it highest in June and July or August and September in some years

(Uthande, 2001). The mean monthly temperature is reaching it highest in the month of March at 30.5<sup>0</sup>C and lowest in the month of August at 25.1<sup>0</sup>C. Minna is characterised for different land use but in many parts, mixed use occurs. Areas are divided into governmental, residential, commercial and industrial.



Figure 1.1 Map of Niger State  
Source: Google image (2020)

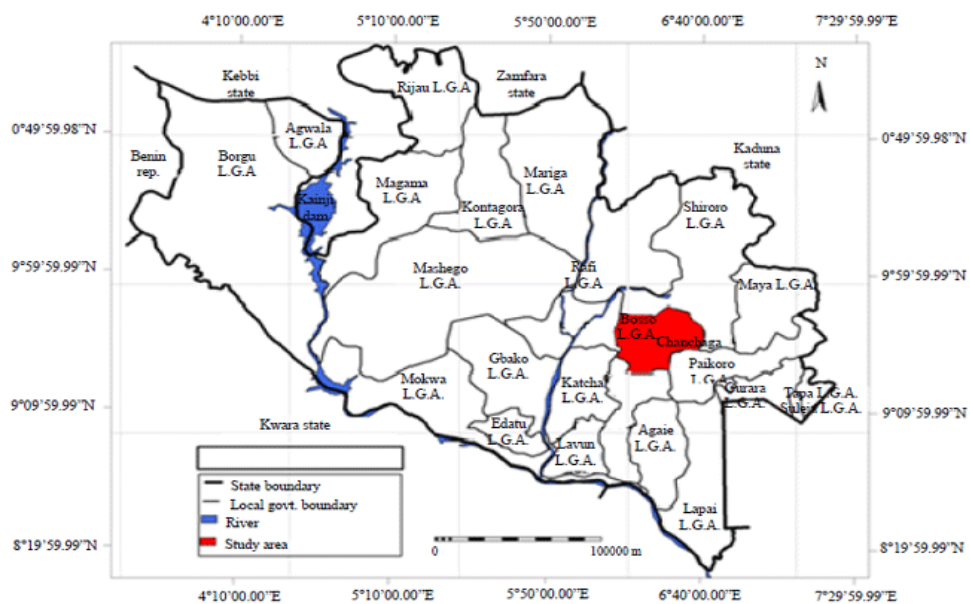


Figure I.2. Map of Minna, Niger State  
Source: Google image (2020)

## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 CPTED Concept Overview

CPTED is an abbreviation for Crime Prevention through Environmental Design. It asserts that, the appropriate design and proper use of the surrounding can bring about a reduction in the occurrence and fear of crime and can also improve life (Cozens, 2000; Crowe, 2008). CPTED a multi-faceted strategy drawing on planning and behavioural psychology, and is categorically found within the scope of environmental criminology, deriving theoretical background from theories including rational choice theory and routine activity theory which focus on identifying conditions of the physical as well as the social environment that give opportunities for criminality and the manipulation of these conditions in order to eliminate them (Brantingham & Faust, 1976). It aims at proactively preventing crime, in comparison to the reactive approach of many criminal justice systems like the correctional facilities and courts (Cozens & Hillier, 2012).

Jeffrey, a renowned criminologist from Florida State University devised the concept “Crime Prevention through Environmental Design”. He published his first book, “Crime Prevention through Environmental Design,” in the year 1971 and introduced a unique approach of unified systems to studies associated to crime (Robinson, 1996). This criminologist came up with his principles focusing on experimental psychology pictured in present day learning theory leaning on the premise that the environment can bring about either delightful or awful experiences, which also have the strength to change the attitude of possible criminals (Robinson, 1996). In his 1990 publication, “Criminology: An Interdisciplinary Approach” Jeffrey went further to create the CPTED model. This publication discussed the unified systems approach, which connects two critical features of CPTED via a biological-psychological method; the point where the crime occur, and



also the individual that committed it (Robinson, 1996). This signifies that attitude can be changed by modifying the external environment of a space or the psychological environment of the criminal.

## **2.2 Elements of CPTED**

Several authors, including, but not solely Poyner (1983), together with Cozens *et al.* (2005) including Armitage (2013) presented the CPTED principles and different countries inherited them to portray the characteristics of safe areas and surroundings in planning policies and management. Poyner (1983) present the elements as surveillance, activity support, movement control and motivational reinforcement. Cozens *et al.* (2005) extends the strategies to cover the seven (7) principles of defensible space, surveillance, target hardening, territoriality, access control, image and activity support. Armitage (2013) present another group of surveillance, access control, management and maintenance, defensible space and physical security. Montoya *et al.* (2014) examine the importance of the six elements of surveillance, territoriality, access control, maintenance, target hardening, and activity support on burglary related act. Moreover, Marzbali *et al.* (2016) offered four primary aspects of territoriality, surveillance, maintenance, access control and eight sub-categories includes lighting, security system, visibility, markers, physical barrier, front house maintenance, landscaping, and back-house maintenance.

### **2.2.1 Surveillance**

Natural surveillance is an old principle of crime prevention. Chances for people to put an eye on streets which is aided by the street outlook, windows placement, position of entrances, and for example. It is seen as a means of capable monitorship that can deter crime because offenders who suspect that they can be noticed (even though they are

not), are less prone to offend, in the light of the possibility for intercession, apprehension, and prosecution. Other forms of surveillance include formal or organized (police and security patrols) and mechanical/electronic surveillance methods (closed-circuit television [CCTV] and street lighting). Surveillance and visibility as suggested by research plays a big role in offender's decision-making plan when choosing places to go and offend. Criminals try to stay away from confrontation and, usually, choose places that are empty (Cromwell & Olson, 1991).

### **2.2.2 Physical securities**

Target hardening considered to be a physical security and includes things like initial design, or retrofit improvement of doors, windows and other structures to make it difficult to get into a building. Research relating to external security as a means of curbing burglary proclaim that, all other factors staying equal, offenders find it easier to burgle against buildings with less physical security (Cromwell & Olson, 1991).

### **2.2.3 Limiting access and through movement**

Access control is the designing of structures and places to actively restrain people from entry. Whilst this method is traditionally described as access control, may be because of its routes in greater traditional situational crime prevention method to prevent entry into buildings and rooms inside the buildings, within CPTED the goal is much bigger. It encompasses the aims below:

- i. To minimise the likeliness that criminals will become informed about that place as a potential destination;
- ii. To make it become very cumbersome for criminals to man over into, get out of and inside an area, in case they chose it as their targeted place;

- iii. To add to the difficulty of gaining access into a building in case they notice the area as a place to target;
- iv. To psychologically increase the difficulty for criminals to enter and walk around a place without being noticeable, and
- v. To displace all excuses for potential criminals to stay inside a private area or semi-private area and give the genuine users' courage in confronting non-genuine users of such areas. (Cromwell & Olson, 1991).

#### **2.2.4 Image Management and Maintenance**

Though other authors used 'management and maintenance' to refer to the act of achieving spaces or places physically free from damage, vandalism and litter, but are also areas without disgrace or a poor social name, Cozens *et al.* (2005) make use of the word 'image'. It is hard to attach a specific name to this element as image depicts a state and management and maintenance refers to the actions that bring about the state.

#### **2.2.5 Activity Support**

Activity support refers to the design of environments that increase the possibility that potential customers will make use of a particular place and still serve as means of surveillance. Though activity support is taken by most people as a different principle of CPTED, the major goal it has is enhance surveillance, but not withstanding; some scholars would disagree, that, the two be combined (Cozens *et al.* 2005)

### **2.3 Impact and scope of CPTED**

The impact and scope of CPTED is certainly evident in the recent emergence of ideas regarding the synergies between CPTED and urban sustainability (Cozens, 2002). Indeed, residents of crime-ridden communities often experience some of the most severe environmental and social problems. A sustainable community must therefore, be

one that is defined as safe, perceives itself to be safe and is considered by others to be safe. Arguably, the standardization of CPTED concepts in planning processes could avoid the repetition of some of the “unsustainable” design failures of the recent past and contribute towards a form of “urban environmentalism” for the twenty-first century (Cozens, 2002).

#### **2.4 Overview of Shopping Mall**

Shopping Mall is an exclusively designed pedestrian territory which incorporates some restrictions which allows individuals to walk around comfortably (Onibokun, 1975). The mall is said to be a shopping environment having pedestrian paths at the centre, mostly within the building. The adoption of “Mall” as a word to describe a pedestrianised shopping path was started in North America in a quest to showcase a greater sensation of quality and elegance than is often related to gallery. Malls are wide to give a large central space for relaxing, water fountain, planting, and other movables (Northern & Haskoll, 1977).

#### **2.5 Classification of Shopping Mall**

In the past years, mall formats have adapted a series of names; including Centres, Plazas, Promenades, Shops, Commons, Hybrids, Lifestyle Centres, Crossings, Malls, Mega-Malls, Markets, Mixed-Use, Marts, Outlets, Places, Parkways, Strips, Squares, Super Centres, Town Centres, Urban Retail, Villages and Vertical. Unfortunately, there is no single concurrence as to the number of various forms of shopping centre formats we really have, or how each centres should be classified to the available groups. In Addition to this uncertainty is that the shopping centres can be still being distinguished by a series of marketing and management techniques including: Entertainment, Ethnicity, Festival, Luxury, Lifestyle, Off-Price, Tourist, Theme (e.g., home improvement and furniture), Urban and Value. When taken into consideration the

possible merging of these 23 forms of distinguishing factors, it is comprehensible that some sees the retail industry very complex and difficult to define (James, 2005).

### **2.5.1 Regional centre**

A shopping centre comprising one department store, supermarkets, complete discount department store, and around 120 or more specialty shops and functions. In other cases, all other factors being same, centres having two discount department stores, with no department space, also defines a regional centre. Features as follows:

- i. Full scope of a bigger range of retail needs (including specialised retail), however, it may not be as exhaustive as major regional centres;
- ii. Comprise a full line department stores, full line discount department stores, supermarkets, chain, banks and other specialty retailers
- iii. Provide a large choice of user facilities and amenities. (Plate I).



**Plate I:** Regional Mall, Singapore.  
Source: Arcdaily (2020)

### 2.5.2 Super regional centre

International Council for Shopping Centre (ICSC) stated that, a major centre typically incorporates two full department stores, one or more discount department stores, two supermarkets and around 260 or more specialty stores. Total GLAR surpass 80,000 square meters. Features are given below:

- i. one-time shop for every need;
- ii. extensive information of the full range of retail needs (including specialized retail), including a merge of full department stores, chain, services, another specialty retailers shops;
- iii. typically comprise a number of relaxing, leisure attractions such as cinemas, game arcades and soft play areas
- iv. give a bigger range of customer facilities (food court, parking) as well as amenities such as (resting, restrooms,). (Plate II).



**Plate II:** Super regional City land Mall, Dubai land, Dubai.  
Source: Arch daily (2020)

### 2.5.3 Neighbourhood centre

A district centre including one supermarket and approximately 30 specialty shops all together. Total GLAR will typically be less than 11,000 metre squares. Features as follows:

- i. Normally located in areas where there are residents;
- ii. Service close neighbourhood;
- iii. Often have extended trading time; and
- iv. Cater for basic day-to-day retail needs. (Plate III).



**Plate III:** A neighbourhood centre, Cornelius, Oregon.  
Source: Archdaily (2020)

### 2.5.4 Lifestyle centres

Lifestyle centres are targeted at a specific sector of the market – the young urban professional, with a tendency towards upmarket retailing, providing shops and facilities for those with ambition and the desire to succeed. Lifestyle centres incorporates

selective elements present at the mall but is arranged in an external and attractive environment. Therefore, attracting customers from the mall and those who would normally not select the mall as their option for shopping. Lifestyle centres comprise of a selected mix of an operational retailer. These retailers are a combination of comparison fashion brands, sportswear and leisure which showcase a hobby or interest, and household commodities providing good quality furniture and housewares. All the shops contain some kind of products which the visitors would aspire to and reflect their ideals. In combination with these retailers there will be at the same time a combination of cafés and restaurants allowing a visit to the center to be relaxed refreshment or a meal (Peter, 2006).

## **2.6 Criteria for Shopping Mall Design**

### **2.6.1 Optimum size**

The optimum size of a shopping centre is given as an amount of retail floor space that can be leased to retailers. The brief of the designer is normally expressed as an amount of area available for letting. It is of great importance, for reasons of fast site planning process, for designers to express the lettable space into the overall GLA. To attend this easily, extra area must be added with the GLA to give room for service access, escapes routes, supporting accommodation, buildings and exterior walls. It's considered that, the gross lettable area those not cover the general circulation space, yards and parking which is needed to be provided. The circulation space also needs to provide for every construction which is affected by isolated site scenario. The provision of general circulation inside gross area is different in enclosed as well as open schemes (Schoenher, 2006).



