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Structural Failures and Development Control in Kenya:
A Regulatory and Institutional Analysis

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Abstract

Shelter is a fundamental human need, yet in many rapidly urbanising African cities, the pursuit of affordable housing has increasingly produced unsafe buildings and recurrent structural failures. In Kenya, frequent building collapses over recent decades have resulted in loss of life, injuries, displacement, and substantial economic losses. This paper examines the relationship between structural failures and development control in Kenya using a qualitative, desk-based analytical approach grounded in documentary and comparative review. It situates the Kenyan experience within broader global and regional urbanisation dynamics, reviews the contemporary statutory and institutional framework governing development control, and synthesises empirical and documentary evidence on the causes of building collapse. Drawing on comparative literature from Kenya, Nigeria, and wider urban studies, the paper identifies key drivers of failure, including weak regulatory enforcement, engagement of unqualified practitioners, rent-seeking and corruption, technical design and construction deficiencies, poor maintenance, and inadequate regulatory review. The analysis develops a conceptual framework that links regulatory architecture, institutional capacity, professional ethics, and developer behaviour to building performance outcomes. It advances policy-oriented recommendations to improve safety, accountability, and resilience in Kenya's construction sector.

Keywords: Building safety, structural failure, building collapse, development control, regulatory enforcement, construction governance, professional ethics, institutional capacity, urbanisation, Kenya

INTRODUCTION

Food, shelter, and clothing are universally recognised as basic human needs. Among these, shelter occupies a central place, providing physical protection, health, comfort, and a sense of identity, belonging, and social stability. Beyond its utilitarian function, housing is often imbued with symbolic meaning, representing social status, personal achievement, and long-term security. As Arora and Bindra (1984) observe, home ownership "binds one to soil, to community, ennobles, creates self-confidence, dignity, a sense of responsibility, security, civic sense and stable personal behaviour." Consequently, households frequently make substantial financial, social, and emotional investments in acquiring or constructing homes.

A building may be broadly defined as any structure—permanent, temporary, or movable—constructed for human use and comprising foundations, superstructure, and associated components (Arora & Bindra, 1984). These components must be properly designed, constructed, and maintained to ensure functional performance and structural safety. In principle, building performance is governed by an interrelated framework of planning, environmental, building, and maintenance laws, regulations, and standards, alongside economic considerations that influence decisions throughout the building lifecycle.

Building design and delivery are inherently multidisciplinary processes involving architects, engineers, planners, quantity surveyors, contractors, and regulatory authorities. Ideally, these processes should reconcile clients' social and economic aspirations with the broader public interest in safety, environmental sustainability, and orderly urban development.

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In many rapidly urbanising African contexts, however, including Kenya, this balance is increasingly compromised. Over the past three decades, Kenya has experienced a troubling rise in structural failures and building collapses, particularly within high-density, low-income urban areas. These incidents have resulted in loss of life, injuries, displacement, and significant economic losses, while exposing persistent weaknesses in regulatory frameworks, enforcement mechanisms, institutional capacity, and professional practice. Despite the existence of extensive planning and building regulations, limited scholarly attention has been given to how failures in development control systems contribute to recurrent building collapses in Kenya.

This paper addresses this gap by critically examining the relationship between structural failures and development control in Kenya. Specifically, it seeks to:

i. Situate Kenya's building failures within the broader global and regional context of urbanisation and informal housing;
ii. Review the legal and institutional framework governing development control and building regulation;
iii. Synthesise empirical and documentary evidence on the causes and patterns of building collapse in Kenya;
iv. Propose a conceptual framework linking regulatory architecture, professional ethics, institutional capacity, and enforcement to building performance; and
v. Outline policy- and practice-oriented recommendations aimed at reducing structural failures and enhancing safety, accountability, and resilience in Kenya's built environment.

While the National Building Inspectorate is examined in this study as a central institutional actor, the analysis situates its role within the broader development control and construction governance framework rather than treating it as the sole focus.

THEORY

Urbanisation, Housing, and Informal Development

This study is informed by urban governance theory, institutional capacity theory, and regulatory enforcement perspectives, which emphasise the role of state institutions, professional systems, and market actors in shaping development outcomes. Within this theoretical framing, rapid urbanisation is understood not merely as a demographic process, but as a governance challenge with direct implications for housing quality and public safety (Griffith, 2009; UN-Habitat, 2022). Urbanisation remains a defining global phenomenon of the twenty-first century, transforming spatial landscapes and reshaping economic, social, and environmental relations (Griffith, 2009; UN-Habitat, 2022). Cities continue to attract populations seeking employment, education, healthcare, and cultural opportunities. In developing countries, however, rapid and frequently unplanned urban growth has intensified long-standing challenges in housing provision, infrastructure development, environmental management, and public safety (O'Neill, Ren, Jiang & Dalton, 2012; World Bank, 2021).

Recent studies reinforce earlier findings that accelerated urbanisation is strongly associated with inadequate and poor-quality housing, proliferation of informal settlements, limited access to basic services, environmental degradation, congestion, unemployment, poverty, and heightened exposure to disaster risk (UN-Habitat, 2020; Satterthwaite et al., 2020). Although housing deficits are a global concern (Lawanson, 2005; Olotuah & Bobadoye, 2009), they are particularly acute in developing economies where institutional weaknesses, governance deficits, and enforcement failures persist (Fox & Goodfellow, 2021). In Nigeria, between 60 and 70 per cent of urban residents continue to live in informal or substandard conditions (Dung-Gwom & Oladosu, 2004; Akinwale, 2021). Comparable patterns of overcrowding, informal construction, and infrastructural inadequacy are evident in many Kenyan cities (UN-Habitat, 2022).

