THE PREVALENCE OF BUILDING COLLAPS E IN NIGERIA: ASSESSING THE CAUSES AND THE MITIGATING STRATEGIES FOR BUILDING SUSTAINABILITY

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ABSTRACT

This study examines the increasing prevalence of building collapse in Nigeria, identifying its root causes and evaluating strategies for promoting building sustainability. Building failures have become alarmingly frequent, leading to significant loss of lives, economic setbacks, and public safety concerns. Through a review of relevant literature, case studies, and regulatory frameworks, the research highlights key contributing factors such as the use of substandard materials, poor workmanship, non-compliance with building codes, and weak institutional oversight. The study further explores effective mitigating strategies including stricter enforcement of construction regulations, engagement of qualified professionals, improved material quality control, and enhanced public awareness. It concluded that by implementing these mitigating strategies effectively, Nigeria can move toward a more resilient and sustainable construction industry, thereby ensuring safer built environments for its growing population. It also recommended that government agencies at federal, state, and local levels must enforce the Nigerian Building Code rigorously. All building plans should be properly vetted, approved, and continuously monitored during construction to ensure compliance with structural and safety standards.

KEYWORDS: Building Collapse, Nigeria, Causes, Mitigating Strategies, Building Sustainability

INTRODUCTION

In Nigeria's built environment, building collapse has become a persistent and extremely concerning problem. Numerous instances of structural breakdown have occurred around the nation, frequently leading to fatalities, serious injuries, and substantial financial lossesThe most impacted cities are Lagos, Abuja, and Port Harcourt. These disasters occur often in both urban and semi-urban areas. According to Oke et al. (2019), the frequency of building collapse in Nigeria has increased considerably over the last two decades, drawing attention to serious deficiencies in the construction industry. The tendency reveals the absence of efficient regulatory enforcement in the industry in addition to defects in structural design and implementation. Numerous investigations have pinpointed a variety of reasons for these collapses. Chief among them are the use of substandard building materials, poor structural designs, engagement of unqualified professionals, non-compliance with building codes, and weak regulatory oversight (Adewuyi & Odesola, 2018Buildings frequently either lacked authorized development plans or diverged from them while being built. In the informal construction sector, where regulations are frequently lax, poor craftsmanship and a lack of skilled monitoring exacerbate the issue. As observed by Windapo and Rotimi (2018), client cost-cutting strategies and contractor negligence also contribute significantly to structural failures.

Scholars and professional associations have suggested a number of mitigation techniques to lessen the likelihood of building collapses and improve sustainability in response to these issues. These include stricter enforcement of the National Building Code, regular site inspections, mandatory use of certified professionals, and better training and licensing procedures (Olagunju, Aremu & Ogundele, 2018). Additional tactics include encouraging the use of long-lasting and tried-and-true building materials, conducting soil testing prior to laying a foundation, and making sure that zoning and planning regulations are followed. Additionally, increasing public awareness of the dangers of prohibited building techniques can encourage clients and contractors to behave more responsibly during construction. Examining the present frequency of building collapses in Nigeria, determining their underlying causes, and evaluating the efficacy of current mitigation techniques are the objectives of this study. It will provide a thorough study of the issue by utilizing both statistical data and case studies. The study aims to suggest sustainable solutions that are in line with global best practices in urban development and construction by assessing present practices and the gaps in regulatory enforcement. The ultimate objective is to help create safer, more environmentally friendly structures that can accommodate Nigeria's expanding population and urbanization demands.

Concept of building collapse

Building collapses are among the most destructive structural failures that result in significant property damage, social disturbance, and fatalities. Ameh and Ogbu (2015) define it as the sudden and complete failure of a building's load-bearing elements, leading to the structure's partial or complete collapse. International attention has been drawn to the problem, particularly in developing countries where poor construction practices and loose laws are prevalent. To comprehend the idea of building collapse, one must look at its causes, consequences, and mitigation strategies in relation to public safety, urban planning, and civil engineering.

Fig 1. Building collapse scene.

According to Oloyede, Omoogun, and Akinjare (2010) a building collapse is known as the breakdown of the structural system when a structure cannot support its intended load. It may be total, in which case the entire building collapses, or partial, in which case only a portion fails. The phenomena could be the consequence of long-term degeneration and happen suddenly or gradually. In order to comprehend how and why building collapses happen,

researchers use fields including structural engineering, materials science, and construction management. There are many different and frequently connected reasons why buildings collapse. Poor design, inferior materials, flawed construction, foundation failure, and overloading are some of the main causes.

