

THE ROLE OF CODES AND STANDARDS IN QUALITY ASSURANCE PROGRAMME: ISSUES AND INSIGHTS

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Abstract

It is important to recognize that quality assurance is cost effective when compared to the deterioration of Builder reputation or worse, bankruptcy due to excessive defects and potentially, failure. This paper therefore, discusses the role and implementation of codes and standards in quality assurance programme with the aim to determine its issues and insights. Consequently, the need to evolve the national building code (NBC) was discussed by way of introduction. Also discussed are:- aims, philosophy, the role and implementation of codes and standards for quality assurance programme, limitation of codes and standards (problems), building permit and finally the prospects. Based on the identified limitations, recommendations were made which emphasized among others, that aesthetics and quality of workmanship be explicitly addressed, the code should not only specify characteristics of end product but also the process by which it is attained also, builders were urged to develop an appropriate quality assurance programme tailored to their organization to ensure quality and performance of the whole house system.

Introduction

In 1987, the defunct National Council of Works and Housing directed that a National Building Code be evolved for Nigeria. All the stakeholders in the Building Industry were duly contacted for input. Thereafter, the defunct Federal Ministry of Works and Housing organized a National Workshop held in Lagos in 1989. To further fine tune the Draft National Building Code, another workshop was held in Ogun state in 1990. The product of the Ogun state code was approved by the then National Council on Housing in 1991. Unfortunately, this document was not ratified by the Federal Executive Council for use in the Country (Mimiko, 2006).

The 1991 approved document was represented to the 2nd National Council on Housing and Urban Development held in River state, November, 2005 and the council directed that the document be widely circulated to all stakeholders for input to facilitate the production of an acceptable National Building Code (NBC). Consequently, the draft document according to Mimiko (2006) underwent some restructuring from three parts to four parts as follows:

- I. Part I Changes from Administration and Environment to Administration.
- II. Part II forms Classification and requirements subdivided into major divisions; section 4 and 5 then section 6-12 respectively. The second division charges the major stakeholders in the building industry to produce their own requirements as per the working tools from section 4-5.
- III. Part III forms the enforcement part of the codes. The entire building process divided into four codes. The entire Building process divided into four convenient stages and developed under two sub-headings:

- a. Pre-design Stage-Requirements and Enforcement.
 - b. Design Stage-Requirements and Enforcement.
 - c. Construction Stage-Requirements and Enforcement.
 - d. Post-Construction stage-Requirement and Enforcement.
- IV. Part IV is made up of separate part namely, schedules, where all supportive documents, data, tables, information and all sorts of relevant and approved application forms to part I, II and III can be found.

The need to evolve a National Building Code according to Mimiko (2006); Akindoyemi (2007) and Obiegbu (2007) arose from the following existing conditions of our cities and environment:

- a. The absence of planning of our towns and cities.
- b. Incessant collapse of buildings, fire infernos, built environment abuse and other disasters.
- c. Dearth of referenced design standards for professionals.
- d. Use of non-professionals and quacks.
- e. Use of in tested products and materials.
- f. Lack of maintenance culture.

In view of the afore-stated, the National Council on Housing and Urban Development deemed it necessary and initiated the process of evolving a National Building Code to put a stop to the ugly trend in the building industry. Consequently, the implementation of the code became a challenge. It is against this background therefore, that the need to identify the problems and prospects of the roles and implementation of the codes and standards in quality assurance programme looms large.

The Aim, Philosophy, Role and Implementation of Codes and Standards in Quality Assurance Programme.

The purpose of building code according to Iroegbu, Umuezurike, Oscar, Mbakwe and Onwuka (2007) is to build safe buildings thereby reducing death, injuries and property damage. This preserves the built environment, both residential and commercial, reduces public and private disaster, aid and maintains employment in businesses and institutions that otherwise might be forced to close following a catastrophe.

