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Research Article

The Effectiveness of Passive Security Design Strategies in Event Centre Architecture in Nigeria

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Abstract

The growing frequency of security events in public assembly buildings has created a demand for design-based security techniques that enhance safety without sacrificing architectural quality or user experience. Passive security design solutions, which rely on environmental design rather than mechanical surveillance, offer a long-term and non-intrusive method of crime prevention. This study investigates the effectiveness of passive security design solutions in event centre architecture in Nigeria, using Abuja as a case study. A structured questionnaire was administered to 112 built-environment professionals, including architects, engineers, event centre managers, and security personnel. Cronbach's alpha values varied from 0.679 to 0.818, demonstrating adequate internal consistency. The data were analysed using descriptive statistics, the Relative Importance Index (RII), mean score ranking, and the Kruskal-Wallis H tests. The findings indicate that landscape and building design are the most effective passive security strategies (RII = 0.766), followed by access control and physical security measures. Major roadblocks include high initial costs, regulatory constraints, and a lack of professional capability. Resistance to change, skilled labour availability, and material access all demonstrated statistically significant differences between professional and age groups. According to the study, including passive security early in the planning phase can significantly increase safety at Nigerian event venues. Aside from identifying effective solutions, the article provides a feasible multi-layered design framework that incorporates passive security concepts into site layout, spatial zoning, illumination, and supporting technology. Architects and policymakers can use a design-based framework and spatial strategy to build safer event centre environments.

Keywords

Architectural Design, CPTED, Event Centres, Public Safety, Passive Security, Nigeria

1. Introduction

Public event venues play a major role in Nigeria's social, cultural, and economic life, hosting large-scale events such as conferences, weddings, exhibits and concerts. However, these facilities are increasingly subject to security threats such as theft, crowd-related incidents, vandalism, and terrorism [5-7]. Traditional security responses in Nigeria have primarily relied on reactive and technological measures, such as CCTV cameras, armed personnel, and perimeter fences, which are frequently implemented without architectural integration. While these treatments may discourage some dangers, their effectiveness is frequently limited by operational issues such as maintenance costs, intermittent power supply, and reliance on

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human attention. As a result, security planning must go beyond operational security to include architectural design choices that influence behaviour, movement, and surveillance opportunities.

Passive security design solutions offer an alternative by integrating security into the spatial, visual, and material logic of structures [14]. Natural monitoring, territorial reinforcement, access restriction, and defended area are examples of passive security principles that promote safety while retaining openness and user comfort. These tactics improve safer surroundings by minimising options for hiding, increasing control over entry and circulation, and allowing users to conduct informal supervision. Despite their global appeal, empirical research into the efficacy and implementation challenges of passive security techniques at Nigerian event venues is limited. This knowledge gap is especially significant because event centers are high-density venues that might face unexpected crowd surges, high-value property exposure, and security risks during peak periods. This study addresses that gap by examining professional perceptions of passive security effectiveness, identifying implementation issues, and translating findings into a design-oriented approach appropriate to Nigerian urban settings.

The study aims to assess professionals' perceptions of passive security adequacy in event centers, evaluate the effectiveness of passive security design strategies using RII ranking, identify implementation barriers, and propose design-focused measures to improve safety in event centers.

2. Literature Review

Passive security is defined as design-based solutions that reduce vulnerability and discourage criminal conduct without requiring human participation or mechanical devices [13]. Passive security, as opposed to active security, relies on form, layout, and spatial relationships. CPTED serves as the theoretical basis for passive security design. The system is built on four fundamental principles: natural surveillance, access restriction, territorial reinforcement, and maintenance [9]. According to research, spaces designed using CPTED principles had lower crime rates and higher user perceptions of safety [8, 2]. By increasing visibility and limiting unclear geographical boundaries, CPTED creates conditions in which legitimate users feel empowered to observe and respond to odd actions. This is especially important for event centres, where user density varies, and geographical disorientation can increase risk exposure [10].

Event centers pose unique challenges due to fluctuating crowd density, multiple entry points, and symbolic value. According to studies conducted in public facilities, geography, building orientation, and visibility all have a significant impact on safety outcomes. However, in many developing countries, passive security is usually underestimated or regarded as expensive [11, 3]. This view contributes to late-stage "add-on" security techniques, in which designers incorporate obstacles and surveillance after architectural decisions have been made, typically raising expense and lowering aesthetic quality.