According to Ayedun, Durodola, and Akinjare (2012), the primary causes in poor countries are subpar construction and the usage of subpar materials. Contractors usually take shortcuts that compromise structural stability in order to save money. Inadequate supervision and disregard for building codes exacerbate the problem even more (Ede, 2010). Design mistakes, such as inaccurate load-bearing capacity estimations or insufficient consideration of environmental factors, are another important contribution (Omenihu, Onundi, & Alkali, 2016). The selection of inappropriate materials, such as the use of high alumina cement in prestressed concrete floors or red shale, which is full of sulfates, as hardcore, has frequently resulted in a building's failure to function satisfactorily. However, the biggest cause of degradation over the years has been the lack of appropriate details to keep the weather at bay (David & Isaac, 2024).

Failures of the foundation because of inadequate soil conditions or geotechnical studies can potentially cause instability. Environmental factors like earthquakes, flooding, and heavy rains could accelerate deterioration and cause collapse (Agbo & Olofinnade, 2021). The consequences are catastrophic when a structure falls. In addition to the acute loss of human life, it has long-term societal and economic repercussions. Governments must invest more in rescue operations and compensation since communities are uprooted (Ameh & Ogbu, 2015). Furthermore, it is impossible to ignore the psychological anguish endured by victims' families and survivors. In terms of the economy, recurrent failures discourage investment in the construction industry and erode public confidence in regulatory agencies. They also highlight the inadequacies in urban governance and safety regulations. Failures of the foundation because of inadequate soil conditions or geotechnical studies can potentially cause instability. Environmental elements that might hasten degradation and lead to collapse include flooding, earthquakes, and excessive rains (Agbo & Olofinnade, 2021). When a structure collapses, the results are disastrous. It causes long-term societal and economic effects in addition to the immediate loss of human life. Communities are uprooted, and governments must spend more on rescue efforts and reparations (Ameh & Ogbu, 2015).

Second, all construction projects should be required to use qualified experts, such as engineers, architects, and constructors. Practitioners are guaranteed to remain current with contemporary construction methods through ongoing professional development (Ede, 2010). Controlling the quality of the materials and the craftsmanship is equally important. Additionally, public education regarding the dangers of using unlicensed contractors and building designs can help reduce the occurrence of dangerous buildings (Ayedun et al., 2012). Last but not least, employing state-of-the-art technologies, including structural health monitoring systems, can help detect failure early before a collapse occurs. Building collapses pose a serious threat to both human safety and sustainable urban development. By adhering to government regulations, professional ethics, and construction standards, their occurrence can be substantially avoided. It is the collective duty of engineers, builders, legislators, and the general public to prevent collapses. To guarantee safer structures and resilient cities, it is essential to fortify institutional frameworks and foster an accountable culture.

Causes of building collapse

In both industrialized and developing nations, building collapse is a common issue that frequently results in tragic deaths, serious injuries, and property destruction. When residential or commercial buildings in heavily populated regions are affected, this phenomenon can be especially destructive. Building collapses persist because of a complex interaction of elements, even with advancements in construction technology and regulatory frameworks. To ensure public safety and establish preventative tactics, it is essential to comprehend these factors. According to scholarly and professional sources, the main reasons why buildings collapse are bad design, subpar construction techniques, inadequate materials, foundation failure, neglect, and natural calamities.

Design Flaws and Engineering Errors: A major contributing factor to building collapse is inadequate structural and architectural design. A structure becomes structurally susceptible if it is not appropriately constructed to support the loads it will experience, such as dead loads, live loads, wind, and seismic pressures. Inaccurate load calculations, inadequate reinforcements, or structural systems that are not suitable for the site are examples of design errors.According to Oloyede, Omoogun, and Akinjare (2010), many collapsed buildings in Nigeria were traced to professional negligence or ignorance of design principles. A case in point is the Ronan Point tower collapse in London (1968), where a gas explosion caused a progressive collapse due to the inadequacy of the structural joints—a direct consequence of design error (Levy & Salvadori, 2002).