### **2.6.2 Site accessibility**

Site accessibility has been identified as one of the main issues for consideration when assessing the potential location of a shopping centre development. Accessibility directly affects the fundamental workings of a shopping centre. It affects how easily customers can visit and be encouraged to return, how efficiently goods can be delivered to supply the shops and the means of safety and security of the occupants. Understanding a site location giving way for public transport, private cars and service vehicles are very important in establishing the brief for new facilities in the development. Accessibility includes an understanding of all method of transport and access to the site which includes pedestrian and cycle-ways (Schoenher, 2006).

### **2.6.3 Parking Area**

Private cars serve as the best choice for transporting shoppers visiting a mall. They offer a safe, comfortable and reliable means of movement and, till public conveyors becomes economical and convenient, will always be the existing blood of centres. No surprise the sudden scarcity of petrol and also diesel source makes it necessary for other means be put into consideration. In the near times the design of malls will have to incorporate the cars as the method of transport to the larger percentage of shoppers to the mall.

Car parking in a mall development is made available in many forms, or in series of combination of the following:

- i. New spaces build with the mall
- ii. Existing parking by the side of the shopping centre
- iii. Outside parking in a garden and ride with buses carrying shoppers out of the premises parking to the city.

Many anchor occupants often have minimum parking for the quantity of parking spaces they like to make available on site. The number may not be the same; can sum to 1000 spaces for certain occupants. British Council of Shopping Centres presents a generally acceptable rule of 2 to 4 functions in every 100m<sup>2</sup> of new accommodation (British Council of Shopping Centres, 2000). In a typical centre of 50 000m this may reach 1000 or more parking areas (Schoenher, 2006).

#### **2.6.4 Services vehicles**

Service trucks refer to all the trucks servicing the catering, leisure areas and shops of the mall. These vehicles serve as the functional life blood of a shopping mall and should stay hidden to the shoppers. They are of great importance in the activities of the occupant and to the proper functioning of the environs. The service vehicles to available are fire-fighting trucks, shop delivery trucks, and refuse dumping truck (Schoenher, 2006).

##### **2.6.4.1 Access for fire fighting**

The centre needs to be arranged to provide for ready routes of fire-fighting vehicles to already determined places within the mall. Hose reels will be required to reach out from the fire-fighting truck from these predetermined points of access to cover all parts of the shopping mall. There is greater need for early meeting with fire service to put in place the allowable maximum reels lengths, so that we get the height of access for fire-fighting truck. Access for Fire-fighting truck need not be obstructed and of good breadth to provide for turning when not outlined on a linear path. The significant weight of a fire-fighting truck needs to be considered during access route construction. (Peter, 2006).

### **2.6.5 Layout**

The key to the success of a mall is the layout which is considered as a very important content of the brief. The brief commence with reasons which can improve while design continues. (Peter, 2006).

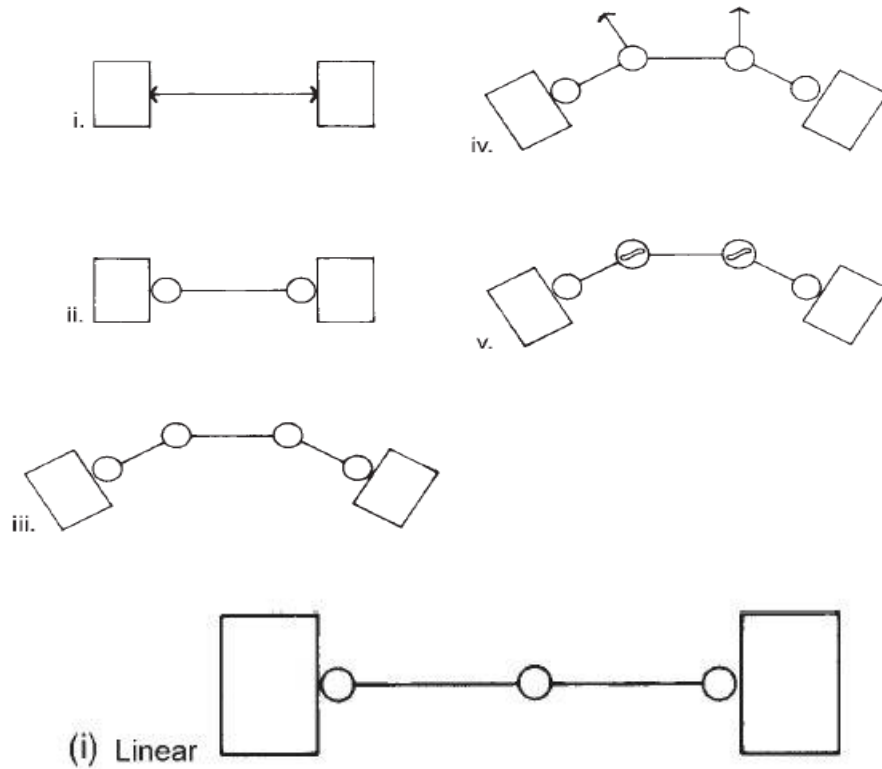
## **2.7 Horizontal Circulation Layout**

The basic form of providing heavy pedestrian movement is to position the generators of traffic with extra care. Stronger retail areas are the ones considered as having high number shoppers. Congestion naturally occurs when you approach an anchor store and seize the moment you past it, except another attraction, or anchor, is located in front. Hence, the anchors should be intentionally placed to put all the spaces of the centre to use and for them to be distributed past all the shops

### **2.7.1 Types horizontal layout**

#### **2.7.1.1 *Linear arrangement***

The organisational format places the circulation space and functions in a linear format in the middle of two of the anchor stores. Known as dumb-bell; linear centre thereby connecting between two points connected to anchors. Figure 1 below display the fact, portraying this arrangement to be varied by different points formed by node. The number of fluctuation points on the distance of the public circulation depends on the amount of functions and size of the site.

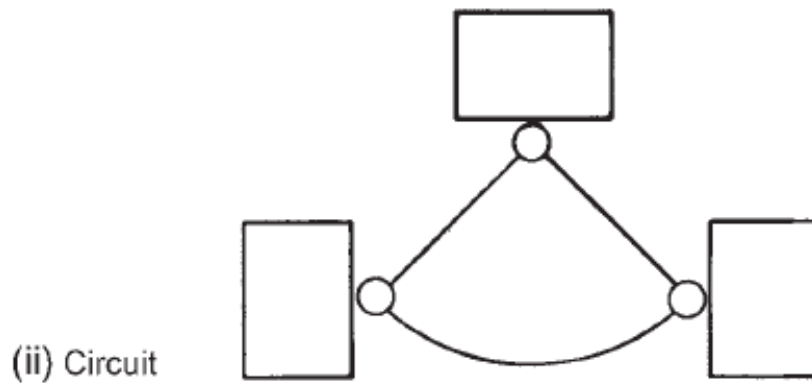


**Figure 2.1** Linear Arrangements

Source: Peter (2006).

### **2.7.1.2 Circuit arrangement**

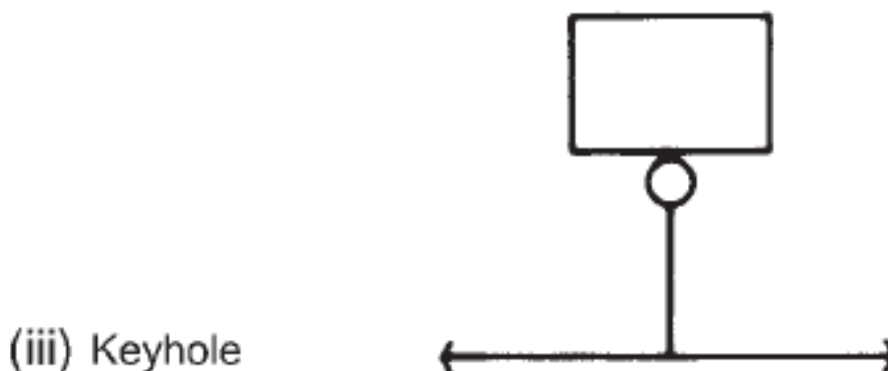
Shop spaces needs be designed in such a manner that the public movement provides a flow of a pedestrianised circulation. Circuit format of mall arrangement inspire continuous circulation in front of the shops and then back to the arrival point. This allows the shopper to walk the entire spaces of a mall having no need to retreat. Circuit arrangements can be made in three dimensions by putting into consideration both the plan and vertical arrangement of the format. Circuits may be singular or multiple by using a figure of eight. Pedestrian movement in circuits' arrangement are created by the logical placement of an anchor store at corners to sustain willingness. Anchors should be made visible so as to direct the shopper. Maintaining sightlines and an unobstructed visibility from an anchor element to another are considered necessary.



**Figure 2.2** Placement of anchors in a circuit generated manner.  
Source: Peter (2006).

### 2.7.1.3 Keyhole arrangement of Anchors

This type of arrangement is dependent on a one point of entrance and back from the street. The direction of the format is usually one or more big anchor elements placed at the last end of the connecting route, this attract visitors making them past all the frontages to their destination. Single point entry and return suits multi-level arrangement better, allowing shoppers to enter and walk around the destination on a particular level and be back through the other, thereby skipping having to retrace steps in front of the same shops (Figure 2.3). A means of vertical stage change close to the entrance will be needed, together with the anchor element having entrances on every circulation level, in order to fasting entry/return routes completed at different levels.



**Figure 2.3** One point of entry and return to a high street can also be provided in multiples for several keyholes to be created. Source: Peter (2006).

## **2.8 Vertical Circulation Layout**

Vertical circulation is among the key enablers of the performance of multilevel shopping centres and, as such, enhances shopping development situated on high value land. Vertical circulation should be considered, in multi-level schemes, like wise with horizontal circulation, which will serve as a way of structuring the layout and encouraging shoppers to pass in front of all the shop units evenly. Placement of vertical circulation has to bring about a balance between encouraging pedestrian footfall as well as providing a convenient ways for visitors to travel from one floor to the other. Vertical movement needs to be organised to provide shoppers passing front of a line of shops before changing level and coming back to past in front of another length of shop. Equally, the vertical means of movement should be placed so that it can be seen, letting shoppers stand in a leisurely style having seen the place of level change. Position of vertical carriers should be good enough to motivate visitors to walk to the place of changing level.

### **2.8.1 Forms of vertical circulation**

Where vertical movement is needed to enable level changes in the building, there are variety of means to provide this. It's normal for a combination of stairs, escalators and lifts to be made available in order to solve the needs for vertical movement in high rise shopping buildings. To accommodate small level changes, ramps and sloping the floors are also used.

#### **2.8.1.1 Stairs**

Feature stairs around the public circulation functions are flexible and appropriate way for visitors to travel vertical distances between the levels and often used and recognised in mall buildings. They are positioned individually or with escalators in various formats. The overall circulation patterns can be reinforced by stairs if located at strategic

positions, in node spaces, together with escalators. Alternatively, stairs position can be individual within node spaces in the circulation space when there are no escalators in the space. Stairs become accepted in the space better than escalators and gives an alternative choice which allows shoppers to navigate from a floor to the other. Placing ramps independently and also slopping the floor is used to obtain floor difference between spaces:

- i. Present external or street level at the entry paths and an internal floor
- ii. Completed floors caused by shops (under the circulation area) with separate floor to another floor height demands. Serious consideration needed to be given to ramp designs to make sure they stick with the regulatory requirements for accommodating less privilege people.

#### **2.8.1.2 Escalators**

Mechanical moving stairs have been adopted in retail environment for many years, since the time Bloomingdales fixed escalators in its late-nineteenth century departmental stores. Since they accepted them in department stores, escalators have been into common use in centres from the period of growth in 1950s America – with the growth of outskate regional centres. These first American centres recognise the escalator to be the primary means of transferring large volumes of the shoppers between different levels. Escalators are now used as the primary means of vertical circulation in business facilities in all parts of the world (Steven, 2005).

#### **2.8.1.3 Travelators**

Travelators (also referred to as passenger carriers) are more like escalators which serve as a mechanical method of transporting travellers through vertical distances, just that their floors are flat instead of steps. As a consequence, they are longer than escalators

and usually arranged at a shallower pitch. As mentioned earlier, travelators are often used in a place where the numbers of customers are large and trolleys are used to convey goods to parking areas in another level to the shops. Travelators are mostly provided in centres that comprise a big hypermarket and produce store. Travelators are situated in close distance to the place where the transporters are needed so that they will not be wheeled about the entire centre. Longer linear spaces are required by travelators into which to fit the installation properly and are usually not flexible to position compared to escalators. Theoretically, travelators can be configured in several ways as in escalators. However, putting into consideration greater physical requirements so as to fit them, for practical reasons travelators are often configured in parallel pairs, with the up and down routes placed side by side (Steven, 2005)

#### **2.8.1.4 Lift**

Disabled persons, people with prams and those with push chairs will require passenger lifts or elevators. The lifts can therefore be used for the general need of the shoppers. Lifts taken into consideration here are the ones in operation between the floors of public circulation space and areas connecting to the parking placed at the top or below the shopping centre. Directly connected lifts to car parking is going to be a significant generator of footfall and should be strategically placed to assist in balancing and distributing pedestrian footfall between different floor levels of the facility. Lifts specifically designed to serve public circulation spaces can either be conventional lifts, or free-standing feature lifts placed in the circulation space. More practical are conventional lifts, they accommodate more passengers and can incorporate vision panels that are glazed to improve customer feeling of safety. Feature lifts can be extensively glazed but are usually less practical due to the fact that they accommodate fewer passengers compared to conventional ones (Steven, 2005)



## **2.9 Ventilation**

Ventilation is simply the phenomenon that involves air circulation – removing used air and replacing it with fresh and new air. Ventilation also reduces the effect caused by high level of humidity prevalent in the hot-humid region. Ventilation can be obtained by means of natural ventilation and artificial. Artificial ventilation: Since natural ventilation cannot provide controlled conditions to be relied upon, mechanical means are usually employed. This is the manipulation of the temperature as well as relative humidity found in an area and the composition and circulation of air around it (Ernst & Neufert, 2006).

