



ASSESSMENT OF HOUSING DESIGN FEATURES AND RESIDENTS' SECURITY IN NIGERIA: IMPLICATIONS FOR SAFER NEIGHBOURHOOD PLANNING

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ABSTRACT

Housing design is increasingly recognised as an important component of residents' security because the arrangement of buildings, streets, entrances, openings, boundaries and communal spaces can either restrict or facilitate criminal opportunities. In Nigeria, however, security responses in residential areas have frequently emphasised reactive measures such as private guards, high perimeter walls, burglary-proofing and neighbourhood vigilantes, while the preventive contribution of housing and neighbourhood design receives comparatively fragmented treatment. This study assesses the relationship between housing design features and residents' security in Nigeria and draws implications for safer neighbourhood planning. The study relies exclusively on secondary data and adopts a documentary and comparative synthesis of peer-reviewed journal articles, institutional publications, conference papers and major theoretical works on Crime Prevention Through Environmental Design (CPTED), defensible space and residential crime prevention. Evidence from Lagos, Ibadan, Ilorin, Ifo and other Nigerian urban contexts was analysed alongside recent international systematic evidence. Findings show that natural surveillance, controlled access, secure openings, perimeter definition, lighting, street legibility, active communal spaces, maintenance and the management of abandoned structures repeatedly emerge as relevant security features. Nigerian evidence also indicates that the effectiveness and adoption of these measures vary by residential density, income, housing form and neighbourhood management capacity. The study concludes that residents' security should be incorporated into housing and layout design from the planning stage rather than added after occupation through defensive retrofits. It recommends context-sensitive CPTED standards, stronger development control, security-oriented site planning, improved street and public space design, and planning guidelines that balance target hardening with visibility, accessibility, social interaction and neighbourhood quality.

Keywords: Housing design; Residents' security; Crime prevention; CPTED; Defensible space; Neighbourhood planning; Nigeria

1. INTRODUCTION

Housing performs functions that extend beyond shelter. A dwelling provides privacy, identity, investment value, family stability and a spatial base for everyday life. Its success therefore depends not only on structural soundness and access to services but also on whether occupants can use the home and surrounding neighbourhood without persistent fear of burglary, assault, intrusion or other forms of victimization (Abdulazeez, Akinbami, Abdul-Azeez and Omrin, 2025). Security is consequently an important dimension of housing adequacy and residential satisfaction. In public housing in Ogun State, Ibem, Adeboye and Alagbe (2015) found that residents evaluated housing adequacy partly through a combined dimension incorporating security, utilities and neighbourhood facilities. Morenikeji et al. (2017), using national housing characteristics for Nigeria, similarly demonstrated that housing quality is multidimensional and spatially uneven, reinforcing the need to treat the residential environment as a combination of physical attributes and neighbourhood conditions rather than as a building envelope alone.

More recent evidence sharpens this argument. Akinbami, Adigun, Olaleye, Morenikeji and Raheem (2024) examined gated communities in Ilorin and found that high perceived safety was a major reason residents chose such communities. Burglary-proof windows were the most frequently used and most effective rated conventional measure in the study, while the authors concluded that gating alone was insufficient and should be combined with multiple security

strategies. Adigun, Akinbami., Abdul-Azeez, Isola-Muyideen & Mbamara, (2025), comparing high-, medium- and low-density areas in Ifo, reported that security practices varied socio-spatially: burglary-proof windows and reinforced locks were prominent in high-density areas; fencing, security dogs and electrified wires were common in medium-density areas; and fencing and burglary-proof doors were more prominent in low-density areas. Sanni, Morenikeji and Akinbami (2025) further found spatial variation in perceived crime across residential densities in Ibadan North and identified abandoned structures as a major crime hotspot. Together, these studies underline that security is embedded in the relationship between buildings, plots, streets, density and neighbourhood management.

Despite this growing literature, an important gap remains. Many Nigerian studies focus on crime incidence, fear of crime, individual security devices or gated communities (Akinbami et al., 2024; Adigun et al., 2025). Others examine housing satisfaction or housing quality without explicitly integrating security-oriented design principles (Jegede et al., 2021; Abdulazeez et al., 2025). Consequently, the evidence linking specific housing design features to residents' security remains dispersed across architecture, planning, housing and criminology studies. There is limited synthesis showing how building-level measures, plot and perimeter design, street layout, communal-space planning and neighbourhood maintenance combine to produce safer residential environments. This is especially important because a design feature that works in one density or income context may function differently in another. For example, a high wall may deter direct entry but also block natural surveillance; a gate may control access but create congestion or exclusion; and a poorly maintained vacant plot can undermine otherwise secure housing.