This research is based on CPTED and the Defensible Space Theory [13]. The theory assumes that spatial visibility facilitates informal surveillance, clearly defined areas enhance user accountability, regulated access reduces crime opportunities, and architectural form influences behavioural outcomes. These beliefs influence the variables investigated in the study, which include landscape, illumination, building design, access control, and territorial reinforcement. Furthermore, this study views passive security adoption as an organisational and planning issue that necessitates institutional support and implementation frameworks [4].

3. Methodology

A quantitative cross-sectional survey design was employed to investigate professionals' perceptions of passive security strategies. A total of 112 people participated, including architects (43.8%), engineers (31.3%), event center managers (23.2%), and security personnel (1.8%). Data were collected using a validated Likert-scale questionnaire. Cronbach's alpha coefficients ranged from 0.679 to 0.818, indicating moderate to strong internal consistency (Hair et al., 2019). Data analysis methods include (i) descriptive statistics and (ii) the relative importance index (RII). (iii) Average score ranking; (iv) Kruskal-Wallis H test ($\alpha = 0.05$). The Relative Importance Index (RII) was used to prioritise passive security methods based on perceived efficacy, providing a solid foundation for prioritising design interventions in decision-making scenarios. The Kruskal-Wallis H test was chosen due to the ordinal nature of Likert-scale responses and the study's comparison of distinct demographic groups.

4. Results and Discussion

4.1. Demographic Characteristics of Respondents

The demographic profile of respondents provides critical information for evaluating perceptions of passive security design features in Nigerian event settings. The study includes 112 respondents from the built environment and facilities management sectors, representing a wide range of ages, genders, professional backgrounds, and years of experience. A study of respondent ages revealed a preference for younger specialists. The bulk of responders (44.6%) were aged 18 to 25, followed by 20.5% aged 26 to 33 and 18.8% aged 34 to 41. There were very few older respondents, with 8.9% aged 42 to 49 and 7.1% aged 50 and up. This age distribution suggests that the findings are heavily influenced by the perspectives of early- to mid-career professionals, many of whom have greater exposure to contemporary architectural education, emerging design philosophies, and evolving security paradigms, such as passive and preventive design approaches. This

may help to explain the study's significant support for passive security tactics, which reflect a workforce that is becoming more open to design-led problem-solving and evidence-based approaches to public safety.

The demographic characteristics of the respondents have a wide-ranging impact on how the study's findings are perceived. First, the preponderance of younger and early-career professionals indicates a high level of openness to passive security principles, which is consistent with the study's other findings. This may assist in explaining why most people think that landscape design, building shape, and access control are effective security measures. Second, the significant share of architects and engineers highlights the importance of design professionals in determining security outcomes in event center architecture. The low level of participation by security personnel indicates that security concerns are still predominantly considered as design and planning issues rather than operational or enforcement issues.

Third, the gender imbalance reflects structural realities in the Nigerian construction business, emphasising the need for greater inclusivity in future research. additional balanced gender representation could provide additional data on safety perception, risk sensitivity, and user-centred security design. Finally, the experience profile indicates that newer generations of professionals may be driving passive security adoption, meaning that institutionalising these techniques through education, professional training, and regulatory frameworks could result in long-term transformation of design practice.

4.2. Effectiveness of Passive Security Strategies

The Relative Importance Index was developed to investigate and assess the effectiveness of passive security design, as well as to rank each feature according to perceived effectiveness. Table 1 reveals that landscaping and building design received the highest rating (RII = 0.766), demonstrating the importance of spatial layout and visual control in event center security. This is consistent with prior CPTED trials that focused on visibility and defensible limitations [11]. The rating emphasises the effectiveness of spatially integrated solutions that improve visibility, restrict movement, and strengthen environmental legibility, reducing options for incursion or hiding. Lighting and territory reinforcement had lower scores but remained significant, demonstrating their importance in increasing surveillance and user orientation. This implies that, while certain techniques may not be dominant on their own, their combination with high-ranking measures can result in layered security resistance.