In Lagos, rapid population growth combined with escalating land and housing costs has pushed large segments of the population into informal settlements characterised by environmental degradation, absence of basic services, insecurity, and heightened exposure to health and safety risks (UN-Habitat, 2006; Adelekan et al., 2021). Over time, deteriorated buildings and marginal urban land often become targets for redevelopment by

higher-income groups, triggering gentrification and displacement (Nwanna, 2012; Lees et al., 2020). Similar dynamics are increasingly observable in Nairobi, Mombasa, Kisumu, and other Kenyan urban centres.

From a governance perspective, growing demand for housing and infrastructure places intense pressure on both the construction industry and regulatory systems. Recent scholarship shows that in contexts of weak regulation and high market pressure, developers frequently circumvent established procedures, bypass professional input, or deliberately violate planning and building regulations, resulting in structurally deficient buildings (Fox & Goodfellow, 2021; Amankwah-Amoah et al., 2022). As Nwanna (2012) argues and recent urban governance studies reinforce, sustainable improvement in housing quality requires not only technical solutions but also strong institutions, regulatory integrity, and political commitment (UN-Habitat, 2020).

Development Control and Regulatory Architecture in Kenya

Within regulatory governance theory, development control constitutes a primary mechanism through which the state manages urban growth and safeguards public safety. In Kenya, development control is constitutionally grounded and statutorily regulated. The Constitution of Kenya (2010) establishes a normative framework for the built environment. Articles 42 and 43(1)(b) guarantee the rights to a clean and healthy environment and to accessible and adequate housing. In contrast, Article 69 obligates the State to eliminate activities likely to endanger environmental integrity and public safety. Contemporary governance literature emphasises that such constitutional guarantees require effective implementation, enforcement, and institutional accountability to translate rights into safe built outcomes (World Bank, 2021).

Statutorily, development control is anchored in the Physical and Land Use Planning Act, 2019 (PLUPA), which operationalises constitutional principles within a devolved governance framework. County Governments are vested with authority over development permissions, compliance monitoring, and enforcement. Development control under PLUPA, therefore, represents a regulatory system that combines approval, inspection, and enforcement to promote orderly, sustainable, and safe development. The National Building Code, 2024, further modernises Kenya's regulatory architecture by introducing updated standards on structural safety, materials, fire protection, accessibility, and resilience. Recent studies caution, however, that updated codes alone do not guarantee improved safety outcomes in the absence of adequate institutional capacity, skilled personnel, and enforcement credibility (Amankwah-Amoah et al., 2022; UN-Habitat, 2022). Governance theory thus highlights the persistent gap between regulatory intent and regulatory practice.

Building Failures: International Evidence and Lessons

Recent international scholarship confirms that building failures in developing countries arise primarily from systemic governance, institutional, and ethical failures, rather than isolated technical errors (Windapo & Rotimi, 2021; Amankwah-Amoah et al., 2022). Studies from Nigeria, Ghana, and South Africa continue to document recurring patterns of unauthorised plan alterations, construction without professional designs, weak inspections, and corrupt approval processes (Oseghale et al., 2015; Windapo & Rotimi, 2021). A dominant theme across both earlier and recent literature is the absence or weakness of effective inspection and supervision regimes. Construction activities frequently proceed without qualified oversight, allowing unsafe practices to persist undetected until collapse occurs (Madu, 2005; Windapo & Rotimi, 2021). Material quality, workmanship, and professional competence remain critical risk factors. Hall (1984) and Oyewande (1992) identified these issues decades ago, and contemporary studies confirm their continued relevance in rapidly urbanising contexts (Amankwah-Amoah et al., 2022). Recent disaster-risk research further demonstrates how climate-related hazards—such as flooding and extreme weather—interact with weak regulation to exacerbate structural vulnerability (UNDRR, 2022). The consequences of building collapse remain profound, encompassing loss of life, displacement, economic losses, and erosion of public trust in regulatory institutions (Ede, 2010; UN-Habitat, 2020).

Occurrences and Patterns of Building Failures in Kenya

Evidence from Kenya mirrors international

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experience. Building collapses across Nairobi, Mombasa, Kiambu, Kisumu, and other counties reflect systemic regulatory and institutional failure, rather than isolated accidents. Official reviews and recent governance studies continue to highlight weak enforcement, proliferation of unqualified practitioners, bureaucratic and corrupt approval processes, and limited accountability mechanisms (Building Law and Regulation Review and Harmonisation Committee, 2009; World Bank, 2021). Mshiri (2016) and more recent policy analyses note that inadequate prosecution of offenders, collusion between officials and developers, and political interference perpetuate a culture of impunity within the construction sector. These patterns underscore the relevance of governance and institutional theories in explaining structural failure in Kenya.

Consistent with this governance-oriented interpretation, the National Construction Authority's sector research frames recurrent collapses as lifecycle failures distributed across design, approval, construction, occupation, and maintenance systems, rather than singular structural "accidents" (National Construction Authority [NCA], 2018). The NCA study highlights persistent breakdowns in design adequacy and quality assurance, including incomplete or poorly coordinated drawings, insufficient consideration of site conditions, and weak professional control over design outputs (NCA, 2018). It further identifies the approval stage as a high-risk governance bottleneck, in which disjointed institutional mandates, lengthy and costly procedures, non-adherence to stipulated requirements, and politically compromised decision-making contribute to illegal construction and weak preventive controls (NCA, 2018).

At the construction stage—where most collapses manifest—the NCA research identifies poor workmanship, substandard materials, systematic non-compliance with standards, and limited inspection and enforcement capacity within county governments as dominant proximate causes (NCA, 2018). The research also emphasises that collapse risk is amplified by unsafe occupation practices, particularly where buildings are occupied without final inspections and certificates of occupation, and by the absence of a binding national framework for post-construction inspection and routine maintenance (NCA, 2018). These findings reinforce the argument that Kenya's building failure problem is structurally embedded in regulatory practice and institutional performance across the whole development cycle.