In addition, building code promote a level and predictable playing field for designers, builders and suppliers. They promote a degree of comfort for buyers, who are entitled to rely upon minimum construction standards for the safety and soundness of a building. Building codes also allow economics of scale in the production of building materials and construction of buildings. Furthermore, building codes contribute to the durability of buildings and help maintain quality of life and property values (Obiegbu, 2007).

Its philosophy has been built and directed towards successfully executing building projects through an integrated, multi disciplinary approach from the conceptual state to planning, designing, construction, operation and maintenance (Iroegbu, 2007). As discussed above, the philosophy includes the minimal regulation for the protection of public health, safety and welfare, provision of parameters that deserve as much attention as any programme parameter set on the project and also provides a form of insurance both for the protection of fire and owner who may someday be forced to justify his projects in a court of law.

Again, requirements described in codes and standards represent a level of performance that has been accepted by the stake holders in construction industry as the minimum to which construction should be regulated. In many instances, one will have to go beyond the code to achieve performance that is at the minimum level acceptable to the market. As a result, codes and standards have several limitations for use within quality assurance programme.

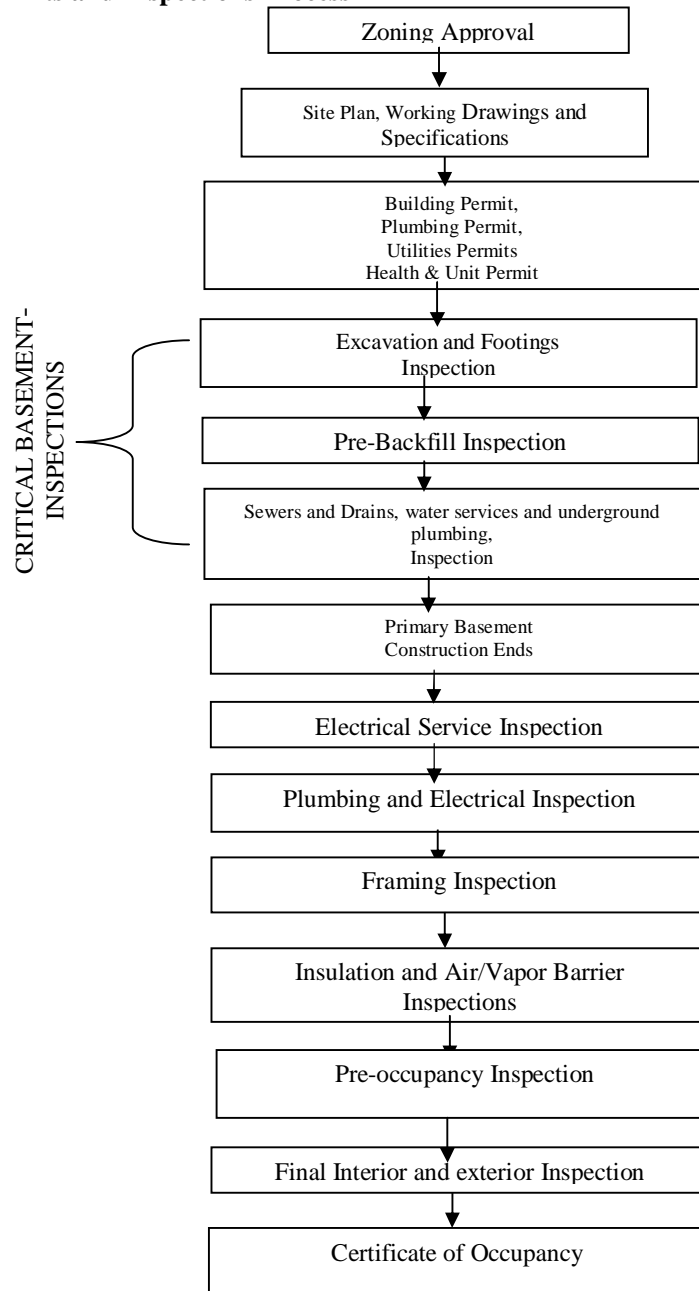
Limitations (Problems) of Code and Standards