This study therefore assesses housing design features and residents' security in Nigeria using secondary evidence, with the aim of deriving implications for safer neighbourhood planning. Specifically, it: (i) examines theoretical links between housing design and residential security; (ii) synthesises Nigerian empirical evidence on design-related security features; (iii) compares the security implications of building, plot, street and neighbourhood-level interventions; and (iv) proposes planning measures for integrating residents' security into housing and neighbourhood design. By using a secondary-data approach, the study brings together evidence from multiple Nigerian cities and avoids presenting the experience of a single estate as representative of the whole country.

2. LITERATURE REVIEW

Housing design refers to the organisation and physical configuration of dwelling units and the spaces that connect them to the wider neighbourhood. It includes the position of entrances and windows, internal and external circulation, setbacks, fencing, lighting, building orientation, relationship between private and public space, location of parking, treatment of open spaces, street hierarchy and the arrangement of housing clusters. Residents' security, in the context of this study, refers to the protection of people and property from crime and the extent to which residents can use their dwelling and neighbourhood without unreasonable exposure to victimisation or fear. The concept therefore includes actual security conditions and perceived security, although the two should not be treated as identical. Adigun (2013), for example, found that the pattern of fear of crime in Ibadan did not simply mirror the pattern of experienced crime across residential densities, demonstrating that perception and incidence may diverge.

In Nigeria, this contextual qualification is especially relevant because neighbourhoods vary greatly in density, income, tenure, infrastructure and governance. Morenikeji et al. (2017) found pronounced spatial differences in housing quality across Nigerian states, with variations in building materials, services and amenities. These differences imply that residents do not have equal capacity to purchase surveillance technology, construct high-specification boundaries or employ guards. Adigun et al. (2025) directly demonstrate this point by showing different dominant crime-prevention practices across residential densities in Ifo. Security planning must therefore distinguish between measures that require substantial household expenditure and those that can be delivered through planning, layout design, street infrastructure and collective management.

Nigerian security practices also reveal tension between enclosure and surveillance. Gating and fencing are widespread because they provide a visible territorial boundary and restrict entry. Akinbami et al. (2024) found that the search for safety strongly influenced residents' choice of gated communities in Ilorin, and the study concluded that gating can be valuable when combined with other measures. Yet Alexander (2012), examining CPTED principles in Abuja residential areas, noted that repeated defensive responses can produce prison-like enclaves and disharmony in the urban fabric. Excessive walls may reduce street-facing windows, weaken casual observation and isolate residents from the public realm. Good design therefore seeks a balance: boundaries should communicate ownership and regulate access without unnecessarily eliminating visibility and interaction.

2.1 Theoretical Framework

This study is anchored primarily on Crime Prevention Through Environmental Design and Defensible Space Theory. CPTED emerged from the proposition that the design and management of physical environments can influence the opportunity structure within which crime occurs (Jeffery, 1971). Contemporary formulations generally include natural surveillance, access control, territorial reinforcement, maintenance, activity support and, in some applications, target hardening (Cozens et al., 2005; Cozens & Love, 2015). Natural surveillance seeks to maximise legitimate observation of streets, entrances and common spaces. Access control organises entry so that movement into private or semi-private areas is predictable and visible. Territorial reinforcement uses physical and symbolic cues to communicate ownership and expected use. Maintenance signals active control, while activity support brings legitimate users into spaces at appropriate times.

Defensible Space Theory provides a complementary housing-focused explanation. Newman (1972) argued that residential design can create spaces that residents recognise as belonging to them and can therefore monitor and defend. The theory is particularly relevant to housing estates, where ambiguous common spaces, remote circulation routes and poor visual connection between dwellings and public areas may weaken informal control. In the Nigerian context, the theory helps explain why communal spaces, visible access routes, active frontages and clear boundary transitions can matter as much as conventional security hardware.

The two frameworks are used here cautiously. They do not imply that architecture causes crime or that poor design is responsible for criminal behaviour. Crime is shaped by broader economic, social, institutional and policing conditions. Rather, design is treated as one component that can increase or reduce opportunity, visibility and guardianship. This interpretation is consistent with Cozens and Love (2015) and with Widmark (2026), whose meta-analysis found stronger and more consistent environmental-design effects for property crime than violent crime and substantial variation between settings. The framework therefore supports a contextual rather than deterministic reading of Nigerian evidence.