A significant contribution to Kenya's evidence base on structural failure is the National Construction Authority's research on building failures and collapses, which synthesises systemic causes and proposes remedies structured along the project cycle—design, approvals, construction, completion/occupation, and maintenance—supported by institutional and policy reforms (NCA, 2018). Rather than attributing the collapse primarily to technical error, the study argues for a governance-and-lifecycle approach in which safety is produced through coordinated regulation, professional accountability, transparent approvals, competent construction practice, and enforceable post-occupancy controls (NCA, 2018).

At the strategic level, the NCA recommends urgent finalisation of an integrated national construction policy to reduce fragmentation, clarify institutional roles, and strengthen coordination across the sector, while also strengthening the NCA's regulatory instruments and investigative capacity to support prosecution and deterrence (NCA, 2018). At the institutional level, the study advocates stronger professional regulation and ethical enforcement, coupled with public accountability mechanisms such as reporting hotlines and sensitisation materials to support early detection and reporting of malpractices (NCA, 2018).

Along the project cycle, the NCA recommends mandatory design quality control (including independent accredited checkers), compulsory geotechnical investigations, streamlined and coordinated approvals through one-stop centres and digital systems, strengthened inspection regimes using standardised checklists and independent building control inspectors, mandatory construction logbooks, regulated equipment leasing, and compulsory material testing (NCA, 2018). To prevent unsafe occupation, the study recommends that buildings should not be occupied without final inspection and occupation certification, and it proposes a national maintenance framework requiring periodic post-construction inspections (e.g., five-year inspection cycles and critical inspections for older buildings),

supported by maintenance certification, building inventories, and early-warning mechanisms (NCA, 2018). Finally, the research calls for an evidence-based monitoring and evaluation system anchored in NCA's construction information mandate, including incident reporting protocols, evidence preservation procedures, public reporting portals, and investigation manuals that enable technical testing, attribution of culpability, and learning across the industry (NCA, 2018).

Institutional Responses to Building Safety Challenges in Kenya

Kenya's governance response to building safety challenges includes establishing a national oversight capacity to complement devolved development control. The National Building Inspectorate (NBI) was established in 2018 following a rise in building collapses and concerns over construction safety. It was created as a national technical arm to strengthen oversight of the built environment and to support county governments, which hold primary responsibility for development control under devolution. The NBI is anchored within the State Department for Public Works, under the Ministry of Lands, Public Works, Housing and Urban Development.

The Inspectorate comprises multidisciplinary professionals drawn from the public service, including registered architects, engineers, quantity surveyors, and building inspectors. These officers are regulated under their respective professional bodies and are deployed nationally. The composition is intentionally technical to ensure that inspections, investigations, and recommendations are grounded in professional standards and sound engineering judgment. The mandate of the NBI is to inspect buildings and construction works to ensure compliance with approved plans, building codes, and safety standards. It also investigates structurally unsound or collapsed buildings, advises on enforcement actions such as repairs, evacuations, or demolitions, and provides technical support to county governments. While the NBI does not replace county planning authorities, it provides an institutional mechanism to strengthen inspection capacity, intergovernmental coordination, and professional accountability within Kenya's construction governance system.

Theoretical Synthesis and Link to Conceptual Framework

Taken together, both classical and recent literature support a governance-centred interpretation of structural failure. Rapid urbanisation, when combined with weak regulatory institutions, limited enforcement capacity, compromised professional ethics, and intense market pressures, creates conditions under which unsafe buildings proliferate. This theoretical synthesis directly informs the conceptual framework adopted in this study, which links regulatory architecture, institutional capacity and enforcement, professional ethics and competence, and developer behaviour to building performance outcomes. The framework provides the analytical foundation for subsequent analysis and policy recommendations, emphasising that building safety is ultimately a product of governance effectiveness rather than technical design alone.

This conceptual framework illustrates that structural outcomes in Kenya's built environment are not determined solely by technical design, but by a chain of interrelated governance and market processes (**Figure 1**). Rapid urbanisation and housing demand generate market pressures that shape developer behaviour, particularly decisions regarding cost, compliance, and engagement of professionals. These decisions interact with the ethical conduct and technical competence of built-environment professionals, whose roles in design, supervision, and adherence to standards are critical to construction quality. Institutional capacity and enforcement mechanisms—through approvals, inspections, and accountability—mediate the effectiveness of regulatory frameworks such as the Constitution, the Physical and Land Use Planning Act, and the National Building Code. Weaknesses at any stage can cascade through the system, increasing the likelihood of partial failure or building collapse, while strong governance, ethical practice, and effective enforcement enhance the delivery of safe and compliant buildings.

RESEARCH METHODS

Research Design

This study adopts a qualitative, exploratory, and analytical research design grounded in doctrinal review, comparative analysis, and conceptual synthesis. The research is primarily desk-based, drawing on secondary data to interrogate the

