

14<sup>th</sup> Annual International Conference on Industrial Engineering and Operations Management  
Dubai, United Arab Emirates (UAE), February 12-14, 2024

Publisher: IEOM Society International, USA

DOI: [10.46254/AN14.20240228](https://doi.org/10.46254/AN14.20240228)

Published: February 12, 2024

# **An Alternative Approach to Building Inspection Challenges in South African Municipalities**

**Maphutha Letsau Khutso and Morena William Nkomo**

Department of Construction Management and Quantity Surveying

University of Johannesburg

Johannesburg, RSA

letsaukhutso@gmail.com, [mnkomo@uj.ac.za](mailto:mnkomo@uj.ac.za)

**Stephan Molusiwa Ramabodu**

Department of Construction Management and Quantity Surveying

University of Johannesburg

Johannesburg, RSA

caigbavboa@uj.ac.za

## **Abstract**

Building inspection plays a significant role in the construction of buildings of every country. Just like any other industry building inspection has its own challenges. This paper firstly investigates the challenges of the current municipal inspection system and secondly determine an alternative approach to building inspections challenges in South African municipalities. This paper also gives recommendation on how to address the challenges faced by building inspectors. As an alternative approach to building inspection challenges in South Africa.

The study focused on assessing the challenges based on available literature and on user perspective to improve the building inspections within municipalities.

## **Keywords**

Building Inspector, Corruption, Bribe, Construction.

## **1. Introduction**

Building inspection is important to the national development plan of every country. It is an essential task in ensuring that buildings are built in accordance with the relevant building regulations and standards including the National Building Regulation and Building Standard Act No 103 of 1977 during construction process. As per the National Building Regulation and Building Standard, inspection is defined as “ the general inspection by a competent person of a system or measure or installation of a building, or part thereof, at such intervals as might be necessary in accordance with accepted professional practice to enable such competent person to be satisfied that the design assumptions are valid, the design is being correctly interpreted and the work is being executed generally in accordance with the designs, appropriate construction techniques and good practice but shall exclude detailed supervision and day-to-day inspection” (Keuter, 2008).

In general, the term "Building Inspector" refers to a person who conducts building inspections to verify compliance with regulations and legislation and provides advice on building requirements.

### **1.1 Objectives**

- To investigate the challenges of the current municipal inspection system.
- To determine an alternative approach to building inspections challenges in South African municipalities.

## **2. Literature review**

The construction industry contributes heavily to the economy of the country. As said there is a shortage of building inspectors in South Africa as asserted by the University of Johannesburg in partnership with the Gauteng City Regional Academy. As a result of the shortage of participants in the South African construction sector in 2022 added about 107 billion rand (or about 5.9 billion dollars) to the country's gross domestic product (GDP). This is a decrease from the prior year, as the sector's contribution to the country's GDP totaled about 111 billion rands (Cowling, 2023)

According to Windapo, (2006) the residential construction industry has seen a spike in quality errors, sometimes leading to building breakdown. These errors have a detrimental effect on both economic growth and the built environment's sustainability. Because a building is an asset, and an asset can be sold or bought at any time. Before a building can be sold or bought inspections are done to identify General errors or malfunctions including those in the roof, electrical wiring, water supply, heating and air conditioning systems, sewage system including septic tanks if any, conservancy tanks, or whatever sewerage disposal system used (Remax, 2023).

Remax, (2023) further states that major defects can be identified as structural errors which comprises of foundations include cracks, seepage and bulges, flooding and dampness, wet walls and any mold or problems with tiling. The primary objective of any home construction project is to design and construct it to the client's specifications at the highest level of quality (Rotimi & Tookey, 2012). At the center of poor construction in urban areas is mostly the municipality negligence during inspection process. Further confirmation of the fact that unsafe structures fail most frequently in urban center's comes from (Dahiru & Okotie 2010).