Use of Substandard Construction Materials: The risk of collapse is greatly increased when inferior or fake building materials are used. A structure's strength and endurance are compromised by materials like subpar cement, subpar steel reinforcement, and tainted aggregates. These materials are frequently used as a result of either inadequate quality control or cost-cutting initiatives. Bamidele and Ogunsemi (2006) noted that in Nigeria, many contractors substitute original materials with inferior ones to maximize profit, often under minimal supervision. This compromise in material quality can result in early structural failure, especially under load or stress.

Poor Workmanship and Construction Practices: Structural problems can result from subpar construction quality, even with suitable designs and materials. This includes not following permitted construction methods, inadequate welding or joint connections, and inappropriate concrete curing. According to Ayininuola and Olalusi (2004), many building collapses in Nigeria occur during construction, highlighting issues such as the employment of unskilled laborers and the absence of professional supervision. In many countries, labor shortages and cost pressures lead to the hiring of inadequately trained workers, which severely affects the structural integrity of buildings.

Foundation Failures: Any structure's stability depends on its foundation. Differential settling, cracking, and final collapse can result from poorly planned or performed foundations. Poor soil investigation, problems with the water table, or overloading are frequently the causes of foundation failure. For example, the collapse of a six-story building in Nairobi, Kenya, in 2016 was attributed to foundation failure caused by construction on marshy land without proper soil testing (Muthomi, 2016). This emphasizes the importance of geotechnical assessments

before construction begins.

Lack of Maintenance and Structural Deterioration: Like all physical structures, buildings deteriorate with time as a result of wear and tear, usage, and exposure to the elements. Serious structural problems can develop from minor flaws if they are not regularly maintained and repaired. Water leaks, concrete deterioration, and rusting steel reinforcement are common maintenance problems. As Anumba, Bessis, and Duke (2007) observed, the absence of a structured maintenance culture in many developing nations leads to progressive structural weakness, eventually resulting in collapse. Ignoring signs such as wall cracks, uneven settlement, and water seepage can be disastrous in the long run.

Effects of Building Collapse

Beyond the immediate loss of life, building collapse has serious societal and human repercussions. Hundreds of people lose their homes, families, and means of subsistence every year as a result of buildings collapsing, particularly in developing nations like Nigeria. According to Adegboye et al. (2020), building collapse results in high mortality rates, injuries, and displacement of victims, thereby causing psychological trauma among survivors. In impacted communities, the psychological anguish of losing loved ones and possessions frequently results in chronic depression and social instability. Furthermore, emergency response systems are regularly overloaded, highlighting the shortcomings of urban catastrophe management frameworks in many countries.

Economically, building collapse imposes enormous financial burdens on individuals, organizations, and governments. The cost of reconstruction, medical care for victims, and compensation for losses significantly drain public and private resources. Eze and Nwachukwu (2022) observed that frequent building failures in Nigerian urban centers contribute to a decline in investors' confidence in the real estate sector. Additionally, local commerce, educational services, and commercial operations are disrupted by the loss of infrastructure. Additionally, funds that could have been allocated to national development are instead diverted to rebuilding and rescue activities, which slows economic progress.

In terms of the environment, building collapses produce enormous amounts of waste and exacerbate pollution and land degradation. Concrete, metal, and chemical debris contaminates soil and water sources, putting nearby people' health at further risk. A study by Oladipo et al. (2024) revealed that the environmental aftermath of collapsed buildings often leads to air and soil contamination, affecting both human and ecological health. In addition to undermining urban sustainability, the frequent occurrence of structural failures makes cities less resilient and hazardous. Therefore, the entire impact of building collapse includes long-term environmental and developmental issues in addition to human and economic aspects.

Cases of Building collapse in Nigeria

Fig. 2: The Synagogue Church of All Nations (SCOAN) Guesthouse Collapse

In the Ikotun-Egbe neighborhood of Lagos State, a multi-story guesthouse owned by the Synagogue Church of All Nations (SCOAN), which was presided over by Pastor T.B. Joshua, tragically fell on September 12, 2014. About 115 individuals were killed in the tragedy, most of whom were South Africans traveling for religious reasons. According to reports, additional levels were added to the building—which was either under construction or undergoing expansion at the time—without the necessary reinforcement or approval. According to investigations conducted by the Nigerian Building and Road Research Institute (NBRRI) and the Lagos State Government, structural breakdown was caused by subpar materials and bad design. The incident prompted requests for more regulation of private construction projects and religious organizations, as well as widespread criticism of regulatory agencies.

