

A Review of Ethics in Housing Estate Maintenance: Challenges and Best Practices

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ABSTRACT

Housing estate maintenance is important in ensuring sustainable urban living by upholding safety, functionality, and environmental quality. However, ethical challenges—such as financial mismanagement, safety negligence, environmental irresponsibility, and regulatory noncompliance—continue to undermine effective maintenance practices. This study critically examines these ethical concerns, highlighting their impact on resident well-being, stakeholder trust, and long-term urban sustainability. This study employed the concept of sustainable development as a lens for this paper. A narrative literature review approach was adopted, drawing from peer-reviewed journals, policy documents, and case studies to assess existing maintenance practices. Findings reveal that unethical estate management practices, including lack of financial transparency, use of substandard materials, exclusionary decision-making, and poor waste management, contribute to deteriorating infrastructure, resident dissatisfaction, and environmental degradation. Best practices for ethical maintenance include transparent financial policies, regulatory compliance, resident engagement, and the integration of sustainable maintenance strategies. This study underscores the need for inclusive governance, sustainability-driven policies, and stricter enforcement of ethical guidelines to enhance housing estate maintenance and ensure long-term urban resilience.

Keywords: regulatory compliance, facility management, sustainable housing, resident satisfaction, building safety

1. INTRODUCTION

Housing estate maintenance is a crucial component of sustainable urban management, ensuring that residential environments remain safe, functional, and conducive to quality living. The quality of housing maintenance significantly impacts the physical conditions of the built environment, as well as the social, economic, and psychological well-being of residents. While maintenance practices have traditionally been viewed from a technical and managerial

perspective, recent scholarship highlights the growing need for ethical lapses in estate management (Makinde, 2017). Ethics plays a fundamental role in determining the transparency, fairness, and sustainability of maintenance activities, affecting stakeholder trust and the long-term viability of residential communities (Bowen et al., 2007).

Ethical dimensions of housing estate maintenance extend beyond ensuring infrastructural upkeep to include issues of financial transparency, accountability, quality assurance, environmental sustainability, and respect for resident rights (Chidi et al., 2017). Unfortunately, unethical maintenance practices such as fund mismanagement, use of substandard materials, privacy violations, and noncompliance with safety regulations are prevalent in many housing estates, particularly in developing countries (Ogunbayo et al., 2022). These unethical behaviours not only reduce the quality of housing infrastructure but also lead to conflicts between estate managers and residents, erode trust, and compromise public safety (Odediran et al., 2012).

In addition to infrastructural upkeep, ethical housing maintenance encompasses landscape management, which significantly influences environmental quality and resident well-being. Studies have shown that well-maintained landscapes enhance aesthetics, promote relaxation, and improve concentration in living environments (Thompson, 2011; Umeora et al., 2023). Despite these benefits, many housing estates in developing countries suffer from poor landscaping due to inadequate funding and neglect, ultimately diminishing the overall residential experience. Ethical maintenance practices must therefore integrate landscape management as a key aspect of housing estate upkeep, ensuring not only functional spaces but also visually and psychologically enriching environments.

Moreover, as urban populations grow and climate change exacerbates environmental challenges, ethical maintenance must also align with sustainability principles. Research on climate adaptation in built environments highlights the importance of integrating passive cooling techniques, appropriate material choices, and shading solutions to ensure long-term environmental sustainability (Odoh et al., 2025; Echeta et al., 2023a; 2023b; Elaouzy & El Fadar, 2022). Housing estates, like other large-scale developments, must adopt climate-responsive maintenance practices that mitigate excessive heat gain, reduce energy dependence, and improve indoor comfort for residents. These approaches not only enhance environmental responsibility but also reduce long-term operational costs, making them both an ethical and practical necessity in estate management.

Existing research on housing maintenance has largely focused on technical solutions, financial models, and policy regulations (Olanrewaju & Abdul-Aziz, 2015; Olotuah, 2015). However, there is limited scholarship on the ethical

challenges faced in estate management, particularly in the context of developing nations like Nigeria (Makinde, 2017). While studies have examined ethics in related fields such as construction management and urban governance, few have explored the intersection of ethics and maintenance in housing estates. This gap in knowledge leaves a critical lack of established ethical frameworks that estate managers and policymakers can use to guide maintenance operations.