Table 1. *Effectiveness of Passive Security Strategies.*

Passive security design	Frequency (percentage)	$\sum w$	RII	Rank
Territorial reinforcement				
No effect	3 (2.7)			
Minimal effect	20 (17.9)			
Moderate effect	33 (29.5)	382	0.682	5
Highly effective	40 (35.7)			
Very Highly effective	16 (14.3)			
Access control				
No effect	16 (14.3)			
Minimal effect	39 (34.8)			
Moderate effect	28 (25)	406	0.725	2
Highly effective	29 (25.9)			
Very Highly effective				
Physical security measures				
No effect	4 (3.6)			
Minimal effect	17 (15.2)			
Moderate effect	33 (29.5)	393	0.702	3
Highly effective	34 (30.4)			
Very Highly effective	24 (21.4)			
Lighting		392	0.70	4

Passive security design	Frequency (percentage)	$\sum w$	RII	Rank
No effect	4 (3.6)			
Minimal effect	18 (16.1)			
Moderate effect	30 (26.8)			
Highly effective	38 (33.9)			
Very Highly effective	22 (19.6)			
Landscaping				
No effect	2 (1.8)			
Minimal effect	6 (5.4)			
Moderate effect	31 (27.7)	429	0.766	1
Highly effective	43 (38.4)			
Very Highly effective	30 (26.8)			
Building design				
No effect	1 (0.8)			
Minimal effect	8 (7.1)			
Moderate effect	36 (32.1)	429	0.766	1
Highly effective	31 (27.7)			
Very Highly effective	36 (32.1)			

4.3. Implementation Challenges

Table 2 displays the implementation issues reported by respondents. According to the findings, substantial initial costs, regulatory constraints, and a lack of awareness were identified as extremely tough. These findings indicate systemic issues in Nigerian building practice, where security is usually addressed late in the design process [1].

Table 2. *Implementation Challenges.*

Passive security design	Frequency (percentage)	Mean value	Decision
High initial cost			
Not challenging	3 (2.7)		
Minimal challenging	13 (11.6)		
Quite challenging	45 (40.2)	3.46	Highly challenging
Highly challenging	31 (27.7)		
Very highly challenging	20 (17.9)		
Lack of skilled labour			
Not challenging	3 (2.7)		
Minimal challenging	20 (17.9)		
Quite challenging	43 (38.4)	3.25	Quite challenging
Highly challenging	38 (33.9)		
Very highly challenging	8 (7.1)		

Passive security design	Frequency (percentage)	Mean value	Decision
Resistance to change from traditional methods			
Not challenging	4 (3.6)	3.38	Quite challenging
Minimal challenging	18 (16.1)		
Quite challenging	37 (33.0)		
Highly challenging	37 (33)		
Very highly challenging	16 (14.3)		
Inadequate knowledge or exposure			
Not challenging	0	3.51	Highly challenging
Minimal challenging	21 (18.8)		
Quite challenging	30 (26.8)		
Highly challenging	44 (39.3)		
Very highly challenging	17 (15.2)		
Limited availability of materials			
Not challenging	4 (3.6)	3.38	Quite challenging
Minimal challenging	19 (17)		
Quite challenging	34 (30.4)		
Highly challenging	41 (36.6)		
Very highly challenging	14 (12.5)		
Regulatory or code restrictions			
Not challenging	7 (6.3)	3.46	Highly challenging
Minimal challenging	15 (13.4)		
Quite challenging	35 (31.3)		
Highly challenging	30 (26.8)		
Very highly challenging	25 (22.3)		

Notably, insufficient knowledge or exposure had one of the highest mean values (3.51), showing that professional competency gaps may be just as critical as financial constraints in determining implementation results. Furthermore, resistance to change and limited material availability were regarded as "quite challenging," highlighting the practical obstacles of transitioning from traditional design techniques to security-responsive planning. This suggests that passive security adoption necessitates both technical expertise and institutional assistance, such as design direction, standardisation, and access to appropriate construction materials.

4.4. Challenges for Implementing Passive Design Strategies Across Professionals

To evaluate whether the challenges of implementing passive design strategies differ across professional groups, the following hypotheses were stated: (i) H0: The obstacles of applying passive design strategies are the same across professionals. (ii) H1: The challenges of implementing passive design strategies vary between professionals. Table 3 summarises the problems of implementing design ideas across professions. The Kruskal-Wallis H test results show no significant difference in high initial costs, lack of skilled labour, inadequate knowledge or exposure, limited material availability, and regulatory or code restrictions across the profession ($X^2(2) = 0.194$, 1.000, 5.097, 0.126, and 4.357, $p = 0.979$, 0.801, 0.165, 0.988, and 0.225, all greater than 0.05). This result indicates a widespread professional agreement that these constraints are systemic and influence all stakeholder groups involved in event centre design and operation.