2.2 Empirical Review

At the estate scale, Jegede et al. (2021) surveyed 1,036 residents in 12 public housing estates in Lagos. Their results indicated that provisions supporting communal living, estate layouts, passive security measures and locational attributes contributed significantly to residents' perceptions of security. The study is particularly important because it moves beyond household-level hardware and demonstrates that the structure of the estate itself matters. It also suggests that security can be strengthened by planning arrangements that increase residents' participation and everyday presence rather than relying only on formal policing.

The household and street scale is illustrated by Popoola et al. (2018). Using 299 respondents across Ibadan neighbourhoods, the authors found significant differences in burglary among residential areas and reported that houses accessed through footpaths were especially associated with burglary experiences. Neighbourhood responses included gates, private security and vigilante groups, while households used burglary-proof windows and doors, wire fencing and other target-hardening devices. The study explicitly concluded that neighbourhood planning and good housing design can reduce easy accessibility by burglars. Its findings directly support access control and movement management as design concerns.

Adigun (2013) provides an important density perspective. The study found that high- and medium-density areas in Ibadan recorded higher average residential crime experience than the city average, while the low-density area recorded lower experience. Yet fear of crime was highest in the low-density area, with a mean Fear of Crime Events Index of 1.1 compared with 0.8 in medium-density and 0.5 in high-density areas. The divergence indicates that the planning objective should not be confined to reducing recorded opportunity; neighbourhoods also need legibility, visibility, social confidence and management features capable of reducing fear.

Olajide (2017) tested a socio-environmental design factors model using residents of residential estates in southwestern Nigeria. Of 1,000 questionnaires administered, 467 were usable for analysis. The study reported statistically significant relationships for both environmental design factors and social development factors, supporting the proposition that residential crime prevention is most effective when physical and social interventions are combined. In a related validation study, Olajide and Lizam (2017) found professional support for the desirability and sustainability of the model. These studies reinforce the second-generation CPTED view that social organisation and environmental design should be integrated.

Akinbami et al. (2024) add recent evidence from eight gated communities in Ilorin. Their study of 359 residents found that perceived safety was a major reason for choosing gated communities. Burglary-proof windows recorded the highest strategy-use index and were also rated the most effective among the listed measures, whereas electronically controlled gates were less frequently used. The authors concluded that gating is useful but should operate in combination with multiple measures. This conclusion is important for housing design because it discourages overreliance on perimeter closure and emphasises layered security.

Adigun et al. (2025) extend the argument by demonstrating that security measures differ across residential densities in Ifo. Burglary-proof windows and reinforced locks were prominent in high-density areas; medium-density residents more often used security dogs, perimeter fencing and electrified wires; low-density residents relied substantially on fencing and burglary-proof doors. Advanced technologies such as CCTV and alarms were less common, partly because of cost. The findings imply that safer-neighbourhood standards should include affordable passive-design strategies and should not assume that all households can adopt expensive technology.

Sanni et al. (2025) studied perceived crime incidence in Ibadan North and reported spatial differences in crime occurrence, causes, effects and prevention across residential densities. Abandoned structures emerged as the major crime hotspot. This findings highlight maintenance and adaptive reuse as security strategies. A derelict building is not merely an aesthetic planning problem; it can create concealment, reduce legitimate activity and weaken territorial control. The implication is that development control, building maintenance and neighbourhood renewal should be treated as components of security planning.

The Nigerian literature therefore converges on several design-related mechanisms: controlling access, improving visibility, strengthening openings, defining territorial boundaries, maintaining buildings and public spaces, encouraging legitimate communal activity and designing layouts that support informal observation. However, the relative effectiveness of individual interventions remains context-dependent. This justifies a synthesis that organises the evidence by spatial level and translates it into planning guidance rather than attempting to produce a single national ranking of security features.

3. MATERIALS AND METHOD

The study adopted a qualitative secondary-data research design based on documentary review and comparative evidence synthesis. No primary questionnaires, interviews or field observations were undertaken for this present study. The units of analysis were published evidence on the relationship between housing or neighbourhood design and residents' security, with emphasis on Nigeria. Seminal international works were included to establish theoretical foundations and to provide a benchmark against which Nigerian findings could be interpreted.

Sources were identified through targeted searches of journal platforms, university repositories, institutional databases and academic indexing services. Priority was given to peer-reviewed journal articles and full bibliographic records. Nigerian studies were included where they met at least one of the following criteria: they examined crime or fear of crime in residential environments; evaluated physical or environmental crime-prevention measures; assessed housing or neighbourhood design in relation to security; compared residential densities or housing estates; or addressed housing quality in ways relevant to neighbourhood planning. International sources were included where they provided foundational theory or high-level systematic evidence on CPTED and residential environmental design.