## **2.10 Facilities in Shopping Mall**

Housing the four important sections seen (ICSC, 1998) as the modern spaces that a centre should have to be considered as a mall shall be the aim of the mall complex.

These include

- a. Retail Facilities
- b. Catering Facilities
- c. Entertainment Facilities
- d. Leisure facilities

### **2.10.1 Retail facilities**

The unit shop makes up the nucleus of a shopping centre and attracts the attention of visitors to make use of the shopping facilities. The types of shops are:

- a. Unit shops
- b. Medium space users (MSU`s)
- c. Departmental store.

a. Unit shops

Most of the accommodation in malls is occupied by unit shops. The shop size, which is readily rented to potential tenants. Unit shops of different sizes needs to be allocated to meet the general space needed by different tenants (Coleman, 2006). Assessment by the BCSC (1998) present the unit shop sizes below:

- i. Mostly (63%) needs floor area of  $95\text{m}^2 - 380\text{m}^2$
- ii. Small section (19%) requires less  $85\text{m}^2$
- iii. Strong Preference needs floor space of  $190\text{m}^2 - 325\text{m}^2$
- iv. A section (18%) requires bigger than  $390\text{m}^2$

Therefore, considering this method, a shop unit of 7.5m large by 25m deep covering a normal area of  $189\text{m}^2$  is ideal and the allowable proportion ranges from 2:1 3:1, and 4:1 (height to width).

b. Medium space users (MSU's)

Principles layout for shops connects to medium space user (MSU) store. The MSUs are carefully located inside the layout so that they act as attraction centres and to direct visitors from an area to another area.

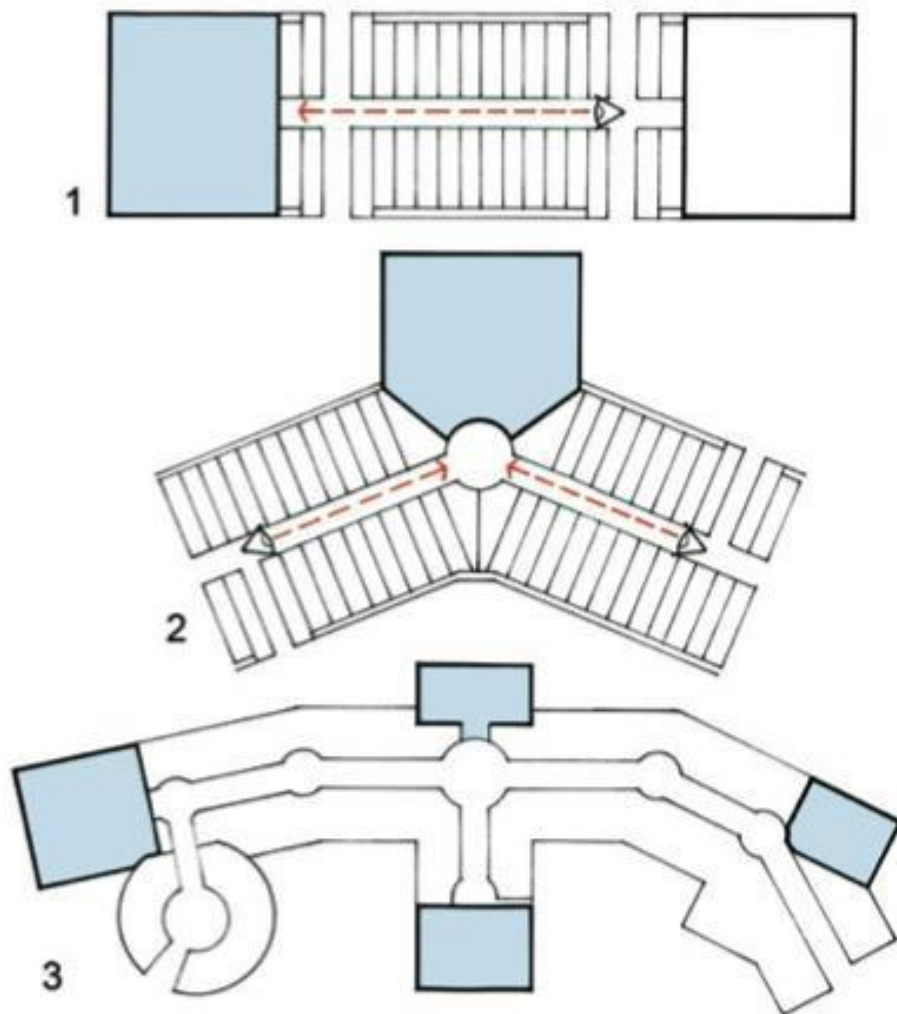
c. Anchor Stores

Anchor store is said to be the third fundamental types of function needed or accommodated in the overall layout. The sizes varies from 7500 to  $24000\text{m}^2$ . The stores are also considerably placed and are one of highest pedestrian circulation generators.

Anchor store typical position would be one of the following:

- i. Located at the end of a line of shops, so as to draw customers past in front of the shop.
- ii. Positioned at a change in direction in the design in a way that will make it visible and capable of drawing customers to it in every direction.

iii. Strategically location to achieve focus point in big complex.



**Figure 2.4** Position of Anchor  
Source: Peter (2006)

### 2.10.2 Catering facilities

Catering is considered one of the essential reasons of going to a centre and also leisure places, it's not only to increase the attractiveness of a certain mall but also to increase the time spent and the number of orders by a customer in a stay. Catering facilities cover a proportion of the entire accommodation, ranging between 2-26%. It is desirable to position catering facilities closely or adjacent to the retail units in the secondary or off prime pitch area. The vast form of catering facilities that can be integrated into centres can be divided into three main types. The facilities are as follows:

a. Food courts

This is a style that provides fast food, with limited options obtained by serve yourself and eaten in a communal seat arrangement. Food courts are positioned at an extension of the mall public circulation area. A typical arrangement may include six to eight of these types of offers where each unit covers 40-60m<sup>2</sup> of serving a communal seating area with table for up to 400 persons.

b. Restaurants clusters

Restaurants are said to be catering offers and are located individually. Their size varies which depends on the type of restaurant. For instance, a small one can be incorporated into a unit 130m<sup>2</sup>, whereby a large one requires a larger unit say 560m<sup>2</sup>.

### **2.10.3 Leisure facilities**

Leisure activities in conjunction with malls are business oriented activities in which the owners collect money from the visitors for enjoying their facilities. The said activities include both passive as well as active and involves normal and specialist. The most common forms of facilities for leisure integrated in malls are as follows:

a. Multi-screen cinema

This cinema type is the most popular leisure activities in combination with mall development. This type is two sided giving the shopper an option of programme and offers the attendant the privilege to assess the business capability of each of the films. The minimum allowance of screens is in between 3 to 6. The size of hall varies to offer the required flexibility that provides 100 seats. The required area for a large screen cinema can be inserted in a space approximately 4150m<sup>2</sup> GLA.

b. Fitness centres

Fitness centres have increase in popularity based on the increase in relaxing time and public alertness of the significance of physical well-being. A standard facility can require 4100m<sup>2</sup> or more space.

c. Bowling passage

A bowling passage belongs to a magnificent leisure destination, whether regional mall and leisure centre or retail enjoyment centre. The amount of floor area will be decided by the amount of bowling paths to be installed from the minimum 4 up to 40 lanes. Each lane needs a complete area measuring 25.7m length and 1.8m width including the actor's space; bowling path and area for the fixing machine.

#### **2.10.4 Customer care facilities**

Customer care facilities as facilities that has to do with individual hygiene and cleanliness or a personal services have great influence regarding the visitor's memory of a mall. The facilities as follows:

a. Public convenience

The positioning of public toilets needs to be balanced in such a way that it will be readily accessible, without passing through valuable shops facades.

b. Crèches

Crèches needs to be appropriately positioned in a placed near the public circulation, but most not cover the prime retail area.

According to BCSC (1998) the suitable size of a crèches is one accommodating 40 children, and has more workers facilities, toilets, storage and occupying an area of 185m<sup>2</sup>.

c. Shop mobility

Shop mobility refers to the tools that assist access to a mall by disabled visitors. They should be positioned not too far from the entrance, preferably adjacent to a car parking area.

### **2.10.5 Back of house**

Back of house space in a shopping mall needs to be kept hidden, generally out of bound to the public, but it's essential to the function and safety of the mall. Even when the back of house space seems secondary to the basic accommodation, they become intrinsic to the function of the centre. The main items of back of house include the following:

a. Centre management suites

The prime purpose management suite's is to accommodate the operational management and administrative functions of the centre. The management suites must balance the needs of being publicly accessible, while maintaining the operational aspect in a distinct way. The management facilities are as follows:

- i. Management Suites
- ii. Maintenance tools
- iii. Control rooms
- iv. Staff Rooms

b. Deliveries and Access

Shopping centres consist of multiple businesses showcased by distinct shops. Deliveries accesses are used in supplying commodities to allow the retail businesses to function.

These facilities are as follows:

- i. Service Corridors (Deliveries)
- ii. Service Lifts

iii. Interconnecting Stairs

iv. Service Yards

## **CHAPTER THREE**

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Research Design**

The study employed the use of case study design. Yin (2014) defines a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context. This allows ongoing issues in society to be investigated and understood for the appropriate interventions thereof. Thus, the underlying notion of a case study is that it focuses upon understanding in breadth and depth the specific situation or phenomenon to be studied within its context. This allows the researcher to fully grasp the context of the issues under study from the people concerned for the purposes of validating a proposition. In the same vein, Yin (2014) posits that a case study is suitable for examining “why” as well as “how” and “what” questions (among question series: “who”, “what”, “where”, “how” and “why”). These are enquiries about a contemporary set of events over which the researcher has little or no control and especially, the “how” question is suitable for a case study. This is because this question deals with operational links needed to be traced over time, rather than mere frequencies. Therefore, the case study approach was selected because it has the advantage of producing good amount of resources from a wide range of people. Again, it provides a meaningful and accurate picture of events and helps to explain people’s perception and behavior on the basis of data collected at a point in time. The case study approach was selected in the sense that it places more emphasis on a full contextual analysis of fewer events or conditions and their interrelations. Three case studies which include Ceddi Plaza Abuja, Silver bird Galleria and Jabi Lake Mall in Abuja city were selected and considered to be adequate to realize the research objectives.



### **3.2 Case Studies and Survey Research Method**

A case study is a factual study that examines a contemporary event in its reality context by the use of many sources of evidences (Yin, 2004). Qualitative analysis of selected cases as well as a study of published and unpublished literature was the methods of study employed for this research. This case study is based on assessing the CPTED features in shopping malls. The investigation was carried out through structured questionnaire and CPTED Audit. The CPTED Audit was conducted using observation schedule. A complete Audit Score (presented as percentage) for the three sites were generated from the observations.

Secondly, a survey was carried out with respect to the perceptions on personal safety of visitors, user crime and CPTED. 250 people (visitors the shopping mall) with no gender distinction answered a structured questionnaire which contains yes/no questions. This survey was conducted in English; questions broadly connected to CPTED were asked. However, the complete audit scores from the responses were used to develop a Perception Index, thereby forming a percentage score.

### **3.3 Population of Study**

All shopping malls in Abuja form the study population: Ceddi Plaza, Silverbird Galleria, Dunes Centre, The Capital Hub, Jabi Lake Mall, Grand Towers Abuja Mall, and Grand Square, these buildings are in the same region with the chosen study location. They are seven in number. The population of the seven mall is estimated to be approximately 1.7 million people

### **3.4 Sampling Method and Sample Size**

Case studies are normally chosen on the purpose they intend to serve; cases are also picked due to the fact they can provide information regarding the research objectives. Based on the nature of this particular research, purposive sampling was employed in choosing case studies. Case studies were selected due to their relevance, and information they are capable of providing. Among the seven shopping malls in Abuja three were chosen (Ceddi Plaza, Silverbird Galleria, and Jabi Lake Mall) which represent 43% of the study population. The overall sample size were 250 persons from the three selected malls in Abuja.