This review aims to synthesize existing literature on ethical challenges in housing estate maintenance, focusing on key issues such as financial mismanagement, regulatory non-compliance, safety neglect, and environmental sustainability. Additionally, it explores best practices that can guide ethical maintenance operations, ensuring that housing estates promote social responsibility and long-term viability. Insights from this study will provide a framework for ethical decision-making in housing maintenance, supporting policymakers, estate managers, and residents in fostering a more inclusive, transparent, and sustainable housing environment.

2. CONCEPT OF SUSTAINABLE DEVELOPMENT AND HOUSING ESTATES

Housing estates can be dated to the early 20th century during the period of urbanization and industrialization when demand for housing increased significantly. As a result, governments and private developers started building massive housing projects to accommodate the inflating population. A housing estate is a self-contained piece of land that functions as a community. One of the earliest examples of a housing estate is the Garden City movement in the United Kingdom, which sought to design communities to be self-sufficient knots that contained a mixture of living spaces, industries, and public recreation spaces (Howard, 1902). In recent times, housing estates have evolved to include diverse social, economic, and environmental issues. Today, housing estates continue to play a crucial role in urban planning and development, with a growing emphasis on creating inclusive, diverse, and sustainable communities (UN-Habitat, 2016).

Housing estates of various designs and purposes have been built around the world. An example is the Barbican Estate in London, UK, built in the 1960s and 70s as a high-density urban living model. It features a set of residential towers, a school, an arts centre, and green areas, demonstrating a successful blend of mixed-use development and Brutalist architecture (Han & Kurniawan, 2018).

Another example is seen in the HDB estates in Singapore, where more than 80% of the population lives in public housing managed by the Housing and Development Board (HDB) (HDB, 2020). These are designed with an emphasis on community living, incorporating amenities such as schools, parks, and shopping centres within walking distance. The HDB estates have evolved over the years, with newer developments incorporating eco-friendly features and

innovative designs to promote sustainability and enhance residents' quality of life (HDB, 2020).

Sustainable development within Nigeria's housing estates necessitates the equilibrium of social, economic, and environmental priorities to ensure enduring viability, which encompasses the proficient maintenance of resources, active community participation, and the adoption of ethical construction practices, all of which are consistent with the tenets of sustainable development (Jegede et al., 2023). Nevertheless, the imperative to sustain the management of publicly funded housing properties for the advancement of sustainability in Nigeria is irrefutable, given the ongoing dire conditions afflicting public housing, which predominantly stem from the failure to implement sustainable management principles (Ihuah & Eaton, 2016). For sustainability to be realized, it is essential to prioritize the meticulous maintenance of housing estates, which should include infrastructural preservation, effective waste management, and the fostering of a salubrious living environment, among other critical factors.

According to the World Commission on Environment and Development (1987), sustainable development in the context of housing is defined as fulfilling the requirements of the current generation while safeguarding the capacity of future generations to fulfil their requirements, particularly in housing and living conditions. Nigeria is confronted with formidable housing obstacles, including accelerated urbanization, population expansion, and insufficient infrastructure (Aliyu & Amadu, 2017). It is particularly noteworthy that in numerous countries within the Global South, as urban centres evolve, there exists a lack of coordinated housing development that fails to optimize urban space utilization, wherein environmental planning is integrated into housing initiatives to promote more sustainable urban development by reconciling land utilization with environmental sustainability (Okonkwo & Akanwa, 2017). Sustainable development offers a comprehensive framework for tackling these challenges and establishing resilient, inclusive communities. The routine upkeep of thoroughfares, utilities (such as water, electricity, and sanitation), and communal spaces is imperative to maintain the operability and safety of the housing estate (McCord & Houser, 2017). The implementation of effective water supply systems (Akanwa et al., 2022), along with organized waste collection, recycling, and disposal mechanisms, is vital for preserving a clean and healthy environment (Nkwocha et al., 2019). The maintenance of parks, green areas, and recreational facilities fosters a sense of community, enhances the quality of life, and contributes positively to environmental sustainability (Sukartini et al., 2021). Adequate security measures, encompassing lighting, surveillance, and community policing, are essential for ensuring the safety and welfare of the residents (Jegede et al., 2019). Engaging residents in decision-making processes and promoting a sense of ownership and accountability for the estate's upkeep can yield improved outcomes.

Future trends and innovations in the design of housing estates are mainly influenced by the demand for sustainable, efficient, and inclusive living environments. One notable trend is the integration of green building technologies, including energy-efficient materials, solar panels, and green roofs, which help diminish the environmental impact of residential developments (Chen et al., 2020). Furthermore, the idea of mixed-use developments is becoming more popular, as it encourages walkability and decreases the reliance on private transportation, thereby enhancing community spirit and lowering carbon emissions (Talen, 2018).