A data-extraction matrix was developed around five fields: study location and residential context; study design and sample; security outcome examined; design or planning feature investigated; and principal finding. Evidence was then grouped into four spatial categories: building-level features, plot and perimeter features, street and access features, and neighbourhood-level planning and management. The synthesis relied on thematic comparison rather than statistical pooling because the Nigerian studies used heterogeneous instruments, indices and outcome definitions. Where numerical results were reported in the original studies and could be reliably verified, they were retained to illustrate patterns; otherwise, findings were expressed qualitatively.

The study also distinguished perceived security from experienced or recorded crime. This is necessary because fear of crime can move differently from crime incidence, as demonstrated by Adigun (2013). Finally, conclusions were based on convergence across multiple studies rather than on any single location. This approach reduces the risk of treating Lagos, Ibadan, Ilorin or Ifo as nationally representative and enables the study to identify planning principles that are repeatedly supported while acknowledging contextual variation.

4. RESULTS AND DISCUSSION

The reviewed evidence shows that housing design and residents' security are linked through a layered system rather than a single feature. Four recurrent levels can be identified: the dwelling itself; the plot and perimeter; the street and access network; and the broader neighbourhood environment. The strongest conclusions emerge where findings from different cities and research designs point in the same direction.

4.1 Characteristics of the Nigerian Evidence Base

The selected Nigerian studies cover public housing estates, conventional neighbourhoods, gated communities and different residential densities. Lagos evidence emphasises estate layout, communal living and passive security design; Ibadan studies highlight density, burglary routes, fear of crime and neighbourhood response; Ilorin studies illustrate gated-community choices and the effectiveness of specific household security measures; Ifo evidence shows how security practices vary by density and affordability. This diversity is useful because it demonstrates that residents' security cannot be reduced to one housing type.

Table 1: Selected Nigerian Studies on Housing, Design and Residents' Security

Study	Context	Focus	Key evidence
Adigun (2013)	Ibadan residential densities	Crime experience and fear	High/medium densities had higher average crime experience; fear highest in low density (FCEI 1.1 vs 0.8 medium and 0.5 high).
Ibem et al. (2015)	Public housing, Ogun State	Housing adequacy/satisfaction	Security formed part of residents' evaluation of housing adequacy and residential satisfaction.
Olajide (2017)	Residential estates, Southwest Nigeria	Socio-environmental design	Environmental design and social-development factors both showed significant relationships with neighbourhood crime prevention.
Morenikeji et al. (2017)	36 states + FCT	Housing quality	Housing quality varied markedly across Nigeria; authors called for stronger development control and improvement of non-conforming residential environments.
Popoola et al. (2018)	Ibadan	House burglary	Burglary differed significantly by neighbourhood ($F=3.012$); access through footpaths was prominent; gates, vigilantes, burglary-proofing and fencing were common responses.
Jegade et al. (2021)	12 public housing estates, Lagos	Perceived security	Communal living, estate layout, passive security measures and locational factors contributed strongly to perceived security.
Akinbami et al. (2024)	8 gated communities, Ilorin	Crime-prevention strategies	Safety strongly influenced gated-community choice; burglary-proof windows were the most used and highest-rated measure; layered measures were recommended.
Adigun et al. (2025)	Ifo residential densities	Conventional security measures	Preferred measures varied by density; burglary-proofing, locks and fencing remained prominent while CCTV and alarms were relatively limited.
Sanni et al. (2025)	Ibadan North	Perceived crime/hotspots	Crime patterns varied spatially; abandoned structures emerged as the major crime hotspot.

Source: Authors' compilation from reviewed literature.

4.2 Building-Level Design Features

At building level, openings are the most consistently discussed security element. Burglary-proof windows and reinforced doors increase the physical effort required for unlawful entry and are therefore classic forms of target hardening. Akinbami et al. (2024) reported burglary-proof windows as both the most frequently used and the most effective rated measure in the Ilorin gated communities studied. Adigun et al. (2025) likewise identified burglary-proof windows and reinforced locks as prominent measures in high-density areas of Ifo, while burglary-proof doors were important in low-density areas. Popoola et al. (2018) also recorded household reliance on burglary-proof windows and doors in Ibadan.