### **3.5 Instruments for Data Collection**

Case studies were assessed using structured questionnaires and CPTED Audit. The CPTED Audit in the form of an observation schedule provided the basis of assessing buildings while the questionnaires assessed perceived safety of users. CPTED Principles audited include the following:

- i. Territoriality
- ii. Surveillances
- iii. Control Access
- iv. Target Hardening
- v. Image/Management
- vi. Activity Support

#### **3.5.1 The Field Observation**

A comprehensive ‘observation’ of the malls and its environments (with photographs) was conducted. By the use of CPTED principles, a template was created by the researcher to investigate the state of the following hiding corners, dark corners,

sightlines, illumination, transparency of material, availability of barriers, formal as well as informal social boundaries, social spaces as well as land use.

### **3.5.2 Questionnaire**

250 people (visitors of the shopping mall), with no gender distinction, responded to a structured questionnaire utilizing Google forms on a mobile phone. 15 percent of the respondents visit the shopping mall every day, to eat, shop and/or work; a 35 percent are frequent visitors, coming a few times a week for similar reasons; while 50 percent visit a few times per month or less. The survey was carried out in English language. Perceived safety of visitors in the centres was assessed by different questions asking about:

- a. previous victimization of the shopper;
- b. events of disturbance within the mall witnessed by the visitor;
- c. their families and friends safety (perceived safety and victimisation);
- d. places and particular moments the visitor feel not being safe inside the mall or close to it.
- e. perceived safety of the visitor in the centre.

### **3.5.3 Validity and reliability of the research instrument**

Zohrabi (2013) asserts that the validity of an instrument is the extent to which it measures what it purports to measure and its ability to gather data suited to the specific purpose of the study. Hence the instruments used to assess the availability of CPTED measures as well as the perceived safety of the users of the shopping malls were formulated after a thorough reading of related literature and studies about crime in shopping malls and CPTED. The draft of the instruments was forwarded to the research supervisor for evaluation and suggestions. After the supervisor validated and enriched

the instruments, the researcher prepared the final draft, making the instruments valid and reliable for the current research

### **3.6 Data Collection Method**

The case studies for research which involves theory in the field of Architecture, requires general methods of collecting data ((Yin, 2004). The methods involve: visual survey and checklist, observation and individual observations, questionnaire, models and scientific measuring tools among others. For this research purpose, perceived safety survey and CPTED Audit based on the CPTED measures of the cases were selected.

#### **3.6.1 Procedure of data collection**

Procedure of data collection involved the study of existing malls, which involved identifying and listing CPTED measures available, with photographs of each. Sketches and floor plans were also analyzed in order to determine CPTED measures available at the selected sites.

#### **3.6.2 Method of data analysis**

The method of data analysis refers to the several techniques of providing potential answers to relevant questions arising in the research work. This is done through the analysis of data gotten from the various sources. The data gotten was analysed descriptively with Statistical tools employed for the analysis. Elements of statistics such as pie charts, tables, plates, and figures were used. A form of appraisal is also provided for analysis of observed data gotten in the process of case studies. Plates were used to describe the physical environment in the selected study areas in relations to this project.

### **3.7 Summary of the Research Methodology**

This chapter describes the qualitative research method for the study and the rationale for choosing each in this context. In addition, this chapter describes the methodology for this study, including a description of the population and participants, how participants were selected, the roles of the researcher, an explanation was also included concerning the data collection tools, how data was collected and analysed. The researcher discussed threats to data quality, validity and reliability in reference to the current research study.

## **CHAPTER FOUR**

### **4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION**

#### **4.1 Analysis of Data**

The data for this project was collated manually and analysed by the use of Microsoft excel. The data analysis was presented based on the research objectives as earlier stated in chapter one of this thesis, descriptive method of statistical analysis by the use of charts was employed for this research

#### **4.2 Case Study One: Ceddi Plaza, Abuja**

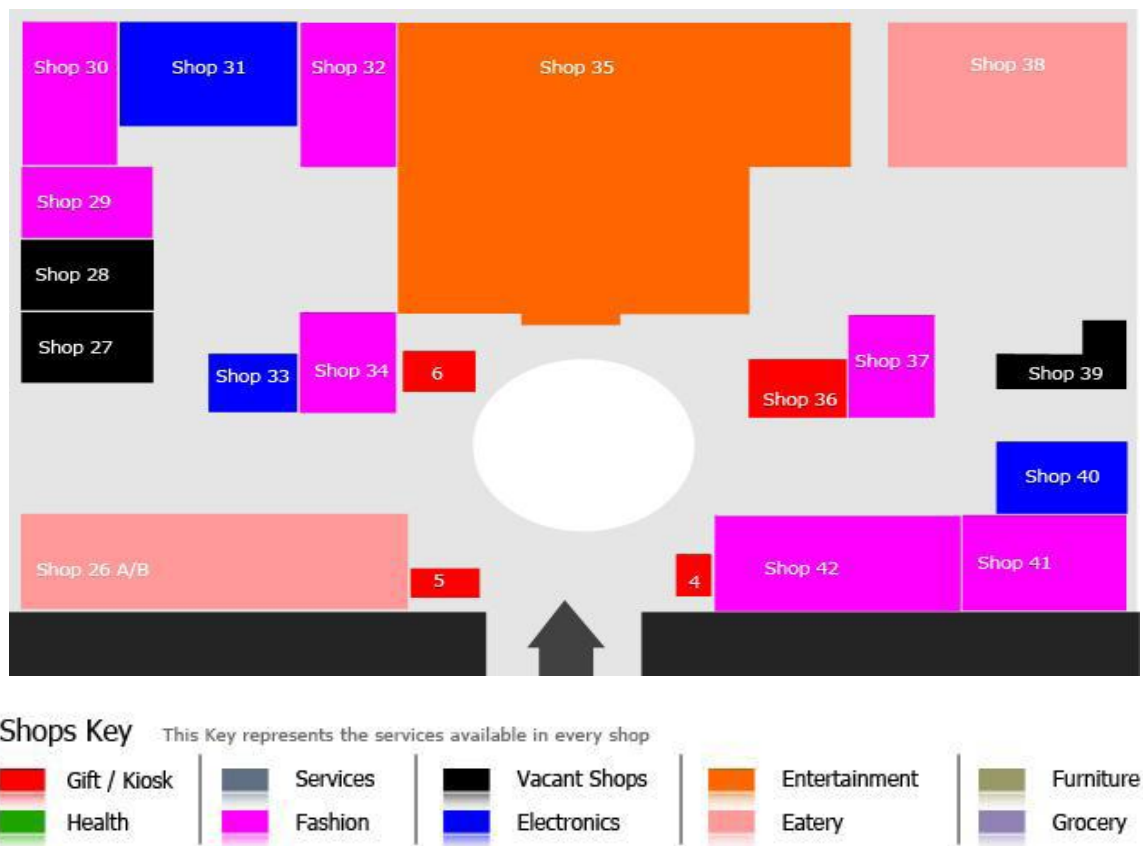
Ceddi Plaza Abuja, located at no 264 Tafawa Balewa road, CBD Abuja, Nigeria. It was founded in November, 2005. The building designed by B+ITC 78, and managed by Tayo Amusan, the plaza belongs to Ceddi Corporation, and it's a Retail type of mall.

##### **4.2.1 Background information**

Ceddi plaza comprise of 10,000sqm of retail shops and office spaces. It was built in 2003 and commissioned in November 2005. Managed by Broll property services Nigeria. The plaza has total of five floors comprising ground floor and basements (Figure 4.1- 4.2). Apart from the 55 specialist shops it accommodate, secondary facilities like a cinema, library and restaurants and also a provision of internet café among others.



**Figure 4.1:** First Floor Ceddi Plaza, Abuja  
Source: Archdaily (2020)



**Figure 4.2:** Ceddi Plaza, Abuja. Floor plan  
Source: Archdaily (2020)

Ceddi Plaza, has a general impression of stability, best management techniques and an organised amenity indicating ownership. With respect to field survey. The six CPTED concepts are explained as follows:

*i. Territoriality*

Ceddi Plaza, a shopping environment characterised by proper care and beautifully arranged amenity that showcase an impression of ownership (Plate IV). Spatial outlines are well positioned including parking, pedestrian routes; walkways.



**Plate IV:** Public parking, Ceddi Plaza, Abuja  
Source: Author`s fieldwork(2020)



### *ii. Surveillance*

External corners in Ceddi plaza reduces sightlines and is made up non-transparent materials like concrete blocks, in place of glazed materials (Plate V). Some shops use video surveillance; CCTV cameras are being used inside each of the shops; security guards in public areas. Interiors of shops are well illuminated by the aid of fluorescent security lighting particularly in general areas.



**Plate V:** Windows, Ceddi Plaza, Abuja  
Source: Author's fieldwork(2020)

### *iii. Image management*

The Plaza is very clean, no litter, graffiti, vandalism and damage can be seen and the mall is free from stigma or poor social identity. The ground and building are well maintained (Plate VI)



**Plate VI:** Clean surrounding, Ceddi Plaza, Abuja  
Source: Author's fieldwork

*iv. Access control*

Ceddi plaza has very organised vehicles and pedestrians access. Informal pedestrian paths are provided all around the surroundings and from public transport parking (Plate VII). Also made available is vehicular access from busy roads which provides passive surveillance.



**Plate VII:** Access control, Ceddi Plaza, Abuja  
Source: Author's fieldwork(2020)

*v. Target hardening*

In Ceddi plaza many of the ground floor shops have provided defensive measures to address burglary. Chained and padlocked security bars are mostly used and the provision of shutters on windows and doors with onsite security guards in many of the shops.

*vi. Activity support*

Ceddi plaza is a business environment consisting of restaurants; cinema also internet café among others are accommodated (Plate VIII- IX)



**Plate VIII:** Restaurant, Ceddi Plaza, Abuja  
Source: Author`s fieldwork(2020)



**Plate IX:** Cinema, Ceddi Plaza, Abuja  
Source: Author`s fieldwork(2020)

### **4.3 Case Study Two: Silverbird Galleria, Abuja**

Silverbird Galleria located at Plot 1161, Memorial Drive, business district. Abuja, opened in May, 2004. The Mall is owned by Silverbird cooperation (Plate X)



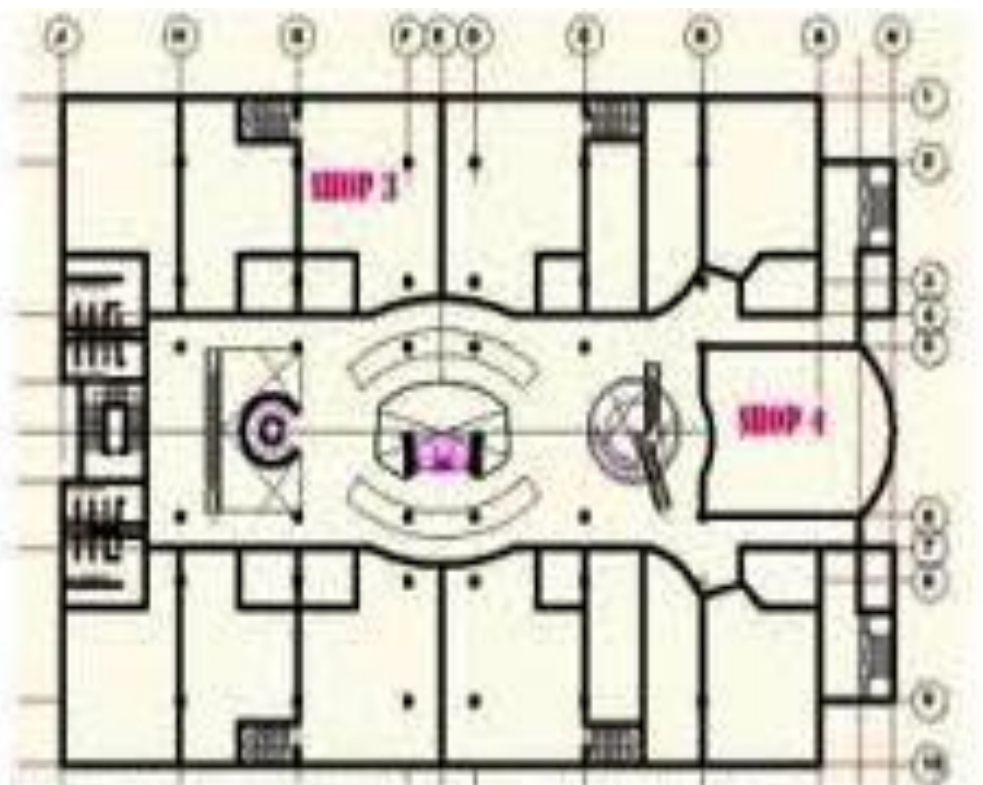
**Plate X:** Silverbird Galleria, Abuja  
Source: Author`s fieldwork(2020)