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Fig. 3: Lekki Garden Building Collapse

At least 34 persons were murdered when a five-story building that was being built in Lagos State's Lekki Phase 1 collapsed on March 8, 2016. The structure, which Lekki Gardens was developing, had more floors than the regulatory bodies had permitted. Construction proceeded in spite of stop-work orders that had been issued before the collapse, demonstrating the regulatory agencies' lax enforcement of building laws. Government representatives and witnesses attested to the fact that inadequate construction and subpar materials were major contributors to the catastrophe. Following the arrest of the managing director of Lekki Gardens, the Lagos State government temporarily closed construction sites around the state in order to review safety regulations.

Fig. 4: Ita-Faaji School Building Collapse

A three-story structure on Massey Street on Ita-Faaji, Lagos Island, fell on March 13, 2019, while classes were in session. Ohen Nursery and Primary School was located on the top floor of the structure; hence, the collapse was very tragic. Over 40 individuals were recovered from the wreckage, while at least 20 people—mostly children—were officially declared dead. According to reports, the Lagos State Building Control Agency (LASBCA) had designated the building for demolition; however, the order was not carried out. The building had been previously condemned and was found to have obvious cracks, yet it was still being used for residential and educational purposes. Debates about the safety of urban housing, ineffective regulations, and the unlawful conversion of residential structures into schools were sparked by the occurrence, which attracted national and worldwide attention.

Fig. 5: Ikoyi High-Rise Collapse

On November 1, 2021, one of Nigeria's most notable recent building collapses took place on Gerrard Road in Ikoyi, Lagos. At least forty-two persons, including the developer, Femi Osibona, were killed when the 21-story luxury residential high-rise known as 360 Degrees Towers collapsed under construction. According to reports, the building was originally authorized for 15 levels, but construction went on to 21 floors, revealing once more the regulatory bodies' shortcomings. According to investigations, the structure was damaged by changes made to the original structural design and lacked adequate reinforcing. There have been calls for a significant revamp of Lagos State's building approval and monitoring procedure as a result of this case, which has rekindled public fury and exposed the structural corruption in the country's construction and regulatory sectors.

- **Fig.6: Reigners Bible Church Building Collapse in Uyo, Akwa Ibom State**

On December 10, 2016, the Reigner Bible Church International, a church structure that was still under construction in Uyo, Akwa Ibom State, fell during a consecration ceremony. At least 23 persons were killed (some accounts put the death toll as high as 160) and numerous others were injured when the roof collapsed while hundreds of believers were gathered for the bishop's ordination. Poor construction methods combined with a rush to finish the structure before the planned event were blamed for the catastrophe. Engineering evaluations and eyewitness reports indicated the use of inferior materials and insufficient structural support. The event brought to light the risks associated with religious construction projects that prioritize timelines or divine explanations over engineering standards.

Fig. 7: Onitsha Shopping Plaza Collapse

A commercial building that was being built in Onitsha, Anambra State, fell in February 2024, leaving at least six persons dead and numerous others injured. Prior to its collapse, the shopping mall was said to have had obvious fissures and wobbly flooring, which were indicators of structural stress. According to investigations, work was taking place without the proper permissions or professional engineers' oversight. Furthermore, early results indicated that the concrete mix was of inferior quality, which further implicates shoddy construction and oversight. The governor of Anambra State released new construction monitoring standards as a result of this incident, which increased awareness of dangerous construction methods throughout Southeast Nigeria.

Fig. 8: Collapse of a two-story Saint Academy school building in Jos

A disaster occurred in Jos, Plateau State, on July 12, 2024, when a two-story Saint Academy school building in the Busa Buji neighborhood fell while classes were in session. Numerous pupils were hurt or trapped, and at least seven students lost their lives. Local community leaders had previously warned about the building's condition, but this calamity nevertheless happened. Later investigation revealed a flawed foundation, perhaps as a result of weak structural engineering and a bad soil assessment. The incident brought to light the dangers that poorly kept and uncontrolled buildings offer to schools, particularly in areas with weak building regulatory agencies.

Remedial Strategies to Building Collapse

In many developing nations, building collapses have become a common occurrence, resulting in property damage, fatalities, and a decline in public trust in the building sector. Poor supervision, inferior materials, and non-compliance with building codes continue to be important culprits in Nigeria and related regions. According to Adegboye et al. (2020), over 60% of collapses result from structural negligence and regulatory failure. This alarming trend calls for effective remedial strategies to ensure safety, sustainability, and structural integrity in the built environment.