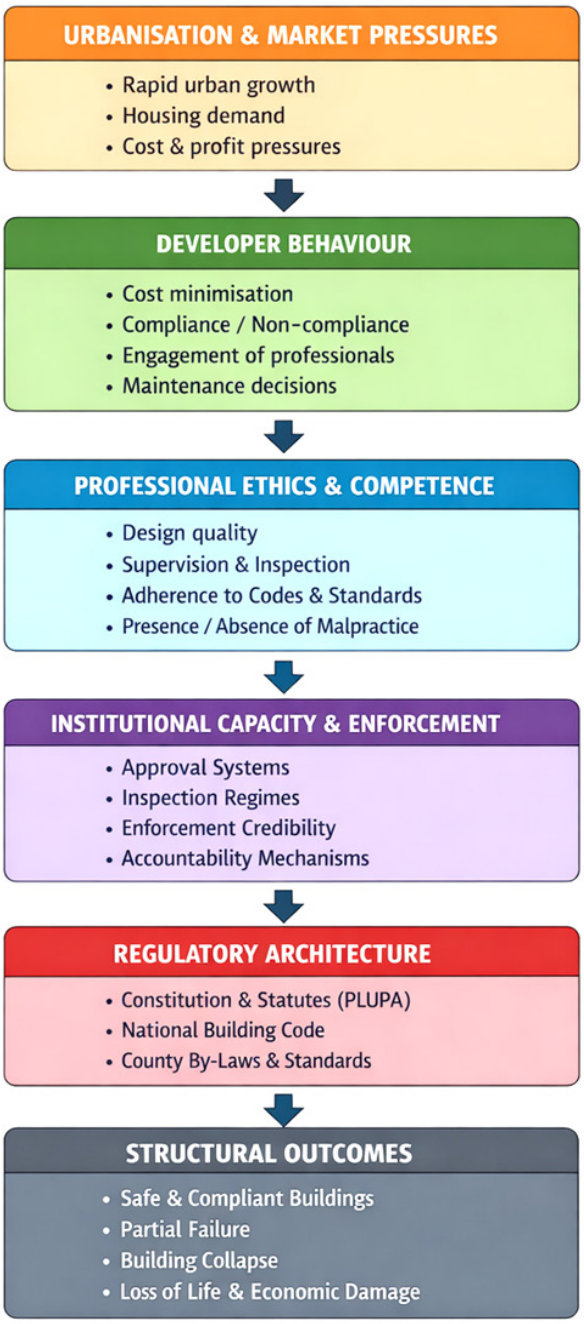

FIGURE 1
Conceptual framework linking regulation, governance, and professional practice to structural outcomes in Kenya's built environment
Source: Author's analysis, 2025

relationship between development control and structural failures in Kenya. This approach is appropriate given the study's objective of examining regulatory frameworks, institutional practices, professional ethics, and systemic drivers of building collapse, rather than measuring isolated technical or engineering variables.

Reliance on secondary data is treated as a methodological strength rather than a limitation, as it enables systematic examination of legal instruments, institutional practices, documented collapse cases, and comparative experiences across jurisdictions. Such an approach is particularly suited to governance-oriented research, where

regulatory intent, enforcement practices, and institutional performance are best analysed through documentary and legal sources.

The study is anchored in an interpretive qualitative paradigm, recognising that building failures emerge from complex interactions among legal, institutional, professional, and socio-economic factors that cannot be adequately explained through purely quantitative techniques.

Data Sources

The research relies on multiple complementary secondary data sources to enhance depth, triangulation, and analytical robustness.

Statutory and policy documents include the Constitution of Kenya (2010), the Physical and Land Use Planning Act (2019), the National Building Code (2024), subsidiary legislation, policy papers, and official government reports relevant to development control, building regulation, and enforcement.

Academic and professional literature comprises peer-reviewed journal articles, books, conference papers, and postgraduate theses that address urbanisation, housing, informal development, construction regulation, governance, and structural failures. Comparative studies from Kenya, Nigeria, and other developing-country contexts were reviewed to situate the Kenyan experience within broader international patterns and governance debates.

Official reports and inquiries, including those of the Building Law and Regulation Review and Harmonisation Committee (2009), sectoral assessments, and regulatory reviews, provided empirical insights into systemic weaknesses, enforcement gaps, and institutional challenges within Kenya's construction sector.

Media and documentary records, particularly newspaper reports on building collapses, were analysed to identify recurring patterns, affected locations, failure typologies, and institutional responses across different counties. These sources were used cautiously and primarily to corroborate trends identified in official and academic materials.

Analytical Approach

Data analysis was conducted through thematic qualitative content analysis and comparative synthesis. The analytical process proceeded in four interrelated stages.

First, documentary and literature sources were systematically reviewed and coded around recurring themes, including regulatory enforcement, professional competence, developer behaviour, inspection regimes, material quality, and institutional capacity.

Second, international case studies—particularly from Nigeria—were compared with the Kenyan context to identify shared drivers of structural failure and context-specific variations, enabling identification of structural similarities across rapidly urbanising environments.

Third, a legal–institutional analysis examined the coherence between constitutional principles, statutory provisions, technical regulations, and actual implementation practices at national and county levels, with particular attention to approval processes, inspection regimes, and enforcement mechanisms.

Finally, insights from the literature review, legal analysis, and documentary evidence were synthesised to develop a conceptual framework linking regulatory architecture, institutional capacity and enforcement, professional ethics, and developer behaviour to building performance outcomes.

To enhance analytical credibility and trustworthiness, findings were cross-checked across multiple source types, and interpretations were grounded consistently in established literature, statutory provisions, and documented empirical evidence.

Scope and Limitations

The study focuses primarily on urban building failures in Kenya, with particular emphasis on multi-storey residential and mixed-use developments where collapse risks and consequences are most severe. While the analysis draws on documented cases from multiple counties, it does not involve primary field investigations, structural testing, or forensic engineering analysis of individual collapse sites.

Accordingly, the findings emphasise systemic,

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institutional, and governance-related drivers rather than project-specific technical faults. This limitation is deliberate and consistent with the study's objective of informing regulatory reform, professional practice, and policy development rather than attributing liability in individual cases.

Ethical Considerations

The study relies exclusively on publicly available documents, published literature, and secondary data sources. No human subjects were involved, and no confidential or proprietary information was accessed. Ethical integrity was maintained through accurate citation, faithful representation of sources, and objective and transparent analysis of evidence.

RESULTS

Institutional Framework for Building Safety and Development Control in Practice

The findings confirm that Kenya's building safety governance operates through an interlinked institutional framework spanning devolved county structures, national regulatory agencies, professional bodies, and enforcement institutions. At the county level, physical planning departments, building control units, and engineering departments function as the primary approval and development control authorities, responsible for granting permissions, verifying submissions, and monitoring compliance. National institutions—particularly the National Construction Authority (NCA) and the National Building Inspectorate (NBI)—provide complementary oversight through project registration requirements, technical inspection support, investigations, and multi-agency coordination, especially in high-risk or collapsed structures. Professional regulatory systems also form part of the institutional framework by governing the conduct, competence, and accountability of built-environment practitioners. Finally, enforcement and deterrence are shaped by the broader accountability chain, which includes county inspectorates, law enforcement agencies, and the judiciary, whose mandates collectively influence whether non-compliance is detected, sanctioned, and prevented from recurring.