A new trend is emerging that emphasizes the design of housing estates aimed at accommodating a variety of populations, including seniors and individuals with disabilities. This approach includes the application of universal design principles and the creation of flexible living environments that can be easily altered to meet the evolving needs of residents (Heylighen et al., 2017). In addition, the adoption of smart technologies, such as Internet of Things (IoT) devices and data-driven urban planning tools, is anticipated to significantly improve the efficiency and quality of life within housing estates in the future (Angelidou et al., 2017).

3. METHODS

This study employs a narrative literature review to examine ethical challenges in housing estate maintenance. Relevant peer-reviewed journal articles, books, and policy documents were sourced primarily from Google Scholar using keywords such as “*ethics in housing maintenance*,” “*facility management ethics*,” and “*transparency in housing governance*.”

Studies were included if they addressed ethical concerns in estate maintenance, particularly financial mismanagement, safety compliance, and sustainability, with a focus on developing countries. Technical studies lacking ethical discussions were excluded. The findings were thematically analysed and categorized for discussion, after which recommendations for effective ethical maintenance were proffered.

4. RESULTS AND DISCUSSION

Key themes emerging from the review of literature include: the concept and types of maintenance, ethical challenges to effective housing estate management, and best practices for effective ethical housing estate maintenance.

4.1 Concept and types of housing maintenance

Maintenance is a collaboration of all technical and administrative actions intended to retain an item or restore it to a state of optimum performance. It is also defined as any work undertaken to keep or restore a facility to any acceptable standard. A good maintenance culture comprises accurate diagnosis

of defects, appropriate remedial measures, in-depth technical knowledge of material usage, management of resources, as well as formulation and implementation of integrated strategies and policies to sustain utility (Orhadahwe et al., 2020). Housing maintenance refers to the planned and unplanned actions taken to preserve or enhance the physical condition and services necessary for the optimal functioning of housing estates over time (Jiboye, 2010), thus, ensuring the longevity of facilities and enhancing resident satisfaction (Ogunbayo et al., 2018; Umeora & Onwuzuligbo, 2021).

There are different approaches to ensure a safe, functional and appealing living environment for residents. According to Olotuah (2015), Olayinka and Owolabi (2015), Olanrewaju and Abdul-Aziz (2015), and Adewale et al. (2019), each method targets specific maintenance needs and includes:

- i. **Preventive Maintenance:** This approach involves scheduled, routine checks and maintenance tasks designed to prevent issues before they arise. It helps reduce repair costs by identifying potential problems early, in the areas of electrical systems, plumbing, and heating ventilation, and air conditioning (HVAC) units. Regular inspections ensure that the estate's infrastructure remains in good working order, minimizing the need for corrective measures.
- ii. **Corrective Maintenance:** Corrective (Reactive) maintenance occurs when an issue arises unexpectedly and requires immediate action. It addresses urgent repairs, such as fixing a broken water pipe, electrical issues, etc. It ensures quick restoration of essential services and amenities, reducing inconvenience for residents.
- iii. **Routine Maintenance:** This includes day-to-day activities that sustain the overall condition and appearance of the housing estate, such as cleaning communal areas, landscaping, and waste collection, which are always carried out regularly as they contribute to a clean and well-kept environment.
- iv. **Predictive Maintenance:** This is a data-driven approach that relies on advanced technology to monitor equipment performance and the usage of sensors and software to detect signs of wear and tear before a breakdown occurs. This measure aims to optimize the timing of repairs, minimizing disruptions, and extending the lifespan of critical systems.
- v. **Emergency Maintenance:** This is carried out when sudden, severe issues arise that pose immediate threats to the safety or comfort of residents in case of hazards like fire outbreaks, or structural damage that requires immediate action, to safeguard residents and minimize property damage.

4.2 Ethical Challenges in Housing Estate Maintenance

Ethical challenges in housing estate maintenance manifest in various ways, including financial mismanagement, safety neglect, environmental negligence, and regulatory noncompliance. These issues not only diminish the quality of life for residents but also erode trust in estate management structures.