These findings provide strong Nigerian support for secure openings, but a design-centred interpretation goes beyond the installation of metal bars. Windows also serve surveillance, ventilation and social functions. Poorly positioned or permanently blocked openings can protect against forced entry while reducing outward visibility. CPTED therefore suggests that openings should be secure and observable: windows should overlook entrances, front yards, parking areas and pedestrian approaches where practical; doors should be visible from occupied rooms or neighbouring dwellings; and recesses that conceal an approaching person should be minimised. Target hardening should support, rather than replace, natural surveillance.

Lighting is another building-related feature repeatedly identified in security literature. Adequate entrance, veranda, courtyard and external lighting can increase visibility and reduce uncertainty after dark. The relevance of lighting is supported by CPTED reviews (Cozens et al., 2005; Cozens & Love, 2015; Adigun et al., 2019), while Widmark (2026) found street-lighting interventions to be one of the frequently evaluated residential environmental measures internationally. In Nigerian practice, lighting should be designed to illuminate access points and shared spaces without creating strong glare and deep shadow zones. Its effectiveness also depends on electricity reliability and maintenance, which means passive spatial visibility remains important where service supply is unstable.

Building orientation and frontage also influence informal guardianship. Housing that turns blank walls toward streets or hides entrances behind opaque enclosures reduces visual exchange with the public realm. By contrast, active frontages allow residents to observe pedestrian movement and approaching visitors. Jegede et al. (2021) found that passive security measures and estate layout contributed to security perceptions in Lagos public housing. The implication is that architectural composition should consider the relationship between living spaces and the areas requiring observation.

Table 2: Housing Design Features, Security Mechanisms and Planning Implications

Feature	Security mechanism	Supporting evidence	Planning implication
Secure doors/windows	Target hardening; increased effort required for entry	Akinbami et al. (2024); Adigun et al. (2025); Popoola et al. (2018)	Use robust openings while retaining outward visibility and ventilation.
Fences and gates	Territorial definition and access control	Akinbami et al. (2024); Adigun et al. (2025); Popoola et al. (2018)	Control access without creating unnecessary opaque street edges.
Visible entrances and active frontage	Natural surveillance	Jegede et al. (2021); Newman (1972); Cozens & Love (2015)	Orient occupied rooms and windows toward entrances, streets and common spaces.
Pedestrian routes	Movement management and guardianship	Popoola et al. (2018)	Route paths through observable areas and minimise hidden rear access.
Communal spaces	Activity support and collective surveillance	Jegede et al. (2021)	Locate play/sitting areas where surrounding dwellings provide informal observation.
Lighting	Improved visibility after dark	Cozens et al. (2005); Widmark (2026)	Prioritise approaches, intersections and shared areas; ensure maintenance.
Maintenance/derelict-property control	Territorial reinforcement; removal of concealment	Sanni et al. (2025); Cozens & Love (2015)	Secure, reuse or enforce action on abandoned structures and unmanaged spaces.
CCTV/alarms/guards	Active monitoring and response	Adigun et al. (2025); Akinbami et al. (2024)	Use as reinforcement, not a substitute for sound spatial design.

Source: Authors' compilation from reviewed literature.

4.3 Plot, Boundary and Access Features

Perimeter treatment is perhaps the most visible security response in Nigerian housing. Fences, gates, walls, electric wire and controlled entrances communicate territorial ownership and limit uncontrolled movement. Akinbami et al. (2024) confirm the importance of gated-community environments in residents' safety preferences, while Adigun et al. (2025) show that fencing remains prominent across medium- and low-density residential areas. Popoola et al. (2018) similarly identify gates and wire fencing among common neighbourhood and household responses to burglary.

However, perimeter security presents an important design trade-off. Very high opaque walls can obstruct surveillance of streets and adjoining properties, potentially weakening the collective guardianship that CPTED seeks to create. Alexander (2012) observed that defensive responses in Abuja can generate fortress-like residential enclaves. Therefore, the planning objective should be controlled permeability rather than absolute isolation. Boundary treatments can combine adequate height, robust construction and visually permeable sections where appropriate. Pedestrian and vehicular gates should be placed where approaching users can be observed, while secondary entrances should not create uncontrolled rear access.

Movement routes are equally important. Popoola et al. (2018) reported that burglary occurred especially in houses accessed through footpaths. This does not imply that footpaths are inherently unsafe; rather, paths that are poorly lit, hidden from dwellings or weakly connected to legitimate activity can increase opportunity. Safe neighbourhood planning should align pedestrian routes with active frontages, reduce unnecessary blind corners and ensure that shortcuts do not create concealed access to rear boundaries. Access hierarchies should be legible to residents and visitors so that unusual movement is more easily recognised.