Within this institutional architecture, building safety outcomes depend not only on the existence of institutions but also on how well mandates are executed through routine approvals, inspections, supervision, enforcement actions, and accountability procedures. The results presented below therefore distinguish between the institutional framework itself and the operational practices through which its successes and failures become visible.

Administration of Roles, Procedures, and Codes: Evidence of Successes and Failures

Regulatory Practice Evidence from National Oversight

Evidence from national oversight interventions demonstrates both active regulatory engagement and persistent systemic non-compliance. According to Business Daily (2024), the National Building Inspectorate conducted a nationwide building safety audit during the 2023/2024 financial year, inspecting 1,333 buildings across multiple counties. Only 570 buildings were found to be structurally safe, while 246 were classified as unsafe and 42 were deemed dangerous, requiring urgent interventions such as evacuation, structural testing, or demolition. These results illustrate institutional success in conducting structured audits and classifying risk, while simultaneously revealing widespread failure to comply with approved plans and minimum safety standards.

Large-scale inspection data reported elsewhere similarly indicate that inspection interventions have identified thousands of unsafe structures and triggered demolitions and remediation actions, demonstrating corrective capacity. However, the scale of dangerous buildings, especially in high-density urban areas, also indicates that enforcement systems remain substantially reactive, often identifying risk after unsafe construction has advanced or become occupied.

Investigations following major collapses further reveal common practice failures across institutions and professionals. In the aftermath of the collapse of an eleven-storey building in Mombasa, Kenya News Agency (2023) reports that the NBI participated in a multi-agency investigation, which identified design deficiencies, inadequate supervision, misuse of professional credentials, and non-compliance with construction standards as key causal factors. The controlled demolition of the remaining structure demonstrates operational enforcement capacity, yet the findings highlight

recurring breakdowns in pre-construction review, on-site supervision, and professional accountability.

Building Collapse Incidents and Official Findings in Selected Kenyan Counties

County-level incidents provide detailed evidence of how institutional mandates are administered in practice and where enforcement systems succeed or fail. In many cases, official findings reveal patterns of non-registration, ignored stop-work orders, weak supervision, poor workmanship, and delayed enforcement actions, suggesting that regulatory intervention frequently occurs after structural failure rather than through preventive monitoring.

1. Kisii County

Case 1: Itierio/Suneka – Four-storey building under construction (April 2025)

Incident: A four-storey building under construction collapsed in the Itierio area, resulting in fatalities and injuries and raising public safety concerns due to its proximity to a primary school (Kenyans.co.ke, 2025).

Reported findings: Preliminary NCA findings indicated that the project was not registered with the Authority and had previously been issued with a stop-work order that was ignored. Initial assessments pointed to poor workmanship and possible overloading of upper floors with construction materials (Kenyans.co.ke, 2025).

Regulatory action: The site was cordoned off, investigations were initiated, and enforcement action against the developer was announced, including possible prosecution for non-compliance (Kenyans.co.ke, 2025).

Case 2: Kisii South – Residential building under construction (April 2025)

Incident: A separate building under construction collapsed in Kisii South Sub-County earlier in April 2025 (Kenyans.co.ke, 2025).

Reported findings: NCA reports indicate that the project was suspended in 2021 due to regulatory non-compliance and a lack of registration, but construction resumed without official clearance, reflecting weaknesses in compliance enforcement (Kenyans.co.ke, 2025).

Regulatory action: Works were suspended and investigations initiated, alongside renewed emphasis on mandatory project registration and routine inspections (Kenyans.co.ke, 2025).

2. Kiambu County

Case 1: Ruiru – Multi-storey building collapse (November 2022)

Incident: A multi-storey residential building under construction collapsed, causing fatalities and injuries (BBC News, 2022).

Reported findings: County officials attributed the collapse to poor workmanship and non-compliance with construction standards, with reports indicating construction continued despite earlier warnings and enforcement attempts (BBC News, 2022).

Regulatory action: The county ordered audits of similar developments, temporarily halted nearby construction, and initiated investigations targeting developers and supervising professionals (BBC News, 2022).

Case 2: Ruiru (OJ Area) – Nine-storey building under construction (October 2021)

Incident: A nine-storey building under construction collapsed in the OJ area, causing extensive property damage (Nation Media Group, 2021).

Reported findings: Although a detailed technical report was not publicly released, authorities confirmed multi-agency investigations focusing on structural integrity, supervision, and approval processes (Nation Media Group, 2021).

Regulatory action: Construction activities in the vicinity were halted, and safety assessments were conducted on adjacent buildings to prevent secondary failures (Nation Media Group, 2021).

3. Nairobi County

Case 1: Uthiru (Naivasha Road) – Five-storey apartment building (May 2024)

Incident: A five-storey apartment building collapsed along Naivasha Road in Uthiru (NCA, 2024).

Reported findings: The NCA reported that

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ground-floor columns failed, causing lower floors to collapse while upper floors remained partially intact, with column weakness identified as the primary failure mechanism pending further forensic analysis (NCA, 2024).

Regulatory action: A controlled demolition was ordered, and investigations were launched to determine professional and regulatory responsibility (NCA, 2024).

Case 2: Kasarani – Multi-storey building under construction (November 2022)
Incident: A multi-storey building under construction collapsed in Kasarani (Standard Media Group, 2022).

Reported findings: The NCA stated that the building was non-compliant and identified structural faults during an inspection conducted hours before the collapse, highlighting column defects as a major concern (Standard Media Group, 2022).