The blame for poor and uncompliant housing within urban areas is out on the municipality. At some point it may not be the municipality per se but rather the municipal inspectors of that particular area. It is therefore significant that the municipality take measures of minimizing these inspection defects. In this chapter we look at an approach that the municipality can apply for effective knowledge of inspection to building inspectors in order to improve the state of compliance to municipal building standards.

### **2.1 Lack of understanding of building inspections.**

Building inspection is an in-depth examination of a buildings or structures to ensure that flaws, risks, or other problems that could jeopardize the building's integrity or safety are eliminated and to make sure the building complies with the relevant building standard and regulations (De Oliveira, 2008). Moreover, it ensures that the builders comply with the necessary building standards and regulations. Several high-profile instances have shown that most inspectors are not familiar to inspection manuals because of lack of building regulation and standards knowledge. This is a result of lack of strategic plan to guide the building inspectors after being appointed. Research has shown that lack of knowledge and training can result in poor performance leading to low profit. With a significant impact on suppliers, customers, and other stakeholders, all of whom suffer consequences.

Keles and Yilmaz, (2022) stated that reducing lack of knowledge towards building inspection facilitates a reflection of improvement, and went further to state that, in an article about *lean production knowledge among employees in building inspection organizations* that the building inspectors should be educated about their work topics and provided with training stating the concept of lean manufacturing, its content, and how it will be implemented.

### **2.2 Workshop**

The word workshop has different meaning depending on the context of the word. Wirtz, (2020) defined it as a participatory meeting where a collection of different people gathers together to collaborate over a set of tasks to solve a problem or complete a project, and its purpose is designed to provide a setting where a group of individuals may get together to interact, brainstorm, discover challenges, reach consensus, and discover solutions. Although there are different types of workshops it aims is always one. From the academic's side Kuyrukcu, (2015) stated that the

workshop will assist learners move from an inactive to an active mind-set by giving him brief, focused tasks that will allow him to apply his creative thinking while also expanding his knowledge and skills.

Municipal workshops serve the same purpose which is to educate communities about a certain matter that is deemed write or suitable for the community so that the community may be aware and in exchange engage the municipality on that arising matter. There is a significant lack of knowledge by homeowners on the steps to be taken when commencing/intending any construction which might be to extend or demolish a building. This is fundamental as a result of lack of workshops that speaks to educate the community on how the municipality functions.

### **2.3 Induction and Orientation**

There is a wealth of evidence that suggests induction is beneficial, though not essential, strategy in moral growth (Saeed, 2013). Induction is explained by Adams, (2023) as a procedure utilized to familiarize new staff members with the company, assisting them to adjust, and provide them with the knowledge they need to be an asset to the team. According to Dubeyl, (2009) an induction is the method of introducing a new employee to the company culture and processes with the aim of bringing them up to speed as quickly as possible as well as making them feel socially comfortable and aware of their professional responsibilities.

The induction of new employees is a crucial step in making employees feel welcome and familiar with the company (Saeed, 2013). The public sector aims to inspire, attract, keep the finest people for the suitable employment so they can effectively carry out their vision and goal (Saeed, 2013). On the other side Davenport wrote as referenced by Martel, (2002), orientation of new employees is one of the most significant organizational procedures. A well-oriented worker is much capable of being productive for the company. Recently there is a lot of bad representation which shows that there is lack of induction and orientation in the public sector.

The failure of building inspector to fully understand their job description can be seen as a result of lack of induction and orientation after being appointed to their role. This is because some of the newly appointed inspector lacks background experience of what is exactly done as a building inspector not omitting the fact that they have experience related to building inspection. Every workplace has its own way of operating, it is therefore significant to give full induction to every new staff member of the organization to acquaint him/herself with the way of operation of that organization mostly to fulfil what is been said by Martel, (2002) that well-oriented worker is much capable of being productive for the company.