Setbacks and the location of parking, service yards and outbuildings also influence surveillance. Excessive front setbacks with dense vegetation or opaque walls can create unobserved spaces, while poorly positioned service structures may facilitate climbing or concealment. CPTED does not prescribe a single setback dimension; instead, the principle is to maintain clear sightlines and predictable transitions. In this respect, development-control review can evaluate security consequences alongside conventional requirements for ventilation, parking and building lines.

4.4 Street Layout, Communal Space and Natural Surveillance

The evidence from Lagos demonstrates that neighbourhood layout and communal living arrangements are significant. Jegede et al. (2021) found that estate layouts and provisions for communal living contributed strongly to residents' security perceptions across 12 public housing estates. This finding is consistent with Jacobs' (1961) concept of everyday street observation and Newman's (1972) proposition that residential environments work better when residents can identify, observe and feel responsible for shared spaces.

Communal spaces can strengthen security when they attract legitimate users and are visually connected to surrounding dwellings. Play areas, courtyards, sitting spaces and pedestrian nodes placed where many homes can overlook them create routine presence. By contrast, residual spaces located behind buildings or at the edge of developments may have limited legitimate activity. The security value of communal space therefore depends more on its position, visibility and management than on its mere provision.

Street configuration also affects movement and guardianship. A network that is excessively fragmented may create hidden passages, while a highly impermeable system may concentrate movement at a few points and isolate interior areas. Safer planning requires a context-sensitive balance. Main approaches should be visible, addresses should be legible, dead ends should not contain unmanaged leftover land, and pedestrian connections should pass through observable areas. These principles can be incorporated during layout approval rather than retrofitted after occupation.

Sanni et al. (2025) provide a particularly important management finding: abandoned structures emerged as the leading crime hotspot in their Ibadan North analysis. Vacant and derelict buildings can reduce legitimate activity, create concealment and signal weak territorial control. Their treatment should therefore form part of neighbourhood security policy. Planning authorities can use enforcement, temporary securing, adaptive reuse, clearance where legally justified, and maintenance notices to prevent such properties from becoming persistent security liabilities.

4.5 Residential Density, Socio-Economic Conditions and Security

Design interventions operate within socio-economic conditions. Adigun (2013) found higher average residential crime experience in high- and medium-density areas of Ibadan than in low-density areas, but the fear-of-crime index was highest in the low-density area. This indicates that density affects both exposure and perception in complex ways. High-density environments may have more people and more potential guardians, yet overcrowding, shared access and weaker building control may increase opportunities. Low-density areas may experience fewer incidents but greater isolation, longer distances and fewer people in public space, which can increase fear.

Adigun et al. (2025) further show that security technologies and practices vary with neighbourhood conditions. Advanced systems such as CCTV and alarms were relatively limited, while physical devices such as burglary-proofing, reinforced locks, fences and dogs were more common. This pattern has equity implications. If safer-neighbourhood policy relies mainly on expensive technology purchased by households, low-income residents will remain disadvantaged. Planning-based measures such as street lighting, visible routes, active communal spaces, well-

maintained public areas, building orientation and controlled but affordable access can distribute security benefits more broadly.

Morenikeji et al. (2017) also remind planners that housing quality and infrastructure vary substantially across Nigeria. Security standards should therefore be adaptable to settlement conditions rather than copied from high-income gated estates. In underserved areas, basic improvements in street condition, lighting, drainage, waste management and development control may contribute indirectly to security by increasing legitimate use and signalling active management. This reinforces the argument that residents' security should be integrated into broader neighbourhood upgrading programmes.

Table 3: Selected Quantitative Findings Relevant to Housing Design and Security

Study	Evidence base	Selected result	Interpretation
Akinbami et al. (2024)	359 residents; 8 gated communities	Burglary-proof windows: SCPI 3.93; ECPI 4.02	Strong support for target hardening, but authors recommend combining measures.
Adigun (2013)	Residential-density comparison	Fear index: low 1.1; medium 0.8; high 0.5	Perceived insecurity does not simply mirror crime experience.
Popoola et al. (2018)	299 respondents	Neighbourhood difference in burglary: $F=3.012$	Access and neighbourhood form matter alongside household measures.
Olajide (2017)	467 usable responses	Environmental design $p=0.0007$; social development $p=0.0025$	Supports combined physical and social crime-prevention strategy.
Widmark (2026)	31 residential studies; 29 in meta-analysis	Pooled property-crime RES 1.47 (95% CI 1.15–1.89), approx. 32% relative reduction	International evidence supports environmental design for property crime but with high heterogeneity.