Regulatory action: Arrests were made, area construction sites were audited, and enforcement measures intensified against non-compliant developments (Standard Media Group, 2022).

4. Mombasa County

Case 1: Bondeni/Mvita – Eleven-storey building collapse (April 2025)
Incident: An eleven-storey building under construction collapsed in Bondeni, prompting evacuations and subsequent demolition (Kenya News Agency, 2025).

Reported findings: A multi-sectoral task force led by the NBI reported that deficiencies originated at the design stage and were compounded by misuse of professional credentials, weak supervision, and regulatory lapses (Kenya News Agency, 2025).

Regulatory action: The remaining structure was demolished, several county officials were suspended, and construction on multiple high-rise projects was halted pending integrity audits (Kenya News Agency, 2025).

Case 2: Majengo – Seventeen-storey building under construction (November 2024)
Incident: A seventeen-storey building under construction collapsed in Majengo (Standard Media Group, 2024).

Reported findings: Preliminary investigations suggested soil instability and saturation, possibly linked to a nearby soak pit, contributed to the collapse despite the project reportedly having statutory approvals (Standard Media Group, 2024).

Regulatory action: The site was sealed, detailed geotechnical investigations were ordered, and reviews of soil testing requirements for high-rise buildings were recommended (Standard Media Group, 2024).

Roles of Key Construction Industry Participants in Preventing Structural Failures
Beyond incident-level evidence, the results show that building safety outcomes arise from the interaction of multiple actors across the development control and construction chain. Structural failures are rarely the product of isolated errors; instead, they emerge from cumulative weaknesses across approval, design, construction, development, and enforcement stages. Each participant, therefore, both contributes to risk and holds specific leverage for prevention.

Approving Authorities (Building and Engineering Approval Agencies)
Failures in practice: County physical planning departments, building control units, engineering departments, and specialised approval agencies play a gatekeeping role. Approval-related failures commonly stem from capacity constraints and governance deficits, including approval of incomplete or deficient drawings, inadequate scrutiny of soil investigation reports and structural calculations, inconsistent verification of professional credentials, and selective enforcement of zoning and development conditions. Bureaucratic procedures may also create opportunities for rent-seeking, undermining regulatory integrity.

Prevention leverage: Strengthening technical review capacity through qualified personnel, introducing mandatory independent peer review for complex buildings, institutionalising pre-construction audits, digitising approvals, and publicly disclosing approved projects and responsible professionals were identified as key mechanisms for transparency, deterrence, and

safety improvement.

Clients (Developers and Building Owners)
Failures in practice: Structural failures are frequently associated with developer-driven cost minimisation, including pressuring consultants to reduce specifications, engaging unqualified practitioners, commencing works without statutory approvals, and neglecting post-occupation maintenance, thereby shifting risk to occupants and the public.

Prevention leverage: Improved outcomes are linked to engaging registered professionals, allocating adequate budgets, respecting professional advice, maintaining buildings, and rejecting bribery and procedural shortcuts.

Consultant Teams (Architects, Engineers, Planners, Quantity Surveyors, and Project Managers)
Failures in practice: Risk increases where consultants produce deficient designs, conduct inadequate geotechnical investigations, fail to supervise works, or yield to pressure to approve unsafe changes. Limited engagement with evolving codes and standards contributes to skill stagnation and weak compliance.

Prevention leverage: Prevention depends on strict adherence to professional codes of conduct, comprehensive investigations, rigorous design review, continuous supervision, ongoing professional development, and stronger interdisciplinary coordination to reduce design–construction conflicts.

Construction Teams (Contractors, Site Managers, Fundis, and Artisans)
Failures in practice: Common practice failures include deviations from approved drawings, poor workmanship, use of substandard materials, falsification of test results, and weak site supervision, often worsened by the use of unskilled labour for structurally sensitive work.

Prevention leverage: Stronger compliance requires adherence to approved designs, skilled artisans, certified materials, routine quality-control testing, documentation of works, and constructive collaboration with consultants during supervision.

Legal Enforcement Institutions (County Inspectorate, NCA, Police, Judiciary)
Failures in practice: Enforcement failures remain a critical weak link, including infrequent or compromised inspections, ineffective stop-work orders, limited prosecution, political interference, and fragmented mandates across agencies.

Prevention leverage: Results indicate that credible enforcement requires coordinated inter-agency action, enhanced penalties, prompt execution of stop-work and demolition orders, judicial prioritisation of public safety cases, establishment of a national building safety database, and strengthened public reporting mechanisms.

Integrated Framework for Shared Responsibility
The results affirm that building collapses in Kenya are not the product of isolated technical errors but systemic failure across the construction value chain. Sustainable prevention, therefore, requires a collaborative reform model structured around four mutually reinforcing pillars: (1) competent design and professional integrity; (2) quality construction and skilled execution; (3) ethical and compliant development practices; and (4) vigorous enforcement and regulatory oversight. Each participant holds both responsibility and agency in breaking the cycle of structural failure.

Table 1 summarises the key construction industry actors identified in the study, highlighting their contributions to structural failure alongside the corresponding roles they can play in preventing collapse across the development control and construction process.

DISCUSSION

Grounded in earlier governance and institutional analyses (Hall, 1984; Ede, 2010), the findings confirm the central proposition advanced in the theoretical and conceptual sections: technical regulations alone are insufficient to guarantee building safety. Instead, structural outcomes are shaped by the interaction of regulatory architecture, institutional capacity, professional ethics, and market-driven developer behaviour. Building safety, therefore, reflects how regulatory systems operate in practice rather than the mere existence of technical standards.