### **2.4 Corruption**

One topic that the construction industry is aware of but reluctant to discuss is corruption. although corruption is a distinct phenomenon, it is difficult to characterize. Szeftel define corruption as conduct that breaks from the norm, the laws, and the obligations governing the use of a privileged position or other reasons of personal benefit. Corruption is further defined by the World Bank Sanction Committee as the giving providing, acquiring, or seeking of anything of value with the goal to influence an official's decision during the contract execution, procurement, or selection process.

Black, (2007) stated that corruption is mostly influenced by corrupt building inspectors and corrupt contractors and other public officials which result in neglecting building codes, lax enforcement and the lack of on-site inspection and as a result, this possesses a threat to the life of residences including quality of the houses. Black, (2007) further asserted that it is more expensive to comply with building codes and as a result constructors have opted to bribe the building inspectors and quickly commence with the construction which at the end compromises the lifespan of the building. All respondent groups agree that, in comparison to the other respondent categories, public representative are the ones who engage in corruption frequently.

In general, subcontractors and building inspectors are regarded as the most dishonest organizations, followed by contractors (Bowen, 2012).

### **2.5 Briber**

According to Phiri & Smallwood, (2010) the history of corruption begins two millennia ago. Bribery, extortion, cronyism, nepotism, graft, and embezzlement being the examples of corruption (Gulati & Rao 2006). Although Gulati & Rao (2006) have explained different forms of corruption, most corruption that is seen in construction industries is in a form of bribery. This is seen in Malawi as Phiri & Smallwood, (2010) stated that in terms of corruption, bribe has

a significant impact on contract awards. This is further asserted by Guash, (2005) by saying certain contractors' resort to bribery to obtain contracts.

According to Kenny (2007), the effects of corruption extend beyond the paying of bribes and include low-quality infrastructure that has minimal economic returns and little financing for upkeep. Mauro, (1997) concludes that corruption as a form of bribe, is frequent to the cost of future economic growth, discourages investment, restricts economic growth, and changes the makeup of government spending. Corruption creates social inequality and restricts economic growth in emerging countries. Corruption impacts economic development not only in terms of growth and efficiency but also in terms of equitable resource distribution among the populace, escalating income disparities, eroding the efficacy of social welfare initiatives, and ultimately leading to lower levels of human development (Chêne, 2014).

## **2.6 Income**

Income is known to be a reward of the work done or an investment which is given in the form of money. Of course income has an impact on the quality and production of work done. Most people argue that low income makes people vulnerable and lead them to corruption. Kiyosaki, (1997) in his book stated that one dad believes that the love of money is the root of evil while, while the other dad believes that lack of money is the root of evil. In an article by Paolo Mauro called *why worry about corruption*, low wage has been discussed as the cause of corruption which has adverse impact on the growth of the economy and create social standards. Mauro, (1997) went further to say low wages in the civil service is relative to wages in the private sector are a source of low-level corruption. When civil service pay is too low, civil servants may be obliged to use their positions to collect bribes as a way of making ends meet, particularly when the expected cost of being caught is low (Mauro, 1997).

Education.

There are several justifications for the significance of education in one's life more specially at the workplaces. An educated population is important in building a nation's economy. Studies show that nations with the largest degree of education are prone to experience advances in both economic and human development. As per the definition of education a country with illiterate building inspector will mostly be exposed to non-complying building regulation which pose a threat to both the lives of tenants and investors. A criterion for building inspectors is made so that every building inspector falls within it. These criteria include a certain education level which all building inspectors need to acquire.

## **2.7 Negligence of building regulations.**

A building code, often known as a regulation, is a set of "acceptance" minimum standards for building performance that the local state or government body uses to regulate building practices. South Africa has its building codes or regulations which are used as a guideline by both the municipality and the contractors. This building codes includes the South Africa's National Building Regulations (NBR), SANS 10400, Standard system, etc. The South Africa's National Building Regulations (NBR) were originally produced as a set of functional guidelines for anybody building any type of structure. According to the Development and the application of building regulations, (1993) The South Africa's National Building Regulations (NBR) are the most used building regulations in South Africa prepared and published by the South African Bureau of standards.