Table 3. *Challenges for implementing passive design strategies across the professionals.*

	What is your profession?	N	Mean Rank
High initial cost	Architect	49	56.26
	Engineer	35	58.19
	Event Centre Manager	26	54.71
	Security Personnel	2	56.25
	Total	112	
Lack of skilled labour	Architect	49	55.02
	Engineer	35	56.81
	Event Centre Manager	26	57.31
	Security Personnel	2	76.75
	Total	112	
Resistance to change from traditional methods	Architect	49	56.34
	Engineer	35	63.96
	Event Centre Manager	26	44.10
	Security Personnel	2	91.25
	Total	112	
Inadequate knowledge or exposure	Architect	49	55.94
	Engineer	35	63.63
	Event Centre Manager	26	46.65
	Security Personnel	2	73.50
	Total	112	
Limited availability of materials	Architect	49	56.60
	Engineer	35	57.46
	Event Centre Manager	26	54.81
	Security Personnel	2	59.25
	Total	112	
Regulatory or code restrictions	Architect	49	55.09
	Engineer	35	64.73
	Event Centre Manager	26	48.10
	Security Personnel	2	56.25
	Total	112	

However, Table 4 shows a statistically significant difference between occupations in terms of resistance to change from old ways ($p = 0.035$). This suggests that profession-specific conventions, training backgrounds, and exposure to design advances may all have an impact on passive security adoption. While architects and engineers are more comfortable with design-led interventions, facility managers and security stakeholders may prioritise operational controls, potentially causing conflict during decision-making and execution. (Fennelly and Perry, 2018).

Table 4. Kruskal- Wallis H test Test Statistics[a, b].

	High initial cost	Lack of skilled labour	Resistance to change from traditional methods	Inadequate knowledge or exposure	Limited availability of materials	Regulatory or code restrictions
Chi-Square	.194	1.000	8.611	5.097	.126	4.357
Df	3	3	3	3	3	3
Asymp. Sig.	.979	.801	.035	.165	.988	.225

a. Kruskal Wallis Test, b. Grouping Variable

5. Design Proposal: Passive Security–Integrated Event Centre Model

This section transforms the study's empirical findings into a feasible architectural design plan for Nigerian event centers. Using the Relative Importance Index (RII) rankings, perception analysis, and hypothesis testing, the proposal demonstrates how passive security principles can be integrated into architectural form, site planning, and spatial organization rather than relying solely on technological or reactive security measures. The method reflects expert consensus revealed in the study, particularly the high effectiveness of landscaping, building design, access control, illumination, and natural monitoring, while also addressing implementation issues such as cost, skills, and resistance to change. The suggested paradigm employs a tiered design logic in which one passive strategy reinforces the others, boosting overall resilience and decreasing vulnerability to single-point failures such as power outages or limited personnel availability. This is consistent with best-practice guidelines for integrating environmental design techniques with complementing management and monitoring processes [4].

5.1. Site Planning and Landscape-Based Security

Site planning and landscaping tend to be one of the most effective passive security options, having the highest RII rating. In response, the proposed design prioritises useful landscaping over just aesthetic elements. Low-height hedges, thorny shrubs, and carefully selected plant species are used to silently monitor pedestrian movement, bar unauthorised access, and establish territorial borders without creating a fortress-like appearance. These aspects steer individuals to specific entry locations while remaining visually open. Clear sightlines from the site boundary to the building entrance are intentionally maintained. This design decision enhances natural surveillance by allowing users and personnel to watch activity on the property, hence increasing perceived and actual security. In accordance with survey results, which show strong hostility to the use of landscape art and attractive impediments as security tactics, dense ornamental planting, landscape sculptures, and waterscapes that block views are purposely avoided. The emphasis is on visibility, readability, and geographical clarity to ensure safety while preserving the aesthetic and cultural backgrounds of Nigerian event locations.