TABLE 1
Summary of actors, failure pathways, and prevention roles

Actor	Key Contributions to Structural Failure	Key Prevention Roles
Approving Authorities	Approval of deficient designs; weak scrutiny; inconsistent enforcement; rent-seeking	Rigorous technical review; peer review; audits; digitised and transparent approvals
Developers / Clients	Cost-cutting, use of unqualified practitioners, illegal construction, and poor maintenance	Engage registered professionals; allocate adequate budgets; comply with approvals; and maintain buildings.
Consultant Teams	Deficient designs, inadequate investigations, weak supervision, and ethical compromise	Ethical practice; sound design; continuous supervision; professional development
Construction Teams	Poor workmanship, substandard materials, and deviations from drawings	Skilled labour; certified materials, quality control, and compliance with designs
Enforcement Institutions	Weak inspections, ineffective sanctions, and fragmented mandates	Coordinated enforcement, penalties, stop-work orders, prosecution, and public reporting

Source: Authors' analysis, 2025

The NCA's lifecycle diagnosis reinforces this governance thesis by showing that collapse risk is not produced at a single point, but accumulates across linked decision nodes—design adequacy and site investigation, approval integrity and coordination, construction workmanship and material controls, and post-occupancy certification and maintenance enforcement (NCA, 2018). In this sense, collapses are best interpreted as "governance chain failures," where weaknesses at early regulatory checkpoints (design/approval) propagate into downstream construction defects and unsafe occupation, especially under conditions of limited inspection capacity and weak deterrence.

Consistent with observations by Oseghale, Ikpo, and Ajayi (2015), the results demonstrate that weaknesses in development control are less about the absence of laws and more about deficits in implementation and enforcement. Despite a relatively robust statutory framework anchored in the Constitution of Kenya (2010), the Physical and Land Use Planning Act (2019), and the National Building Code (2024), approval and enforcement institutions frequently lack the technical capacity, resources, and integrity required to perform their mandates effectively. While some explanations attribute collapse primarily to design or material failure, earlier studies on inspection regimes and regulatory capture (Madu, 2005) suggest that such technical problems are often downstream consequences of weak enforcement systems.

The approval stage emerges as a critical institutional chokepoint. The NCA's recommendation for a coordinated one-stop approval system—linking county governments, NEMA, and NCA—highlights how fragmented mandates and disjointed procedures create enforcement gaps, transaction costs, and opportunities for manipulation (NCA, 2018). Digitisation and integration of Building Information Management are therefore not merely efficiency measures but governance reforms that can reduce discretion, improve traceability of decisions, and strengthen auditability of approvals and subsequent compliance checks.

As argued in studies on urban redevelopment and governance pressure (Nwanna, 2012), the discussion highlights the central role of ethics and power asymmetries within the construction process. Developers' financial dominance often enables cost-driven decision-making that undermines safety, while consultants and inspectors face pressure to compromise standards. Although rapid urbanisation and market forces

are frequently cited as primary drivers of non-compliance, evidence from professional practice shows that ethical compromise and collusion significantly shape how these pressures manifest in unsafe construction outcomes (David, 2009).

Evidence from construction-quality studies (Oyewande, 1992) further supports the finding that failures are rarely attributable to a single actor. Instead, they result from cascading breakdowns across approval, design, construction, and enforcement stages. International case studies reinforce this interpretation, demonstrating that building collapse reflects cumulative system failure rather than isolated professional negligence (Oseghale et al., 2015). The proposed conceptual framework is therefore validated in conceptualising building safety as an emergent outcome of system-wide interactions.

Drawing on Kenyan regulatory reviews (Building Law and Regulation Review and Harmonisation Committee, 2009), the results underscore the importance of enforcement credibility. Where violations go unpunished, or enforcement actions are inconsistent, non-compliance becomes normalised, fostering a culture of impunity. Similar patterns identified by Mshiri (2016) indicate that weak prosecution and political interference undermine deterrence and embolden unsafe construction practices. Strengthening prosecution, penalties, and public transparency thus functions not only as a legal requirement but also as a behavioural signal that reshapes industry norms.

A further implication of the NCA evidence is that enforcement credibility depends not only on routine inspection but also on the certainty of post-incident accountability. The NCA recommends strengthening investigative powers and developing deeper collapse investigation procedures capable of identifying culpability across the project chain, coupled with prosecution pathways that move beyond symbolic enforcement to credible deterrence (NCA, 2018). This strengthens the paper's argument that impunity is institutional rather than incidental: when investigation capacity is weak, or outcomes are not publicly communicated, collapses become normalised as episodic "accidents" rather than as sanctionable governance failures.

The findings also suggest that Kenya's safety governance remains construction-centric, with comparatively weak post-occupancy controls. NCA (2018) identifies the occupation certificate and maintenance regime as missing "end-stage" regulatory safeguards, arguing that unsafe occupation without final inspection and the absence of mandatory periodic inspections allow latent defects to mature into failure. This supports the broader conclusion that safety must be treated as a lifecycle governance outcome—requiring enforceable completion certification, routine maintenance inspections, and an institutionalised early-warning approach, rather than relying solely on design compliance and construction-phase inspection.

Overall, consistent with broader urban safety and governance literature (UN-Habitat, 2006; Ede, 2010), the discussion reinforces the need for a shared-responsibility governance model in which safety is collectively produced through competence, ethics, accountability, and coordinated institutional action. Sustainable reduction of structural failures in Kenya, therefore, depends on integrated reforms across regulatory institutions, professional practice, and enforcement systems, rather than reliance on technical regulation alone.

CONCLUSION

This study set out to examine the relationship between structural failures and development control in Kenya, situating recurrent building collapses within broader processes of urbanisation, governance, and institutional practice. The findings demonstrate that structural failures in Kenya's built environment are not primarily the result of isolated technical errors, but rather the outcome of systemic weaknesses across regulatory, professional, and enforcement systems.

The analysis confirms that while Kenya possesses an extensive constitutional, statutory, and technical framework governing building development, persistent gaps in implementation, institutional capacity, professional ethics, and enforcement credibility undermine building safety. Weak development control, compromised professional practice, cost-driven developer behaviour, and ineffective enforcement interact in cumulative ways, producing conditions under

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which unsafe buildings are approved, constructed, and occupied.