#### **4.3.1 Background information of silverbird galleria**

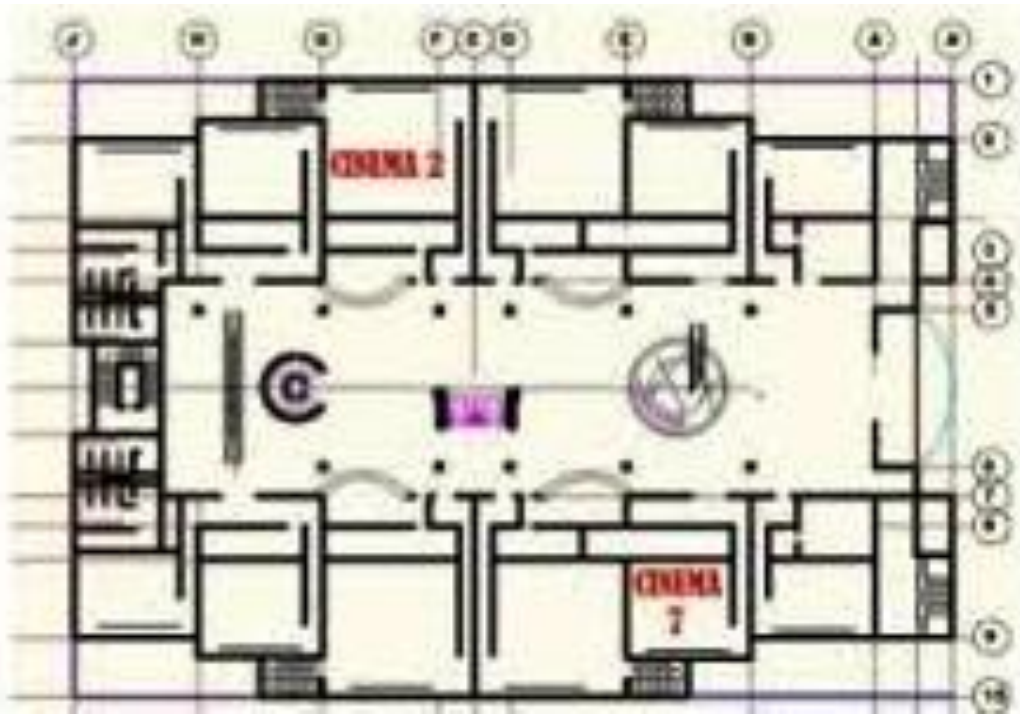
Silverbird galleria, a commercial centre constructed in the city of Abuja and located in an area called the CBD, serving both middle class and high class encompassing the business district (Figure 4.3- 4.5). Its neighbouring buildings are Umaru Musa yar`adua centre and NNPC building.



**Figure 4.3:** Ground Floor Silverbird Galleria, Abuja  
Source: Archdaily (2020)



**Figure 4.4:** First Floor Silverbird Galleria, Abuja  
Source: Archdaily (2020)



**Figure 4.5:** Second Floor Silverbird Galleria, Abuja  
Source: Archdaily (2020)

Silverbird Galleria, regarding field survey, the six CPTED concepts are explained as follows:

*i. Territoriality*

Silverbird Galleria is an environment comprising pedestrian paths and general parking (Plate XI - XII). Spaces are well defined with parking bays and pedestrian routes. Front of shops are designed to high standard. Also present are street furniture for seating



**Plate XI:** Parking Lots, Silverbird Galleria, Abuja  
Source: Author's fieldwork (2020)



**Plate XII:** Pedestrian walkways, Silverbird Galleria, Abuja  
Source: Author's fieldwork (2020)



*ii. Surveillance*

Silverbird Galleria is characterised by an excellent layout of leisure areas, surveillance, out of bound to unapproved users, access control, well placed windows and doors and a clear lines of sight (Plate XIII). Inside some shops, video surveillance is being used; CCTV cameras are being used inside each of the shops; security guards in public areas. Interiors of shops are well illuminated by the aid of fluorescent lighting particularly in general areas.



**Plate XIII:** Windows, Silverbird Galleria, Abuja  
Source: Author's fieldwork (2020)

*iii. Image management*

Silverbird Galleria has an environment free from graffiti and also has no reproach or a poor social prominence; both the ground and building are well kept (Plate XIV).



**Plate XIV:** Clean areas, Silverbird Galleria, Abuja  
Source: Author's fieldwork (2020)

*iv. Access control*

Silverbird Galleria has well defined access and border demarcation, fences, shrubs, nice transitional zones, signs, burglary alarm, securities (Plate XV). Pedestrians and also vehicles access are clearly designed. Informal pedestrian pathways between the buildings round the surroundings and from public transport points.



**Plate XV:** Access control, Silverbird Galleria, Abuja  
Source: Author's fieldwork (2020)

*v. Target hardening*

Silverbird Galleria ground shops have put in place defensive means to stop burglars. These tactics are padlocked, chained security bars, windows and doors have shutters on them with many other shops having at the spot securities.

*vi. Activity support*

Silverbird Galleria is a business environment comprising of shops and different businesses, cinema, food court as well as cyber café among others is housed. The Mall has spatial basics as a thriving public environment. (Plate XVI - XVII).



**Plate XVI:** Cinema, Silverbird Galleria, Abuja  
Source: Author's field work (2020)



**Plate XVII:** Restaurant, Silverbird Galleria, Abuja  
Source: Author`s field work (2020)

#### **4.4 Case Study Three: Jabi Lake Mall**

Jabi Lake Mall is located at plot 1265A, Bala Sokoto Way, Jabi District Abuja, Nigeria.

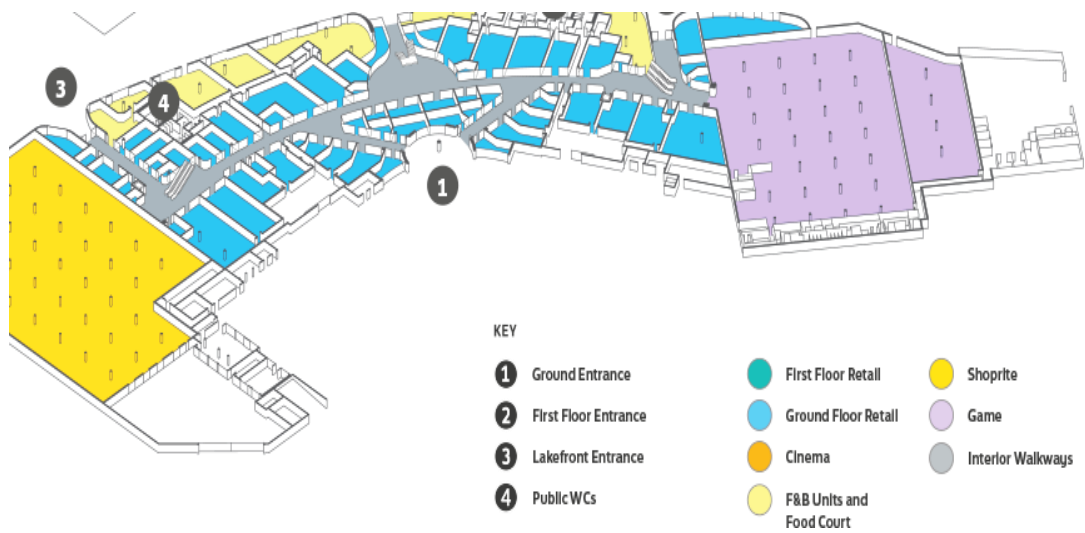
Opening date: 2015. Type- Retail.

##### **4.4.1 Background information**

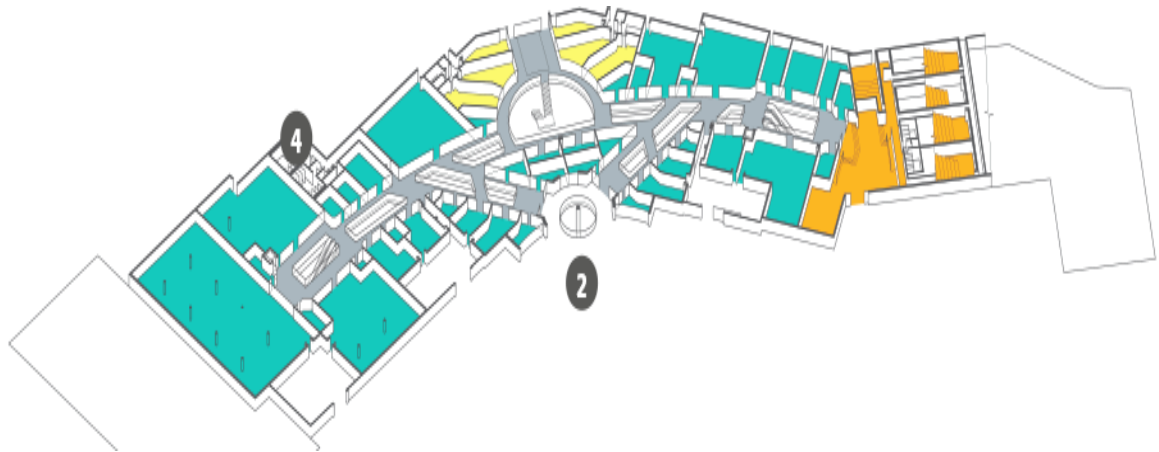
Jabi Lake Mall is a shopping facility built in Abuja. It is built on 5ha of land and located on eastern shores of the Lake (Plate XVIII). Jabi Lake Mall is a redefinition of the shopping and retail experience in Nigeria, which is established to serve the middle and high class of the visitors comprising the business space (Figure 4.6 – 4.7)



**Plate XVIII:** Jabir Lake Mall  
 Source: Author`s fieldwork (2020)



**Figure 4.6:** Ground Floor Jabir Lake Mall, Abuja  
 Source: Archdaily (2020)



**Figure 4.7:** First Floor Plan, Jabir Lake Mall, Abuja  
Source: Archdaily (2020)

Jabir Lake Mall. With respect to the field observation. The six CPTED concepts are discussed as follows:

*i. Territoriality*

Jabir Lake Mall showcase a general impression of stability, excellent management and a beautifully designed amenity displaying ownership. Spaces are well defined with parking bays and pedestrian routes (Plate XIX). Front of shops are designed to high standard. Also present are street furniture for seating



**Plate XIX:** Public parking lots, Jabir Lake Mall, Abuja  
Source: Author`s fieldwork (2020)

*ii. Surveillance*

Jabir Lake Mall is characterised by beautiful site of gathering areas, an excellent surveillance, controlled access, out of bound to unwanted shoppers, well positioned windows and doors and a clear sightlines (Plate XX). CCTV cameras are evidence in public areas. Interiors of shops are lighted by the use of fluorescent security lighting.



**Plate XX:** Windows, Jabi Lake Mall, Abuja  
Source: Author's fieldwork (2020)

*iii. Image management*

Jabi Lake Mall is very clean, no litter, graffiti, vandalism and damage can be seen and the mall is free from stigma or poor social identity. The ground and building are well maintained (Plate XXI).



**Plate XXI:** Clean paths, Jabi Lake Mall, Abuja  
Source: Author's fieldwork (2020)



*iv. Access control*

There is beautiful access and clear border definition in Jabi Lake Mall, fences, shrubs, marked transitional zones, signs, burglary alarm, security officers are also made available (Plate XXII). Access for vehicles and also pedestrians are provided.



**Plate XXII:** Access control, Jabi Lake Mall, Abuja  
Source: Author's fieldwork (2020)

*v. Target hardening*

Jabi Lake Mall ground shops have put in place defensive means to stop burglars. These tactics are padlocked, chained security bars, windows and doors have shutters on them with many other shops having at the spot securities.

*vi. Activity support*

Jabi Lake Mall is a commercial centre with shops and different businesses, restaurants, cinema as well as internet café among others are housed (Plate XXIII - XXIV). The Mall has spatial basics as a thriving public environment.