5.2. Building Form, Massing, and Orientation

Building design was unanimously considered as the most effective passive security strategy, highlighting the significance of architectural form in determining safety outcomes. The proposed event center's architectural form promotes visual permeability and monitoring, particularly in public-facing parts. Transparent or semi-transparent façades are utilised in lobbies, foyers, and gathering areas to provide a visual link between indoor and outdoor spaces. Strategic window placement is used to monitor high-traffic areas like entrances, parking lots, drop-off zones, and pedestrian walkways. This technique follows the principles of natural monitoring and guarantees that movement within the facility is always apparent. Internally, a central atrium or large internal void is regarded as a structuring spatial element. This atrium increases visibility across multiple floors, makes wayfinding easier, and allows staff and users to passively monitor activities, reducing the possibility of hidden or disruptive behaviour. The building's orientation responds to site access points and circulation patterns, ensuring that the main facades actively engage with public spaces rather than turning inward. This technique transforms architectural form into an active security mechanism rather than a passive backdrop.

5.3. Access Control and Spatial Zoning

Access control was ranked second in efficacy and hence considered an important organisational approach in the proposed model. The design establishes a single prominent major entrance that is visually striking, well-lit, and easily identifia-

ble. This reduces misunderstanding, focuses monitoring efforts, and improves territory definitions. Secondary entry, such as service and staff access points, are discreetly located and visually screened, but they are clearly controlled by design rather than imposing physical barriers. Internally, the event centre is organised using progressive spatial zoning, which advances from public to semi-public, and finally limited sectors. Instead of just locking doors, changes in floor levels, materials, thresholds, and visual indications are used to achieve this spatial sequencing. This technique complies to passive security principles by gently communicating behavioural expectations to users while preventing unauthorised access to critical places. This zoning strategy quickly addresses professional attitudes identified in the survey and facilitates safer crowd control, particularly during large events, without creating an intimidating environment.

5.4. Lighting Strategy as a Passive Security Tool

Lighting was ranked as a somewhat high but crucial passive security component, especially for removing obscured areas. The suggested lighting design prioritises the uniform illumination of exterior areas such as parking lots, sidewalks, entrances and building perimeters. The goal is to eliminate dark corners and shadowy areas that could encourage illegal or harmful behaviour. Lighting is used in façades, landscape elements, and pedestrian walkways to increase spatial clarity and wayfinding at night. Rather than relying on too bright or invasive lighting, the design uses consistent lighting levels to enhance eyesight while being visually pleasing. This strategy encourages both perceived safety and functional use, particularly for evening and nocturnal events that are popular in Nigerian cities.

5.5. Technology as a Complementary Security Layer

While respondents generally agreed on the importance of technology, the findings suggest that it should augment, rather than replace, passive design strategies. In the proposed model, technology equipment such as CCTV cameras, alarm systems, and access control devices are discreetly integrated into the architectural fabric. These technologies are strategically placed to strengthen areas already reinforced by passive measures, such as entrances, atriums, and circulation paths. This layered approach assures resilience: even if technical systems fail or are compromised, the underlying spatial architecture provides a minimum level of protection. This integration also addresses issues of cost, maintenance, and over-reliance on electronic surveillance, which were noted as challenges in the study. Overall, the proposed passive security-integrated event centre idea demonstrates that security can be achieved through architectural intelligence rather than defensive architecture. The model is highly linked with the professional viewpoints and empirical facts acquired in this study since it prioritises landscape, building form, spatial zoning, illumination, and supported technology. The proposal is context-sensitive, cost-effective, and adaptable, making it suitable for both new event center constructions and retrofits of existing facilities across Nigeria.

6. Limitations and Future Research

Despite the study's contributions to understanding passive security design tactics in Nigerian event center architecture, some limitations should be noted. First, the study was carried out utilising a cross-sectional survey approach, with respondents' perceptions and professional judgements serving as the primary criteria. While this gives useful information on professional consensus and security strategy prioritising, it does not directly quantify crime reduction outcomes, behavioural responses, or the actual performance of passive security features in real-time operational scenarios. Future research should supplement perception-based assessments with observational methodologies, incident reports, and post-occupancy evaluations to demonstrate the practical efficacy of passive security interventions over time.

Second, the study was spatially concentrated on Abuja, which may limit the findings' applicability to other Nigerian cities with varying socioeconomic conditions, urban patterns, government structures, and security realities. For example, event centers like Lagos, Port Harcourt, Kano, and Maiduguri may face varied hazard profiles and design constraints due to population density, land-use patterns, and local regulatory enforcement capabilities. Future research should use a multi-city or regional comparative approach to increase external validity and contextual relevance across Nigeria's different metropolitan contexts.