- i. ***Financial Mismanagement and Lack of Transparency:*** One of the most prevalent ethical concerns in housing estate maintenance is financial mismanagement, often manifested through a lack of transparency in fund allocation, overcharging for services, or misappropriation of maintenance fees (Ogunbayo et al., 2022). Many estate managers fail to provide residents with clear financial reports, raising concerns about accountability and fairness. Such practices erode trust and lead to deteriorating maintenance conditions due to misallocated or insufficient funds (Odediran et al., 2012).
- ii. ***Neglect of Safety and Quality Standards:*** To reduce costs, some facility management teams use substandard materials and unqualified personnel, compromising safety and durability (Bowen et al., 2007). Poor-quality repairs increase breakdowns and pose severe risks to residents. The 2017 Grenfell Tower fire tragedy in the UK exemplifies how cost-cutting and regulatory failures can lead to catastrophic consequences, even in high-income nations. The use of flammable cladding, lack of safety checks, and poor risk assessments caused 72 fatalities, exposing ethical failings in housing maintenance (Hodkinson, 2020). In Nigeria, the 2014 Synagogue Church Building Collapse killed over 115 people due to illegal expansion and the use of weak materials, while the Ita-Faji building collapse in 2019 resulted in over 20 deaths, despite authorities having marked the structure for demolition (Ajayi et al., 2024). These cases highlight the universal dangers of regulatory negligence in housing maintenance.
- iii. ***Privacy Violations and Resident Disempowerment:*** Another ethical challenge is the disregard for residents' privacy. Some maintenance teams enter private residences without adequate notice, leading to discomfort and distrust (Adewale et al., 2019). Additionally, estate managers often make key maintenance decisions without consulting residents, sidelining their concerns and preferences (Redmond & Norris, 2007). Ethical estate management involves incorporating and engaging residents through transparent decision-making and respectful privacy policies.
- iv. ***Environmental Negligence and Unsustainable Practices:*** Many housing estates lack sustainable maintenance strategies, leading to issues such as

improper waste disposal, poor sewage disposal, excessive water usage, and reliance on non-environmentally friendly materials (Okoye et al., 2018; Fayomi et al., 2019). The Makoko slum in Lagos, Nigeria, exemplifies the consequences of neglected urban maintenance, where the absence of proper waste disposal and sewage systems has led to severe environmental degradation, disease outbreaks, and uninhabitable living conditions (Farinmade et al., 2021). These practices not only degrade the immediate environment but also contribute to broader ecological and health challenges. In rapidly growing urban centres, poor estate and urban maintenance lead to overcrowded and unregulated market spaces, invariably leading to blocked storm drains, uncollected waste, and unhygienic living conditions. This highlights the larger consequences of neglecting sustainable maintenance, as both residential and commercial areas suffer from government inaction and regulatory lapses (Onuorah et al., 2024).

- v. ***Conflicts of Interest and Corruption:*** Conflict of interest may arise between estate managers and facility teams in the award of maintenance contracts to favoured firms rather than selecting the most competent providers (Odediran et al., 2012). This often results in poor service delivery and inflated costs, further burdening residents.
- vi. ***Regulatory Noncompliance and Exclusionary Practices:*** Non-compliance to regulations in housing estate maintenance extends beyond safety violations and environmental neglect to include failure to accommodate the diverse needs of residents with varying demographics and physical needs, leading to inequitable service provision (Mulder, 2006; Onwuzuligbo et al., 2025). In Nigeria, certain policy frameworks outline maintenance responsibilities for estate managers and relevant stakeholders, emphasizing preventive maintenance measures, regulatory compliance, and financial accountability (Nigerian Institution of Estate Surveyors and Valuers NIESV, n.d.; Federal Ministry of Housing, 2021). However, due to weak enforcement, there is widespread violation of standard practices in many housing estates.

5. RECOMMENDATIONS

Best practices for ethical housing estate maintenance include:

- i. ***Transparent Financial Practices:*** Financial transparency is the foundation of ethical maintenance operations. Estate managers should provide regular, accessible financial reports detailing the allocation of maintenance funds so residents understand how maintenance fees are allocated as transparency promotes accountability and helps build trust with residents, who are going to contribute to maintenance funds.