**Plate XXIII:** Restaurant, Jabi Lake Mall, Abuja  
Source: Author's fieldwork (2020)



**Plate XXIV:** Cinema and Restaurant, Jabi Lake Mall, Abuja  
Source: Author's fieldwork (2020)

#### 4.5 Case Study four: Mall of America Minnesota, United States

Mall of America located in Minnesota, United States; was commissioned on 11<sup>th</sup> August, 1992 by Melvin Simon & Associates. Mall of America comprises of 530+services and stores, 4Nos. Anchor store tenants having retail floor area of 2.6 million sq ft.20,000 plus parking lots, including 2, 7-story overflow surface lots plus ramps (Plate XXV)

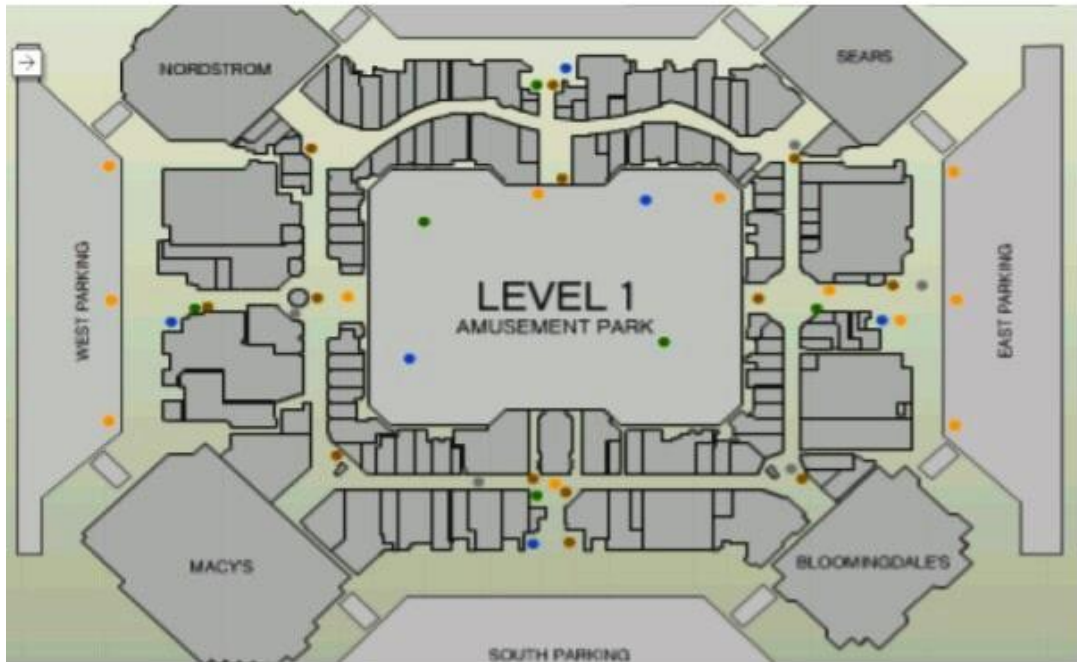


**Plate XXV:** Mall of America, America  
Source: Archdaily (2020)

##### 4.5.1 Background information

Mall of America, a super-regional centre built inside Twin Cities village called Bloomington, Minnesota. Which serve as the second biggest enclosed mall in the United States, as regards retail space as well as total floor area. Establish 1992. In 2006, 40 million people visited the mall. Fully owned and managed by Triple Five Group. The building is symmetrical, having a rectangular plan. 520 store slay beside three stages of routes by the rectangle axis, having a fourth floor on other axis. An extension lying north of the mall accommodates up to 850 stores. Together with four "anchor" stores

positioned at the angles (Figure 4.8 – 4.10). There are 4 distinct zones, each having a different decorative style in the mall.



**Figure 4.8:** Mall of America, Ground floor level  
Source: Archdaily (2020)



**Figure 4.9:** Mall of America, First floor level  
Source: Archdaily (2020)



**Figure 4.10:** Mall of America, Second floor level.  
Source: Archdaily (2020)

Mall of America assessed with respect to field observation. Concepts are briefly discussed below:

*i. Territoriality*

Mall of America showcases a general impression of stability, excellent management and a well-designed facility that express a sense of ownership. Spaces are well defined with parking bays and pedestrian routes (Plate XXVI).



**Plate XXVI:** Public parking, Mall of America  
Source: Author`s fieldwork (2020)

*ii. Surveillance*

Mall of America is distinguished by excellent surveillance, access control, not visible to users not desired, well positioned windows and doors and a clear lines of sight (Plate XXVII). Inside some shops, video surveillance is evident; CCTV cameras are being used inside each of the shops; security guards in public areas. Interiors of shops are well illuminated by the aid of fluorescent security lighting particularly in general areas.



**Plate XXVII:** Windows, Mall of America  
Source: Author's fieldwork (2020)

*iii. Image management*

Mall of America as an environment free from trash and also has no disgrace or a poor social prominence; both the ground and building are well kept (Plate XXVIII)



**Plate XXVIII:** Clean Environment, Mall of America  
Source: Author`s fieldwork (2020)

*iv. Access control*

Mall of America has a very defined access and clear borders, fences, shrubs, defined transitional zones, burglary alarm, doors locked, security officers. (Plate XXIX). Also access for pedestrians and access for vehicles are provided.





**Plate XXIX:** Access control, Mall of America  
Source: Author`s fieldwork (2020)

*v. Target hardening*

Many of the ground shops in Mall of America have put in place defensive means to impede burglars. These tactics are padlocked, chained security bars and windows and doors have shutters on them with many other shops having at the spot securities.

*vi. Activity support*

Mall of America is a business environment comprising of speciality shops and businesses, cinema, food court and also café among other functions(Plate XXX - XXXI)



**Plate XXX:** Cinema, Mall of America  
Source: Author's fieldwork (2020)



**Plate XXX1:** Restaurant, Mall of America  
Source: Author's fieldwork (2020)

#### 4.6 Case Study Five: Bullring Shopping Mall, Birmingham

Bullring Shopping Mall is located at Birmingham B5 4BU, United Kingdom. Opened September 4, 2003. Architects; Benoy, owned by Hammerson. It's a retail type of mall.

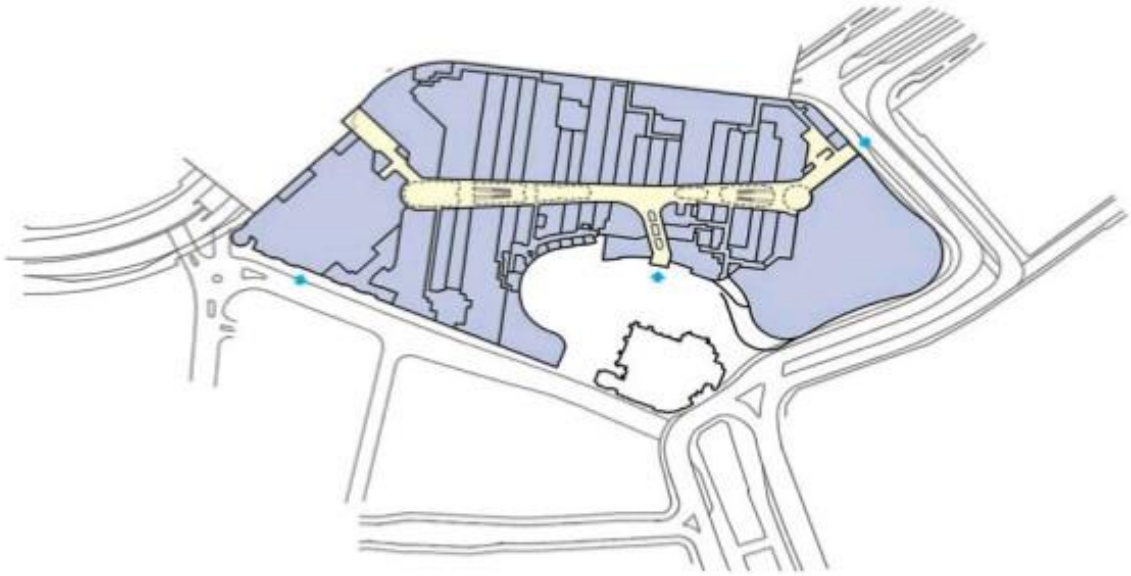
(Plate XXXII)



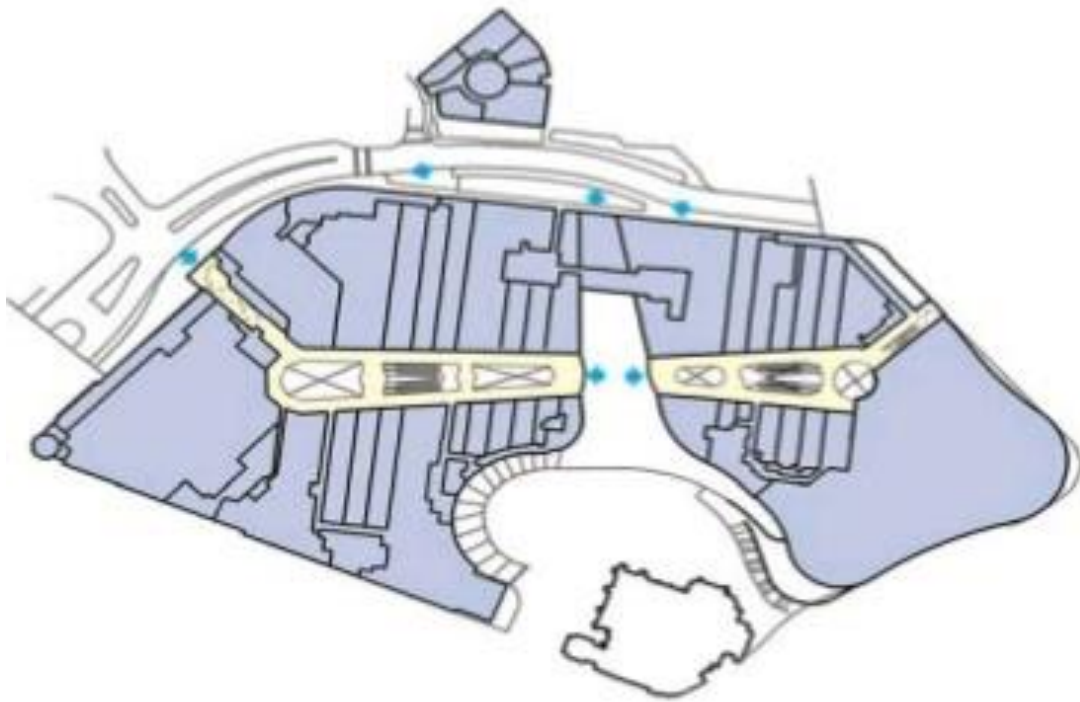
**Plate XXXII:** Bullring Mall, Birmingham  
Source: Archdaily (2020)

##### 4.6.1 Bullring background information

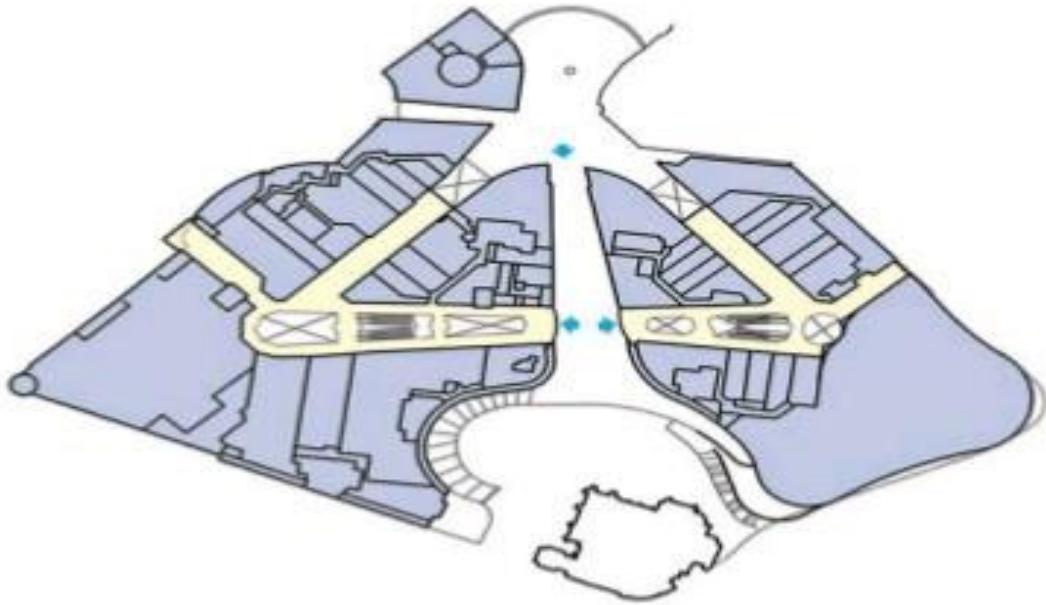
The second city of England, Birmingham, first defined landmark shopping setting with the first Bull Ring (1964), that commence the era of one roof shopping plaza in UK. In 40 years, the city of thousand trades as referred to by the city“ revamp the site in order to create a prominent shopping centre by finishing the latest Bullring (2003). Bullring takes care of a lot of the mistakes of the past thereby planning strongly on the future of covered shopping setting, serving as one among the last covered city centre shopping community in UK. Bullring is crowded centre of town mall than others of it like in Reading and Southampton (Figure 4.11- 4.13). This centre covers 10ha (25 acres) and supplies 111 000m<sup>2</sup> (1.2 million ft<sup>2</sup>) of accommodating 2 department stores 146 shops.



**Figure 4.11:** Ground floor plan, Bullring Mall, Birmingham  
Source: Archdaily (2020)



**Figure 4.12:** First floor plan, Bullring Mall, Birmingham  
Source: Archdaily (2020)



**Figure 4.13:** First floor plan, Bullring Mall, Birmingham  
Source: Archdaily (2020)

*i. Territoriality*

Bullring Mall is characterised by proper care and beautifully arranged amenity that showcase an impression of ownership (Plate XXXIII). Spatial outlines are well positioned including parking, pedestrian routes; walkways.



**Plate XXXIII:** Access for pedestrian and Packing, Bullring, Birmingham  
Source: Author`s fieldwork (2020)

ii. Surveillance

Bullring Mall has excellent surveillance, out of view of undesired users, well placed windows and doors and a clear lines of sight (Plate XXXIV). CCTV cameras are being used inside each of the shops; security guards in common areas.