Third, while the sample size (n = 112) was sufficient for descriptive analysis, ranking (RII), and non-parametric group comparisons using the Kruskal-Wallis H test, some responder categories, particularly security personnel, were underreported. The minimal participation of security personnel may have limited the scope of operational viewpoints on event-related dangers, reaction logistics, and surveillance management. Subsequent studies should investigate targeted sampling procedures to assure more balanced representation of design professionals, facility managers, and security practitioners, as well as regulatory staff involved in planning approval.

Fourth, the study concentrated on a small but significant collection of passive security factors, including landscaping, access control, physical security measures, illumination, territorial reinforcement, and building design. While these dimensions are in line with CPTED principles, other design aspects such as emergency evacuation performance, crowd movement modelling, visibility graph analysis, acoustic design for safety communication, and smart monitoring system integration were not thoroughly examined. Future work can broaden the

variable scope by using spatial analytic tools and design-performance indicators that integrate architectural planning with risk-based evaluation.

The study relied on Likert-scale replies, which are susceptible to social desirability bias and probable overestimation of agreement, especially when respondents are professionally inclined to support design-led approaches. Furthermore, while the instrument demonstrated acceptable reliability (Cronbach's alpha = 0.679-0.818), future research could improve measurement strength by incorporating validated CPTED assessment checklists, confirmatory factor analysis, and mixed-method designs that combine quantitative and qualitative data to provide more contextual interpretation.

Future research should prioritise longitudinal and post-occupancy studies assessing the real-world performance of passive security strategies in operational event centres, broaden the analysis to include more geographical contexts in Nigeria, increase stakeholder diversity in sampling, and use advanced analytical methods such as spatial configuration modelling, behavioural mapping, and multi-criteria decision frameworks. Such activities would increase empirical evidence and help to build more strong design standards and regulatory guidelines for safer event venue architecture in Nigeria.

7. Conclusion

This study demonstrates that passive security design measures, such as landscape, building design, and access control, can significantly improve safety at Nigerian event venues. Professional perceptions support the validity of CPTED concepts, whereas statistical evidence shows significant implementation difficulties related to cost, regulation, and professional capability. Integrating passive security early in the architectural design process can reduce the need for intrusive security measures while simultaneously increasing user experience. The proposed design framework develops a context-responsive approach to safer event centre architecture in Nigeria. The study also reveals that passive security solutions can produce long-term security outcomes when combined with policy enforcement, professional capacity development, and design-stage integration. Event centre projects that prioritise design-based security solutions can improve public safety while maintaining openness, diversity, and architectural uniqueness.

8. Recommendations

Based on the study's findings, the following recommendations are given to improve the integration and effectiveness of passive security design solutions in Nigerian event centre architecture. (i) Policy Integration. Planning and regulatory authorities should formally include Crime Prevention Through Environmental Design (CPTED) concepts into event center approval processes. Mandating CPTED compliance during the design and building permit stages ensures that passive security risks are addressed from the outset, rather than being retrofitted after construction. Such policy integration would promote safer public gathering spaces while reducing long-term security issues. (ii) Professional Training and Capacity Building. It is critical to strengthen security-responsive design education in architectural training institutes and continuing professional development (CPD) programs. The study identified limited knowledge and unwillingness to adapt as significant challenges, revealing gaps in professional exposure. Incorporating passive security and CPTED concepts into architecture curriculum and professional seminars would help designers gain confidence in using these measures. (iii) Design Practice. Architects and built environment professionals should consider passive security techniques throughout the conceptual and schematic design stages of event centre projects. Early integration aligns security with form, function, and aesthetics, eliminating the need for intrusive physical barriers or expensive technological solutions. This proactive approach aligns with best practices in sustainable and human-centered architecture design. (iv) Future research. More study is needed to conduct comparative post-occupancy evaluations of event centers that have included passive security systems. Such research would yield empirical data on how design interventions work in real-world contexts over time. Longitudinal and comparative studies across Nigerian cities would also contribute to a better understanding of the contextual influences on passive security effectiveness. Furthermore, future research may use risk-based evaluation methodologies that combine environmental design with facility risk management frameworks to improve decision-making in public assembly buildings [12].

Abbreviations

RII	Relative Importance Index
CPTED	Crime Prevention Through Environmental Design
CPD	Continuing Professional Development
CCTV	Closed-Circuit Television

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Author Contributions

Abdullahi Yusuf: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Software, Writing – original draft, Writing – review & editing

Conflicts of Interest

This study was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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