Source: Authors' compilation from reviewed literature.

4.6 Synthesis of Housing Design Features and Security Implications

Across the reviewed studies, the most defensible conclusion is that layered security performs better conceptually than reliance on a single barrier. The building should resist unlawful entry; the plot should communicate ownership and manage access; the street should remain observable and legible; and the neighbourhood should support activity, maintenance and collective guardianship. Akinbami et al. (2024) reached a similar practical conclusion in finding that gating should be combined with other measures rather than treated as sufficient by itself.

The evidence also supports a distinction between passive and active security. Passive features are embedded in design: sightlines, window placement, entrance orientation, boundary configuration, lighting infrastructure, street alignment and spatial definition. Active measures include guards, CCTV, alarms, access-control personnel and patrols. Passive features are especially important because they continue to influence behaviour even when technology fails or personnel are absent. Active measures can then reinforce this design foundation.

A final synthesis concerns the relationship between security and neighbourhood quality. Extreme target hardening may reduce some risks while producing visual hostility, reduced social interaction and weaker public surveillance. The objective of safer neighbourhood planning should therefore be secure openness rather than defensive isolation. Design should make unauthorised access difficult, authorised movement clear, public areas visible, and communal spaces active. Such an approach aligns with both CPTED and defensible-space principles and is supported by the Nigerian evidence on communal living, gating, burglary responses, density variation and abandoned structures.

Table 4: Proposed Multi-Level Framework for Safer Neighbourhood Planning

Spatial level	Key design concern	Security objective	Planning instrument
Dwelling	Entrances, windows, locks, facade orientation	Secure openings + natural surveillance	Building design review
Plot/perimeter	Walls, fences, gates, setbacks, parking	Territorial reinforcement + controlled permeability	Site plan/development control
Street/access	Road hierarchy, paths, lighting, intersections	Legible movement + observable routes	Layout approval and infrastructure provision
Shared space	Courtyards, play areas, sitting spaces	Activity support + collective guardianship	Estate/neighbourhood design
Neighbourhood management	Maintenance, vacant plots, abandoned buildings	Remove concealment + signal active control	Enforcement, renewal and property management
Active security	Guards, CCTV, alarms, access personnel	Monitoring + response	Operational management layered onto design

Source: Authors' compilation from reviewed literature.

5. CONCLUSION

The study concludes that housing design plays an important role in residential security, but no single architectural feature can prevent crime on its own. Effective security depends on the combined influence of building design, neighbourhood layout, lighting, access control, natural surveillance, maintenance, management and resident participation. Excessive reliance on household fortification may protect individual buildings while reducing visibility and interaction within the wider neighbourhood. Security should therefore be considered from the planning and design stages of residential development, with greater emphasis placed on preventive measures that create safer streets, shared spaces and housing environments.

6. RECOMMENDATIONS

The findings of this study point to the need for practical planning and design measures that can improve residential security. The following recommendations are proposed to guide planners, designers, estate managers and residents in creating safer housing environments:

Planning authorities should revise residential development-control checklists to include CPTED requirements such as clear entrance visibility, adequate street lighting, defined pedestrian routes and proper treatment of poorly used spaces before granting planning approval. Architects and building designers should position doors, windows, balconies and other openings to allow residents to observe entrances, adjoining streets and shared spaces while still providing adequate physical security. Developers and property owners should avoid excessively high opaque perimeter walls where they block surveillance. Where boundary walls are necessary, designs should include visually permeable sections, controlled entry points and adequate lighting around gates. Local authorities and estate managers should carry out regular neighbourhood maintenance, including repairing faulty streetlights, clearing waste, maintaining open spaces and addressing abandoned or derelict buildings that may create opportunities for crime. Government and planning agencies should provide basic neighbourhood security infrastructure, especially in lower-income and high-density areas, so that residents are not forced to depend entirely on costly private security measures. Estate managers and resident associations should establish clear responsibility for the upkeep and monitoring of communal spaces, organise routine inspections and encourage residents to report damaged lighting, abandoned areas and other conditions that may increase security risks.