- ii. ***Commitment to Safety and Quality Standards:*** Upholding quality standards in maintenance is important to residents' safety and comfort. Facility management teams are expected to use durable materials, employ qualified contractors, and adhere to best practices in repair and upkeep by avoiding the effect of cost-cutting measures (Chidi et al., 2017).
- iii. ***Respect for Residents' Privacy:*** Access to private spaces should be conducted with proper notice, and consent should be obtained from residents before entering their homes, except in emergencies. Olotuah (2015) opines that privacy policies should be communicated to both residents and maintenance staff to ensure that maintenance operations do not infringe on residents' personal space or confidentiality.
- iv. ***Health and Safety Prioritisation:*** Maintenance operations should prioritize health and safety by addressing critical areas such as plumbing, mould removal, pest control, and electrical systems. This should be done through regular inspections and prompt responses to issues that could pose health hazards, as this not only protects residents but also upholds the estate's legal and ethical obligations (Standen et al., 2019).
- v. ***Environmental Sustainability:*** Integrating sustainability into maintenance practices reflects a commitment to environmental responsibility. Babalola et al. (2016) opine that using sustainable materials for repairs and eco-friendly methods, such as sustainable waste disposal, water conservation, and energy-efficient lighting should be encouraged. The Singapore Housing and Development Board (HDB) model, known for its long-term sustainability policies, has successfully implemented community-driven waste management, green energy solutions, and structured maintenance schedules, significantly enhancing environmental quality in public housing estates (Zhou et al., 2022).
- vi. ***Ethical procurement processes:*** In cases of outsourced maintenance, contracts should be awarded based on merit, with clear procurement policies, and adequately supervised to prevent conflicts of interest (Hodkinson, 2020).
- vii. ***Strict compliance with regulations:*** this is particularly relevant for in-house maintenance operations, to ensure compliance with safety, environmental, and maintenance laws (Makinde, 2017).
- viii. ***Effective Stakeholder Engagement:*** Engaging stakeholders in maintenance decisions is crucial. Give room for feedback by allowing residents to voice their concerns and preferences regarding maintenance operations which in turn can foster a sense of community ownership and encourage collaboration in maintaining a safe and appealing environment

(El-Gohary et al., 2006). These stakeholders include:

- a. *Estate Managers*: As primary overseers, estate managers are tasked with establishing operational standards, ensuring transparent practices, and actively engaging with residents. By setting ethical benchmarks and maintaining accountability, they build a culture of trust that supports smooth maintenance operations (Makinde, 2017).
- b. *Facility Management Team*: they are responsible for the day-to-day maintenance tasks, adhering to quality, safety, and privacy standards. Their commitment to ethical conduct, along with their transparency and respect for residents, ensures effective and trustworthy service provision (Odediran et al., 2015).
- c. *Regulatory Bodies*: Regulatory authorities include local government agencies, housing authorities, building departments, environmental protection agencies, health and safety regulators, consumer protection bodies, and fire services. They provide oversight by establishing and enforcing ethical standards, as they carry out regular inspections, ensure compliance with health, safety, and environmental regulations, and guide best practices (Olanrewaju & Abdul-Aziz 2015).
- d. *Residents*: As end users, residents play a crucial role in housing estate maintenance by reporting maintenance needs, upholding community standards, and ensuring responsible use of shared spaces. However, in estates where multiple demographic groups coexist, maintenance policies must balance diverse needs to prevent exclusionary practices and ensure fairness. Agency over the living environment is even more cogent when different user groups concurrently use the same space. In housing estates with diverse demographic groups, a lack of environmental control forces one group to endure discomfort (Munonye et al., 2023). This ethical shortfall can be addressed through adaptive maintenance policies and user-centred design (Munonye et al., 2021).

6. CONCLUSION

Ethical considerations in housing estate maintenance are essential in fostering safe, functional, and inclusive residential environments. Addressing unethical practices such as financial mismanagement, safety violations, and environmental

negligence requires a commitment to transparency, stakeholder engagement, and sustainability. Implementing ethical best practices, including financial accountability, adherence to safety standards, respect for resident privacy, and environmental responsibility, can significantly enhance the quality of estate management.

Moreover, effective stakeholder collaboration—where estate managers, residents, facility management teams, and regulatory bodies actively engage in ethical governance—can improve trust and long-term maintenance outcomes. A culture of moral responsibility within housing estates ensures that maintenance strategies align with broader urban sustainability goals, ultimately contributing to enhanced living conditions and long-term property value.

While this study provides valuable insights into ethical challenges and best practices in housing estate maintenance, certain areas require further exploration, such as the impact of digital technologies and the Internet of Things (IoT) on transparency and efficiency in maintenance operations and regulatory effectiveness in promoting ethical maintenance.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest concerning the authorship and publication of this review article.

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