There is a common belief that the NBR requirements are excessively stringent, impeding development and resulting in expensive construction (Development and the application of building regulations, 1993). On the other hand, a review of the NBR reveals that this is not the case if these are applied correctly. The act of undermining building regulations by building inspector is evidence of negligence on its own. A review from parliamentary article stated that residence of Ba-Phalaborwa complains that building inspectors approves buildings that don't meet approval criteria, and this undermines building standards. Citizens went further by stating that to prevent the impoverished from being taken advantage of and given subpar housing, inspection procedures should be strengthened and tightened.

Building regulations are firstly neglected by building inspectors as the state representatives who are obliged to regulate and ensure that there is a high level of compliance from constructors and homeowners. The omission of building regulations by building inspectors benefits both the building inspector in a form of bribe and the contractor/homeowner in a form of bypassing the system and receiving a reward for mediocratic work.

### **3. Research Methodology**

This article is based on a literature reviews whose goal was to firstly to investigate the challenges of the current municipal inspection system by analyzing reports on different literature relating to building inspection. Lastly to determine an alternative approach that can be effective for building inspections. Previous reports information was reviewed, and key ongoing findings were adapted. The data was gathered from previous literatures and then analyzed.

### **4. Conclusion**

The significance goal of this study was to investigate the challenges of the current municipal inspection system and to determine an alternative approach that can be effective for building inspections. The reviewed literature showed that in the areas where building regulations are omitted may not necessarily be intentional as there is a possibility that the building inspector of that particular area may not understand the building regulations as a result of lack of knowledge of building inspections and building manuals. This may also be because of house owners or contractors who have no knowledge of how the municipality operate due to lack of workshops with house owners and contractors.

Failure to orientate and induct new workers affect the productivity of workers as Martel, (2002) stated that, well-oriented worker is much capable of being productive for the company. On the other side, building regulations are omitted as a result of corruption by building inspector, this is done for self-benefit by either the inspector or contractor. Bribe is one of the leading form corruptions which most people are exposed to. Workers with low income have a character of being exposed to bribe and neglecting processes. Education is regarded important in a nation that seek to fight poverty, illiteracy and grow the economy. Lastly the act of corruption is evidence that building regulations are omitted.

### **5. Recommendation**

The primary goal of this study was to investigate the challenges of the current municipal inspection system which was affected by lack of understanding of building inspections, workshop, induction and orientation, corruption, bribery, income, education and negligence of building regulations. Determining an alternative approach to building inspections challenges in South African municipalities will mean that the following should be addressed in this manner.

- The municipality should establish inspection classes for every inspector which shall then teach them more about building regulations and other instrument of knowledge that are relevant to building inspection to ensure that inspectors are familiar with the regulations and to encourage them to register with the council, this will also assist in mitigating negligence of building regulations.
- Secondly the municipality needs to establish a culture of hosting workshops with the community to acquaint them with the municipality and how it operates. induction and orientation should be done do all new appointed workers in order to welcome them and to induct them on their roles.
- Furthermore, a system of reporting corruption should establish in order to report and lay complains about the maltreatment, behaviour, bribes, professionalism, etc of that particular inspector. This will assist the municipality when making individual assessment and giving inductions to new employee's.
- In order to fight corruption a system of rotation between building inspector's areas should be implemented so that building inspectors may not feel comfortable about one area of work and lastly after every final inspection, the chief building inspector should visit the site before issuing of certificate of occupancy.
- Education should never be compromised when coming to selection criteria this will help to select applicants who have adequate knowledge of building inspection.