Notably, the study establishes that responsibility for structural failure is distributed across the construction value chain. Approval authorities, developers, consultants, contractors, and enforcement institutions each play a role in both failure prevention and failure mitigation. Building safety, therefore, emerges as a governance outcome shaped by the interaction of regulatory architecture, institutional capacity, professional competence, and ethical conduct, rather than by compliance with technical standards alone.

Overall, the study concludes that reducing structural failures in Kenya requires a shift from narrowly technical approaches toward an integrated governance model grounded in accountability, ethical practice, institutional coordination, and sustained enforcement. Without such a systemic approach, regulatory reforms and updated building codes are unlikely to translate into safer construction outcomes.

RECOMMENDATIONS (Policy Implications)

Evidence from Kenya and comparable developing-country contexts indicates that reducing building failures requires a coordinated, multi-pronged approach that extends beyond technical prescriptions. The following recommendations are organised by actor and time horizon, while remaining closely aligned with the study's findings.

To align reforms with the empirically documented failure chain, policy interventions should be structured along the project lifecycle—design, approvals, construction, completion/occupation, and maintenance—while being supported by cross-cutting institutional reforms in investigations, accountability, and public reporting.

Short-Term Priorities (Immediate to 2 years)

Strengthening Inspections and Enforcement
Regular, systematic inspections at all stages of construction—from excavation and foundations to superstructure and finishes—should be prioritised. Non-compliance must attract timely and proportionate sanctions, including stop-work orders, fines, licence suspension, and, where necessary, demolition of unsafe structures. Enforcement measures should apply consistently to both developers and professionals who violate regulations.

Strengthening Preventive Controls at the Design and Approvals Stages
Immediate reforms should include mandatory design quality assurance mechanisms—such as independent accredited checkers for complex projects—and compulsory geotechnical investigations to ensure structural designs properly reflect site conditions (NCA, 2018). In parallel, approval integrity can be strengthened through inter-agency coordination models (one-stop centres) and digitised approval trails that reduce discretion and strengthen accountability.

Enhancing Professional Ethics and Accountability
Professional bodies should immediately strengthen enforcement of codes of conduct and disciplinary procedures against malpractice. Public awareness initiatives can help clients and communities distinguish qualified professionals from unqualified practitioners, reducing reliance on informal or unregulated actors.

Improving Construction Traceability and Quality Control
Construction-stage governance should require enforceable documentation and testing regimes. NCA (2018) recommends mandatory construction logbooks approved by consultants, compulsory materials testing as a standard requirement, and regulation of equipment leasing to formalise accountability for plant and machinery used on sites. These instruments strengthen traceability and reduce common failure pathways linked to undocumented variations, poor workmanship, and substandard inputs.

Medium-Term Interventions (2–5 years)

Strengthening Institutional Frameworks
Regulatory institutions should be adequately staffed, trained, and resourced to fulfil their mandates effectively. Clear delineation of roles and coordination between national agencies and County Governments is critical. Streamlining approval and licensing processes—potentially through consolidating overlapping functions and expanding the use of digital platforms—can reduce bureaucratic delays and opportunities for

rent-seeking.

County enforcement capacity can be strengthened by institutionalising independent building control inspectors—registered architects, engineers, and planners—supported by standardised inspection checklists and coordinated inspections filed into enforcement units for action (NCA, 2018). This approach expands technical inspection capacity while improving consistency, documentation, and accountability across jurisdictions.

Ensuring the Quality of Materials and Construction

Structural safety depends fundamentally on the quality of materials and workmanship. Government agencies should intensify regulation of material standards, market surveillance, and certification processes. Where appropriate, fiscal and regulatory incentives can discourage the use of substandard materials. At the same time, developers should be sensitised to the long-term economic, legal, and reputational risks associated with cost-cutting at the expense of quality.

Enforcing Completion Certification and Safe Occupation Controls

To reduce exposure of occupants to hazardous buildings, occupation should be legally conditional on final inspection and issuance of occupation certificates (NCA, 2018). This shifts enforcement from reactive post-collapse responses toward preventive occupancy control, especially for multi-storey residential and mixed-use buildings.

Long-Term Structural Reforms (5 years and beyond)

Updating Codes and Legal Frameworks

Building codes and related legislation should be reviewed periodically to reflect advances in materials, construction technologies, design methods, and risk management. Adoption of international standards should be accompanied by sustained training, dissemination, and institutional support to ensure effective implementation and compliance.

Institutionalising Post-occupancy Safety through Maintenance Law

Long-term safety reform requires a legal and institutional framework for mandatory post-construction inspections and maintenance. NCA (2018) proposes routine inspections every 5 years, critical inspections for older buildings (e.g., 30+ years), the issuance of maintenance certificates, and the establishment of national building inventories and early-warning mechanisms. Embedding these provisions in law would address the currently weak post-occupancy governance gap, allowing deterioration and latent defects to accumulate unchecked.

Strengthening Public Awareness and Community Surveillance

Communities and residents' associations should be institutionalised as complementary actors in development control. Public education campaigns on building safety, development rights, and complaint mechanisms can empower citizens to report unsafe construction and reinforce regulatory oversight over the long term.

Building failure monitoring and transparency should be formalised through incident reporting protocols, evidence protection procedures, and publication of investigation outcomes on a public portal (NCA, 2018). Developing a standardised investigation manual—with provisions for technical testing, experimentation, and attribution of culpability—would strengthen learning, deterrence, and regulatory credibility while enabling systematic feedback into codes, approvals, and enforcement practice.

Overall Policy Implication

Taken together, these recommendations emphasise that improving building safety in Kenya requires coordinated action across institutional, professional, and societal domains. Technical standards must be reinforced by ethical practice, institutional capacity, and credible enforcement. A phased, actor-specific approach to reform offers the most realistic pathway to translating regulatory intent into safer, more resilient built environments.

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