- **Strict Enforcement of Building Codes and Regulations**

Strict adherence to building norms and regulations is one of the best ways to stop buildings from collapsing. Many collapses are caused by unqualified contractors, inferior materials, or noncompliance with accepted building requirements. According to Adegboye et al. (2020), most building collapses in Nigeria occur due to the absence of effective supervision and enforcement by regulatory authorities. Ensuring that all construction projects meet the Nigerian Building Code and international safety standards will significantly minimize risks associated with poor construction practices.

- **Use of Quality Construction Materials**

For structural stability, only authentic and certified building materials should be used. To cut costs, builders in many underdeveloped nations frequently utilize inferior cement, iron rods, or

sand combinations, which jeopardizes structural integrity. A study by Olayinka and Ede (2021) revealed that over 65% of collapsed structures in Lagos State were traced to poor-quality materials. Regular inspection and testing of materials during the construction process by quality control engineers should be mandated to ensure compliance with safety requirements.

- **Engagement of Qualified Professionals**

Another important corrective action is to hire certified architects, structural engineers, and builders at every step of building. Unlicensed and underqualified workers frequently make technical mistakes in design or execution that cause collapse. A large portion of building failures are caused by professional carelessness and the usage of quacks in the construction sector. To uphold professional standards, professional regulating organizations like COREN and NIOB must mandate practitioners' registration and ongoing evaluation.

- **Regular Structural Integrity Assessments**

Periodic evaluation of existing structures is essential in detecting early weaknesses and preventing collapse. According to Usanga & Usanga (2024), institutions should establish a routine schedule for the maintenance and inspection of buildings… to identify structural weaknesses and safety hazards before they become critical. A similar proactive approach in housing and infrastructure maintenance can safeguard against unexpected structural failures.

- **Public Awareness and Education**

It is essential to inform builders, craftspeople, and the public about the negative effects of disregarding building codes. Ignorance or attempts to take shortcuts are the main causes of collapses. Governmental organizations, trade groups, and the media can all launch public education efforts to promote accountability and compliance. The safety culture among builders and landlords is greatly enhanced by regular public education on construction ethics.

Effective Urban Planning and Land Use Control

Poor land use and unregulated urban expansion contribute to unstable foundations and collapse. Sustainable urban planning integrates environmental, social, and economic factors to create livable and resilient urban environments (Usanga & Edem, 2024). Comprehensive planning and soil assessent should therefore be prioritized to ensure building sites are structurally suitable.

- **Adoption of Modern Construction Technologies**

According to a recent study by Oladipo et al. (2024), integrating BIM and real-time monitoring systems improved project quality control and minimized collapse risks in multi-story buildings. The adoption of digital technologies promotes transparency, efficiency, and safety in construction processes. Modern technologies like Building Information Modeling (BIM), structural simulation software, and smart sensors can help detect flaws early and ensure design accuracy. These innovations also reduce human error and improve project monitoring.

Building Standard Control Policy against Collapse by the Respective Regulatory bodies

Building collapses continue to be a global concern because of the catastrophic consequences they have on property, human lives, and the economy. The prevalence of these occurrences in many developing nations is a sign of lax enforcement of building codes and inadequate compliance with construction laws. To guarantee the structural stability, safety,

and sustainability of buildings, the relevant regulatory agencies have devised building standard control rules, which are crucial frameworks. These regulations serve as the cornerstone for building methods that shield the built environment from dangers and stop fatalities. Additionally, they are an institutional response to the increasing problems of urbanization, inadequate oversight, and subpar building practices that are now widespread in many areas (Adewuyi & Odesola, 2021).

The laws, rules, and regulations that specify how buildings should be planned, built, maintained, and utilized are together referred to as building standard control policies. These standards offer minimal specifications for environmental performance, fire safety, structural design, and materials (Olajide et al., 2023). Making sure buildings are structurally sound and able to sustain expected loads and environmental stressors is the goal. Building codes like the International Building Code (IBC) lay out basic principles that help engineers, architects, and builders ensure safety and quality throughout construction, according to the International Code Council (ICC, 2021). These rules are continuously updated to take into account new building materials, technological advancements, and emerging hazards like natural catastrophes and climate change.