**Plate XXXIV:** Windows, Bullring, Birmingham  
Source: Author`s fieldwork (2020)

### iii. Image/management

Bullring Mall has an environment free from graffiti and also has no reproach or a poor social prominence; both the ground and building are well kept (Plate XXXV)



**Plate XXXV:** Clean Mall Surrounding, Bullring, Birmingham  
Source: Author's fieldwork (2020)

### iv. Access control

Bullring Mall have an excellent access and defined borders, fences, signs, shrubs, defined transitional zones, burglary alarm, doors locked, security officers. Pedestrians access as well as access for vehicles (Plate XXXVI).



**Plate XXXVI:** Access control, Bullring, Birmingham  
Source: Researcher`s fieldwork (2020)

v. Target hardening

Many of the ground shops in Bullring Mall have put in place defensive means to impede burglars. These tactics are padlocked, chained security bars and windows and doors have shutters on with many other shops having at the spot securities.

vi. Activity support

Bullring Mall is a business environment consisting of restaurants; cinema also internet café among others are accommodated (Plate XXXVII -XXXVIII)





**Plate XXXVII:** Restaurant and Cinema, Bullring, Birmingham  
Source: Author`s fieldwork (2020)



**Plate XXXVIII:** Restaurant, Bullring, Birmingham  
Source: Author`s fieldwork (2020)

Adding to the observations above, the framework yes or no was used to audit the presence or non presence of the features of CPTED in the areas. With respect to the six CPTED concepts, the researcher composed 24 questions to be used for the audit to record the availability or unavailability of these features in the environment. Even though it is not easy to assess territoriality and the motivational attributes of space, legibility, way-finding, signs and zones definition, they are still important elements to this concept.

Each of the elements were recorded yes or no, in which positive answers represents 1 while negative answer represents 0 (Table 4.1). All the three case studies get 66 from a possible outcome of 87 meaning 75.8% CPTED score

**Table 4.I:** CPTED audit scores

<b>Theme</b>	<b>Ceddi Plaza Score</b>	<b>Silverbird Galleria Score</b>	<b>Jabi Lake Mall Score</b>
Surveillance	3 (out of 5)	4 (out of 5)	3(out of 5)
Territoriality	6 (out of 6)	4 (out of 6)	4(out of 6)
Image management	4 (out of 6)	5 (out of 6)	5 (out of 6)
Access control	5 (out of 6)	4 (out of 6)	4 (out of 4)
Activity support	5(out of 6)	5(out of 6)	5 (out of 3)
Total CPTED Audit Score	23/29(79%)	22/29(75%)	21/29(73%)
Total Percentage Score	66/87 (75.8%)		

Source: Author`s fieldwork (2020)

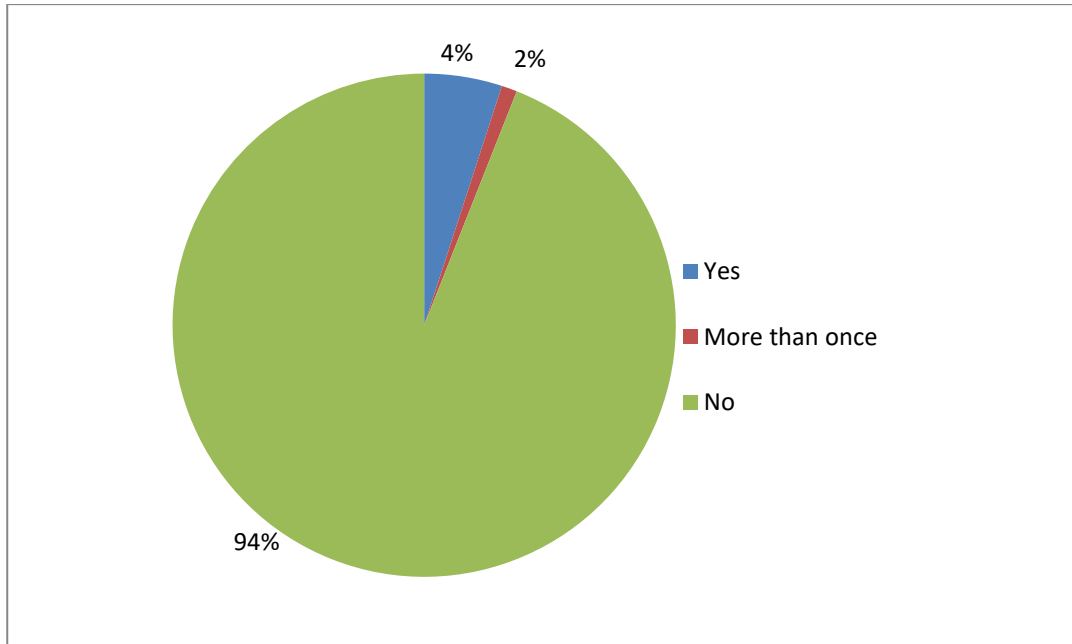
Table 4.I shows that, overall, as regards the availability of several CPTED features, Malls in Abuja did score high. Base on the CPTED audit, the environment promotes CPTED concepts intensively. Scoring high when it comes to CPTED concepts of

activity support, image management and evidence of territoriality were identified at these malls. Access control, target hardening and chances of surveillance were also present within the three Malls considered for the survey

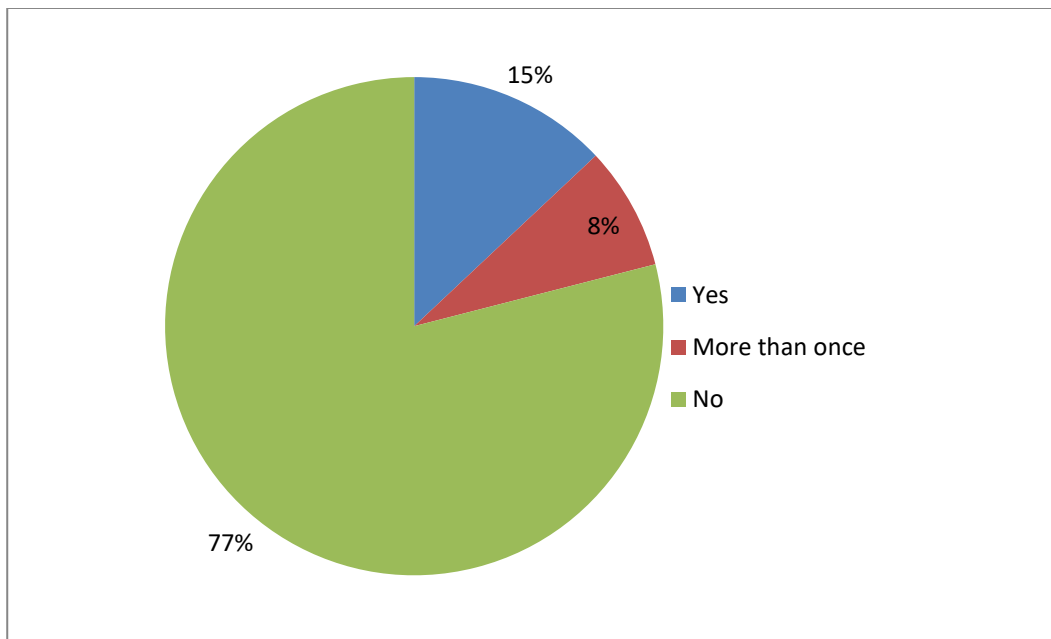
### **The Visitors Perceived Safety**

94% of respondents who answered the questionnaire declared feeling safe while in the shopping malls. A larger portion of visitors are pleased with the provision of food court, cinema, parking lots, stores and library, but not that pleased with places like corridors and also convenience. Even though they are satisfied with their personal safety, they become concerned about their friends and family`s safety around the mall (25% proclaim being worried). The ones that have the feeling of unsafe become more disturbed in the evening.

4% of those who responded to the questionnaires assured ever been a crime victim, in which 2% have been victimised many times (Figure,4.I4); Usually, during evening time; around public or private spaces, involving places like restaurants and stores; and commonly victims of vehement disputes, pick pocketing, theft and others (Figure 4.16). However, nearly greater than a fifth of those respondents since experienced crime taking place within the mall (Figure4.15) based on the responses; pick pocketing is the popular form of witnessed crime, accompanied by fights, thefts, and other forms of unrest and visible destructions.



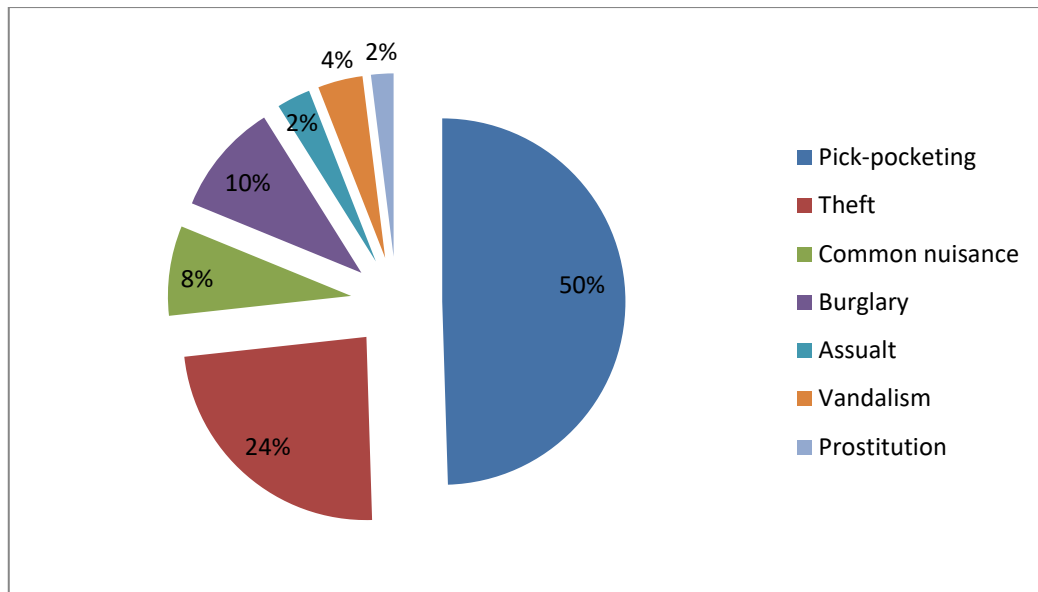
**Figure 4.14: Victim of crime**  
Source: Author's fieldwork (2020)



**Figure 4.15: Witness crime**  
Source: Author's fieldwork (2020)

Types of crime witnessed in the area by the respondents were also asked. 50% (n=125) perceived pick-pocketing as a big issue. The ones with less concern were theft (24%, n=60), burglary (10%, n=25), common nuisance (8%, n=20). Finally, a mega portion of

respondents perceived assault (2%, n=7), prostitution (4%, n=13) and vandalism (2%, n=7) takes place in these places. (Figure 4.16)



**Figure 4.16:** Type of crime witnessed  
Source: Author`s fieldwork (2020)

## **CHAPTER FIVE**

### **5.0 CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Conclusion**

This research has analysed the views of 250 persons, residence of Abuja with regards to CPTED concept. The results show that CPTED principles are found in both the designs well as the built state of these facilities. Both field survey and the perceived safety assessment recorded high levels of CPTED elements present at the site. Though exploratory, the findings signify that CPTED presence in the environment corresponds in both field survey and by individuals in the personal safety assessment. Interestingly, the existence of CPTED matches the level of perceived safety. Additional research is required to authenticate these results by using other qualitative methods such as deep interviews and discussion groups.

#### **5.2 Recommendations**

Recommendations are derived from the views of great actors who participated in the survey and key ideas gotten from best practices. All the sources gave homogeneous direction on the best ways to continue. Professionals will be able to build shopping malls that are safer now by integrating elements of CPTED into the planning and design process. In order to achieve this, the following are the recommendations made:

- i. CPTED principles should be included into present planning and development programmes. CPTED standards and requirements needs to be written down into regulations and be considered in design process from inception. This would bring about reasonable change in the process
- ii. People should be educated on CPTED and they should all be aware of the weaknesses and strengths of CPTED and understand its importance as a comprehensive crime prevention measure.

- iii. Government should establish Working Group that will be charged with the responsibility of coordinating the activities of CPTED. This Group should be entrusted with the task of establishing Terms of Reference, monitoring outcomes, tasks delegation and also giving recommendations regarding resources needed to carryout CPTED.
- iv. Establish processes that will help to offer the public input on the use of CPTED. Different CPTED planning aspects and Neighbourhood Planning Initiative should align, as this would assist in ensuring the input of the public.

### **5.3 Contributions to knowledge**

This research uniquely contributes to knowledge as it offers operational definitions for the concepts of Crime Prevention through Environmental Design (CPTED) that can be implemented in shopping malls which includes: surveillance, territoriality, target hardening, access control and image management. The findings revealed that 94% of respondents feel safe while in the shopping malls. The ones that have the feeling of unsafe become more disturbed in the evening. Only 4% of the respondents assured ever been a crime victim, in which 2% have been victimised many times; usually, during evening time; around public or private spaces, involving places like restaurants and stores; and commonly victims of vehement disputes, pick pocketing, theft and others. However, based on the responses; pick pocketing is the popular form of witnessed crime, accompanied by fights, thefts, and other forms of unrest and visible destructions. These findings indicate that enhanced security and safety should to be approached, by a proper implementation of the CPTED concepts: surveillance, territoriality, target hardening, access control and image management.