### **References**

- Adams, A., *What is an induction?*, 2023. Retrieved from citrus HR: <https://citrushr.com/blog/day-to-day-hr/what-is-induction/>
- Bowen, E. a., CORRUPTION IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY: A MIXED METHODS STUDY. *A mixed methods study In: Smith, S.D (Ed) Procs 28th Annual*, 523, 2012.
- Cowling, N., *Construction sector's value added to GDP in South Africa 2016-2022*. South Africa: statista, 2023.

- Dahiru, D. a., Appraisal of building survey practice in Nigeria. *Journal of Engineering and Applied Science*, 181-192, 2010.
- De Oliveira, S. P., Discussion of the Role of Inspection Laws as Support for Preventive Maintenance Strategies Adoption. *Journal of Civil Engineering and Architecture*, 1053, 2008.
- Imran Saeed, M. A., Employee Induction and Orientation at Public Sector Organization: A Case from Pakistan . *International Journal of Contemporary Business Studies*, 32, 2013.
- Keuter, M., *NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT NO. 103 OF 1977 ( as amended )*, 2008.
- Remax., *Why do sellers & buyers conduct home inspections?* Retrieved from Remax of Southren Africa, 2023: <https://www.remax.co.za/ask-remax/article/why-do-sellers--buyers-conduct-home-inspections/>
- Rotimi, E. F., & Tookey, a. J., STAGE BUILDING INSPECTION: A POSSIBLE SOLUTION TO BUILDING FAILURES IN NIGERIA. *Procs 4th West Africa Built Environment Research (WABER) Conference*, 216, 2012.
- Windapo, B., *The threat of building collapse on sustainable development in the built environment Symposium conducted at the meeting of the Conference on Sustainable*. Jos, 2006.
- Wirtz, D., *What Is a Workshop? (+2 Examples)*. Retrieved from facilitator School:, 2022. <https://www.facilitator.school/blog/what-is-a-workshop>
- Yilmaz, A. E., Investigation of Lean Production Knowledge among Employees in Building Inspection Organizations. *Building Energy-Saving and Renewable Energy Utilization Systems for a Sustainable Human Settlement Environment*, 2022.
- Zafer Kuyrukçua, a. E., An educational tool the importance of informal studies/studios in architectural design education: A workshop summary. *Procedia - Social and Behavioral Sciences* , 2667, 2015.
- Adams, A., *What is an induction?* Retrieved from citrus HR, 2023: <https://citrushr.com/blog/day-to-day-hr/what-is-induction/>
- Black, W. K., Corruption kills. In P. a. Geis, *International handbook of white-collar and corporate crime* (p. 449). Irvine,CA, USA: Pontell and Geis, 2007.
- Bowen, E. a., CORRUPTION IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY: A MIXED METHODS STUDY. *A mixed methods study In: Smith, S.D (Ed) Procs 28th Annual*, 523, 2012.
- Dubey1, e. a., A Case Study” Indian Res. *Cooperative Societies for Sustaining Rural Livelihood*, 223, 2009.
- Imran Saeed, M. A., Employee Induction and Orientation at Public Sector Organization: A Case from Pakistan . *International Journal of Contemporary Business Studies*, 32, 2013.
- Wirtz, D., *What Is a Workshop? (+2 Examples)*. Retrieved from facilitator School, 2022: <https://www.facilitator.school/blog/what-is-a-workshop>
- Zafer Kuyrukçua, a. E., An educational tool the importance of informal studies/studios in architectural design education: A workshop summary. *Procedia - Social and Behavioral Sciences* , 2667, 2015.

## **Biography**

**Maphutha Letsau Khutso** is a scholar at the University of Johannesburg, currently registered for master’s in construction management. He bagged his BSc Honours degree in Quantity Survey, Certificate in Construction Management, and National Diploma in Building from the Department of Construction Management and Quantity Surveying at the University of Johannesburg. He is currently employed as a Tutor in his department, where he assisted in teaching. This employment gave the platform for an increased interest in research.