References

- Abdulazeez, B. F., Akinbami, B. S., Abdul-Azeez, B. M., & Omrin, O. J. (2025). Assessment Of Factors Influencing Off and On-Campus Student Housing Satisfaction In Kwara State University, Malete. *Journal of Environmental Spectrum*, 5(2), 18-30.
- Adigun, F. O. (2013). Residential differentials in incidence and fear of crime perception in Ibadan. *Research on Humanities and Social Sciences*, 3(10), 96–104.
- Akinbami, B., Abdul-Azeez, B., Adigun, O., Isola-Muyideen, O. L., & Mbamara, B. E. (2025). Assessment of Socio-Spatial Dynamics of Crime Prevention Strategies across Different Residential Densities in Ifo, Ogun State. *Journal of Environmental Spectrum*, 5(2), 49-62
- Adigun, F.O., Abolade, O, Akindele, O.A, Ige, J O, Oguntuyi D.I & Akinbami, B. S (2019). *Residential Differentials in incidence of Juvenile Delinquency in Ijaye Low-Cost housing estate, Lagos State, Nigeria*. 9 (9), 2019,
- Agbola, T. (1997). *The architecture of fear: Urban design and construction response to urban violence in Lagos, Nigeria*. IFRA-Nigeria.
- Akinbami, B. S., Adigun, F. O., Olaleye, E., Morenikeji, T. O., & Raheem, W. A. (2024). Crime prevention strategies in gated communities of a developing city: Case of Ilorin, Nigeria. *FUOYE Planning Journal*, 2(2), 34–57.
- Akinluyi, M. L., Awe, F. C., Yakubu, S. U., & Ajiboye, O. I. (2022). *A review of architectural design standards for urban housing security and safety in Nigeria*. In *Proceedings of the 3rd National Conference of the Nigerian Institute of Town Planners: Physical Planning and Urban Security in Nigeria, Abuja*.
- Alexander, A. (2012). *Crime prevention through environmental design principles in residential areas in Abuja, Nigeria (Master's thesis)*. Universiti Putra Malaysia.
- Cozens, P. M., Saville, G., & Hillier, D. (2005). *Crime prevention through environmental design (CPTED): A review and modern bibliography*. *Property Management*, 23(5), 328–356. <https://doi.org/10.1108/02637470510631483>
- Cozens, P., & Love, T. (2015). A review and current status of crime prevention through environmental design (CPTED). *Journal of Planning Literature*, 30(4), 393–412. <https://doi.org/10.1177/0885412215595440>
- Ibem, E. O., Adeboye, A. B., & Alagbe, O. A. (2015). Similarities and differences in residents' perception of housing adequacy and residential satisfaction. *Journal of Building Performance*, 6(1), 1–14.
- Jacobs, J. (1961). *The death and life of great American cities*. Random House.
- Jeffery, C. R. (1971). *Crime prevention through environmental design*. Sage Publications.
- Jegede, F. O., Ibem, E. O., & Oluwatayo, A. A. (2021). *The influence of location, planning and design features on residents' satisfaction with security in public housing estates in Lagos, Nigeria*. *Urban Design International*, 26, 174–196. <https://doi.org/10.1057/s41289-020-00141-7>
- Newman, O. (1972). *Defensible space: Crime prevention through urban design*. Macmillan.
- Olajide, S. E. (2017). Proposed socio-environmental design factors (SEDeF) model as residential neighbourhood crime prevention strategy in Nigeria. *Advances in Social Sciences Research Journal*, 4(1), 203–214. <https://doi.org/10.14738/assrj.41.2593>
- Olajide, S. E., & Lizam, M. (2017). *Experts' opinion on the validation of socio-environmental design factors (SEDeF) model as a residential neighbourhood crime prevention technique in Nigeria*. *Path of Science*, 3(8), 2015–2023. <https://doi.org/10.22178/pos.25-9>
- Popoola, A. A., Alabi, M., Ojo, A., & Adeleye, B. (2018). Household and neighbourhood responses to house burglary in Ibadan. *Journal of African Real Estate Research*, 3(2), 150–178. <https://doi.org/10.15641/jarer.v3i2.575>
- Sanni, L., Morenikeji, T. O., & Akinbami, B. S. (2025). Safety under siege: Analysis of perceived crime incidence in Ibadan North Local Government Area, Oyo State, Nigeria. *Contemporary Issues in Planning and Environmental Studies*, 1(1), 1–14. <https://doi.org/10.5281/zenodo.17053983>
- Widmark, J. (2026). Crime prevention in residential areas: A systematic review and meta-analysis of environmental design approaches. *European Journal on Criminal Policy and Research*, 32, 943–971. <https://doi.org/10.1007/s10610-026-09659-y>