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## APPENDIX

### OBSERVATION SCHEDULE QUESTION LIST

(CPTED Audit for the Six Principles of CPTED)

#### Audited Elements of Territoriality

1. Are the pedestrian routes clear and legible?	Yes ( )	NO ( )
2. Are entry points into the area visible and well defined?	Yes ( )	NO ( )
3. Are there signs to locate where you are?	Yes ( )	NO ( )
4. Are there sufficient way-finding maps/signs to key destination?	Yes( )	NO ( )
5. Are there confusing Levels/zones?	Yes( )	NO ( )

#### Audited Elements of Surveillance

1. Generally, can you see clearly what is ahead of you?	Yes ( )	NO ( )
2. Are there areas where you can't be seen or heard?	Yes ( )	NO ( )
3. Are there entrapment spots (e.g. stairwells / recesses)?	Yes ( )	NO( )
4. Are there places where offenders could easily hide and conceal themselves?	Yes( )	NO ( )
5. Are the footpaths well-lit?	Yes( )	NO ( )
6. Can you identify a person's face at 15metres?	Yes( )	NO ( )

#### Audited elements of Image management

1. Does the aesthetics of the site attract people?	Yes ( )	NO ( )
2. Is the site well-maintained and cared for?	Yes ( )	NO ( )
3. Are there empty buildings or spaces at the site?	Yes ( )	NO ( )
4. Is there a presence of drunkenness or nuisance?	Yes ( )	NO ( )
5. Is there evidence of rubbish / graffiti / vandalism?	Yes ( )	NO ( )
6. Is the surrounding area well-maintained and cared for?	Yes ( )	NO ( )

**Audited elements of Access control (and target hardening)**

1. Are there multiple entrances and exits to and from the site?	Yes ( )	NO ( )
2. Are there pathways that lead to unpredictable places?	Yes ( )	NO( )
3. Is there a security presence at the site?	Yes( )	NO ( )
4. Are target hardening measures evident (e.g. locks / security grills)	Yes( )	NO ( )

**Audited elements of Activity support**

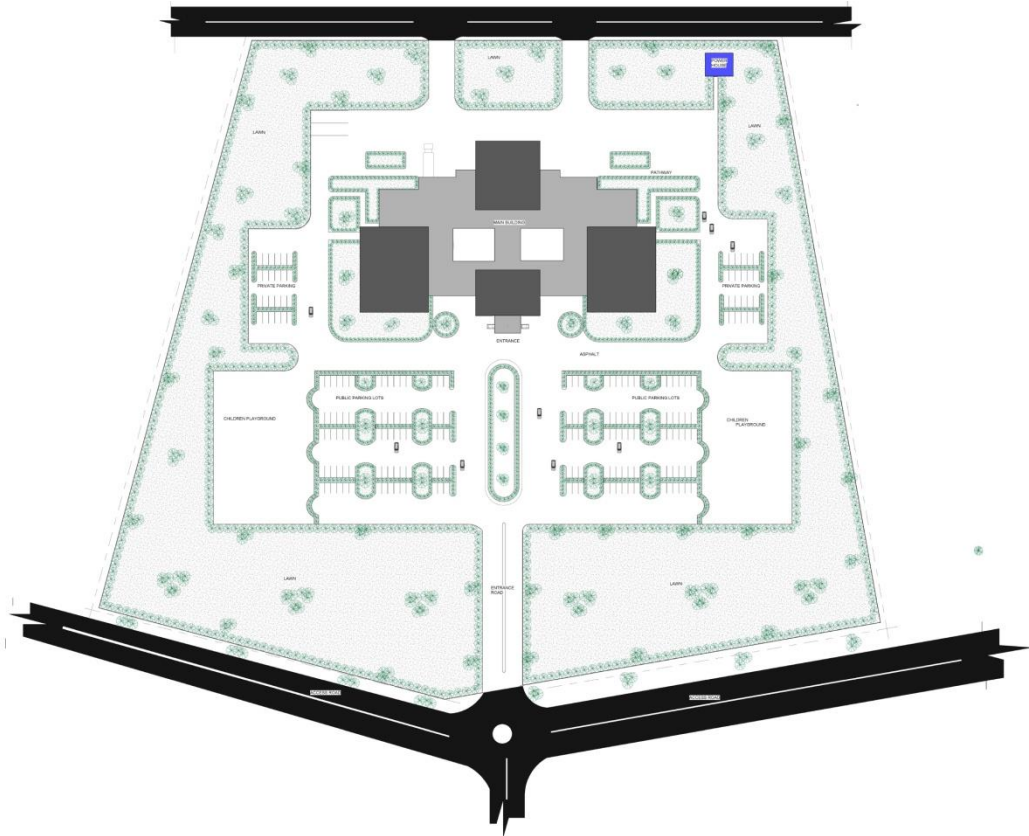
1. Is the site vibrant and well-used?	Yes ( )	NO ( )
2. Is there a diverse range of land-uses at the site?	Yes ( )	NO( )
3. Are there restaurants / cafes / cinemas / play areas to attract people?	Yes ( )	NO ( )

## QUESTIONNAIRE

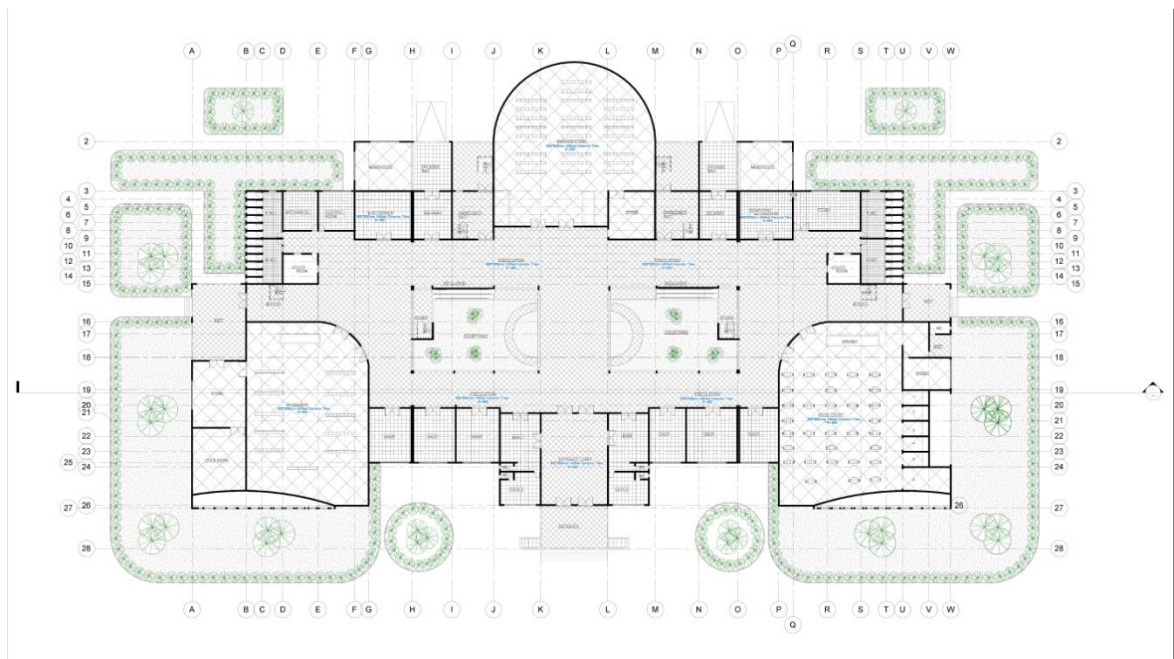
(The personal safety structured questionnaire questions)

### Personal safety survey – Perceptions of CPTED by Users

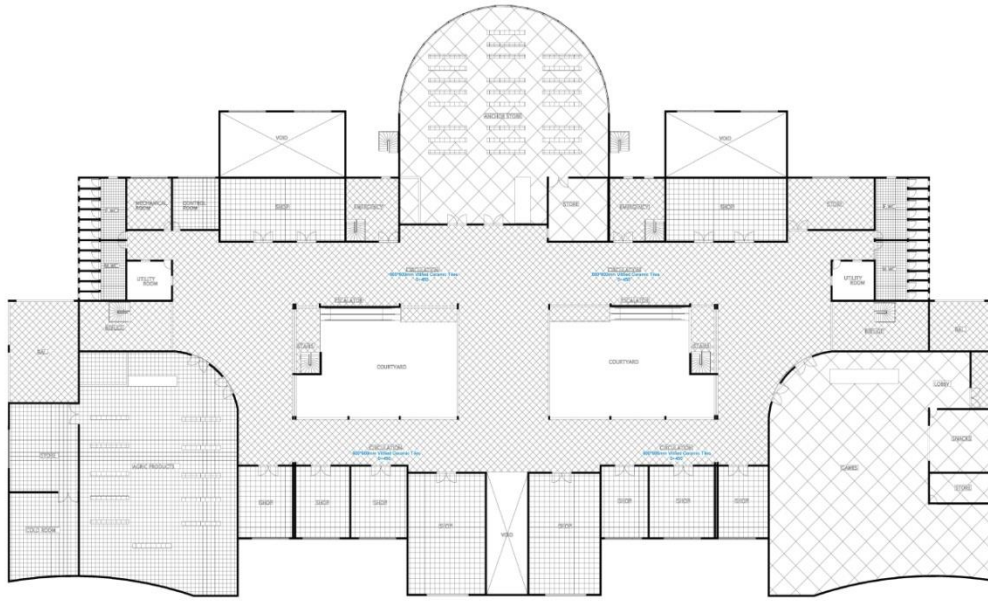
Questions	Yes	No	Don`t know
If you were being threatened, do you think other people would see/notice you?	( )	( )	( )
Do you think people would assist you if they noticed a crime-taking place?	( )	( )	( )
Are properties protected with burglar bars, alarms and security features?	( )	( )	( )
Have you noticed any security cameras in the mall	( )	( )	( )
Is the mall free from places where criminals could hide?	( )	( )	( )
Have you seen any security guards in the mall today?	( )	( )	( )
Is the area clean and free from rubbish and graffiti?	( )	( )	( )
Is the area free of nuisance activities (e.g. people urinating, rough sleeping, street kids)?	( )	( )	( )



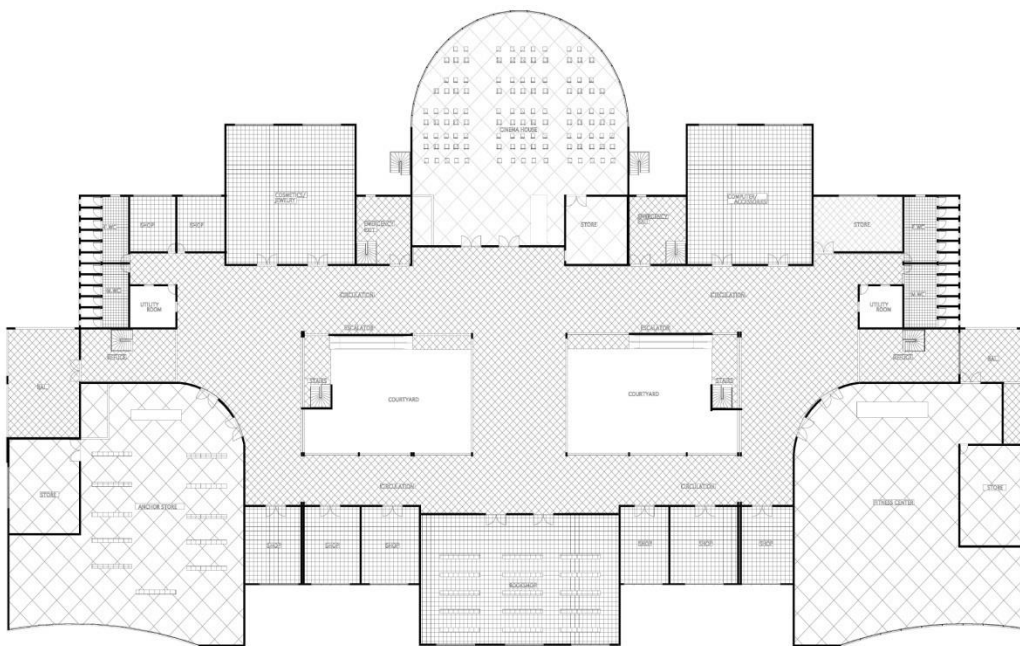
Appendices 1.1 Site Plan



Appendices 1.2 Ground Floor Plan



Appendices 1.3 First Floor Plan



Appendices 1.4 Second Floor Plan





Appendices 1.5 Approach Elevations



Appendices 1.6 Rear Elevations



Appendices 1.7 Right Elevations



Appendices 1.8 Left Elevations



Appendices 1.9 3D Perspectives



Appendices 1.10 Approach Vie