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In order to make sure that building activities follow authorized designs and specifications, regulatory organizations also periodically check construction sites. Early identification of deviations or subpar procedures that can cause collapse is made possible by this inspection procedure. According to Adewale and Ogunbayo (2021), preserving structural integrity requires constant supervision and adherence to professional standards. However, because of a lack of funding, corruption, or manpower, such control is frequently insufficient in many underdeveloped countries. As a result, there is a greater chance of failure because many structures are built without the required approval or inspection. This is especially noticeable in quickly urbanizing cities where informal construction methods are common, resulting in shoddy materials, overloading of structures, and weak foundations (Ogunbiyi et al., 2023).

The integrity of the enforcement system is directly related to how well building standard control policies work. Building collapse incidences are considerably lower in areas with robust enforcement. For instance, Japan and Singapore have one of the lowest rates of building collapses in the world as a result of strict building rules and frequent structural audits (Yamamoto, 2020). On the other hand, in nations with lax enforcement, codes are merely in place on paper and are never put into practice. Political meddling, corruption, and a lack of technical expertise inside regulatory organizations frequently compromise the efficacy of policies, according to Omole and Adigun (2020). The goal of building regulation is undermined when building licenses can be acquired by bribery or connections, allowing dangerous structures to multiply.

The fact that some building codes are out of date presents another significant obstacle. Many developing nations continue to adhere to norms that do not take into account new

developments in engineering or address the environmental issues of the modern world. According to UN-Habitat (2020), increasing wind loads, flooding, and heat stress are only a few of the new stressors brought about by climate change that were not taken into account in previous codesIn order to handle new dangers and conform to international best practices, building codes must be reviewed and updated on a regular basis. There is also the matter of public awareness. The significance of adhering to building standards and the long-term consequences of forgoing expert oversight are not well understood by many developers and property owners. This lack of knowledge frequently results in the use of inferior materials and untrained labor, which leads to structures that are flawed (Okorie et al., 2023).

Despite these challenges, progress is being made in strengthening building control systems. Alade et al. (2022) noted that some governments are introducing digital permitting and monitoring systems to improve transparency and reduce corruption in the approval process. The adoption of Building Information Modeling (BIM) and other digital tools has also enhanced the ability of regulatory agencies to track compliance from design to completion. Furthermore, collaboration between local building authorities, professional councils, and environmental agencies has improved inter-agency coordination in some regions. However, more needs to be done to institutionalize accountability mechanisms that hold builders and regulatory officials responsible for negligence leading to collapse.

Effective implementation of building standard control policies requires consistency, openness, and sufficient financing. Regulatory agencies ought to be given the freedom to conduct impartial inspections free from political influence. For engineers, architects, and builders to stay proficient in contemporary building methods, regular professional training and certification upgrades are also essential (Okorie et al., 2023). Campaigns to educate the public about the value of adhering to established protocols can help to further encourage compliance. Mandatory structural audits are also required, especially for public and high-rise structures, in order to evaluate their safety throughout time and find any flaws that can cause them to collapse (Adewuyi & Odesola, 2021).

CONCLUSION

In conclusion, the persistent prevalence of building collapse in Nigeria reflects a complex interplay of factors including the use of substandard materials, poor construction practices, inadequate regulatory enforcement, and the engagement of unqualified personnel. These issues not only pose significant risks to human life and property but also undermine efforts toward sustainable urban development. Addressing this challenge requires a multifaceted approach involving strict enforcement of building codes, regular inspections, public awareness, and the consistent engagement of certified professionals throughout the building process. By implementing these mitigating strategies effectively, Nigeria can move toward a more resilient and sustainable construction industry, thereby ensuring safer built environments for its growing population.

RECOMMENDATIONS

1. It has become a necessity for the government agencies at the federal, state, and local levels should enforce the Nigerian Building Code rigorously. By this all building plans should be properly vetted, approved, and continuously monitored during construction to ensure compliance with structural and safety standards.
2. As a matter of importance only registered and certified architects, structural engineers, builders, and other professionals should be allowed to perform their respective

important roles in building construction such as design, supervision, execution of construction projects in order to deliver a quality service.

3. Regulatory bodies like COREN and ARCON should ensure that they crack down on the use of unqualified personnel as inexperience and inadequate knowledge is one of the causes of building failure.
4. Other institutions responsible for construction oversight must be well-funded, technically equipped, and independent enough to carry out site inspections, enforce penalties for violations, and shut down unsafe construction activities when necessary.

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