The following are among the problems and limitations for use within quality assurance programmes with regards to codes and standards:

1. Building codes are intended to describe construction that meet some minimum acceptable level for health and safety purposes, aesthetics and quality of workmanship are not explicitly addressed.
2. The National Building Code of Nigeria and its referenced standards are written by the stake holders in building industry as a whole and unless the industry sees fit to include requirements for particular situations, some issues may not be fully addressed.
3. The National Building Code of Nigeria specifies the characteristics of the end product and not the process by which it is attained; hence, other references must be relied upon to provide information on quality assurance.
4. The draft and renewed copy of the code was based on foreign codes some of which may not have direct relevance to our environment.

However, despite these problems and limitations, codes and standards represents an important minimum threshold for any quality programme. As a minimum, basement construction for example should be able to pass the critical inspection depicted in figure I b.

Figure I:
An Example of Relationship of Primary Basement - Related Inspections to Typical Building Permits and Inspections Process



Most states in Nigeria make available a description of the building permit and inspections process, and also provide Builders with sample inspection checklist to facilitate the construction and

inspection processes. Again, as mentioned previously, requirements found in codes and standards are not a substitute for quality assurance. Hence, the same may be said for building inspection conducted by the authority having jurisdiction.

Building Permit

Permits and inspections may be useful to establish basis competency across the Builder's team from the designer through to the suppliers, installers and trades. In cases where compliance problems become consistently evident, inspection provides useful feedback to either encourage suitable training or find another player for the team. According to Obiegbu (2007_b) building permits are required by the code. There exists a penalty for starting work before a permit is issued, an important fact is that starting a building or any development without a permit is a violation of the law. The building department may issue a stop order or discontinue use of the building and vacate the premises.

The permit is an authorization to begin work. It also serves as a public notice, a plan checklist, a statistical record, an inspection record and a receipt. It provides general information to the permittee (the person or company receiving the permit) and the public. Although the building plans may be destroyed after some time, the permit form is usually kept on file indefinitely. The Building Permit Application (BPA) shall provide basic information's about the applicant, the project etc. typically, according to Obiegbu (2007b) the Building Permit Application (BPA) has space to write information such as:

- a. Job address.
- b. Owner's name, address and telephone number.
- c. Contractor's name address and active state licence number (if any).
- d. Architect's name/Engineer's name, address and phone number.
- e. Legal description of the property (Lot, Block, Track etc)
- f. Brief description of the job, including type of construction. Floor area, and number of stories.
- g. A plot plan showing all the buildings and the setbacks from the street.
- h. Occupancy classification.
- i. Zone.
- j. Fire district.
- k. Estimated value of the work

The applicant or qualifying agent must be the entity or person responsible for the entire project and providing direct, onsite management of the work they are performing. Set of construction plans and specifications must be included with the building permit application. These sets of drawing must be duly signed and stamped by the relevant professionals. The permit process is a means of enforcing the building code to provide better construction and greater safety to the public.

Recommendations

Based on the afore-listed problems and limitations of codes and standards, the following recommendations seem to be justifiable:

1. Aesthetics and quality of workmanship should be explicitly addressed.
2. The National Building Code of Nigeria should not specify only characteristic of the end product, but should also specify the process by which it is attained.
3. Builders are urged to develop an appropriate quality assurance programme tailored to their organizations to ensure the quality and performance of basements and the whole house system. The potential to develop quality assurance networks with manufacturers, suppliers

- and installers of materials, components and assemblies continues to improve and is increasingly important to become connected to these networks so that a majority of resources can be focused on building better basement.
4. Professionals in Building industry should produce the most appropriate code suited to our environment for subsequent use and application.

Conclusion

The role and implementation of code and standards can not be over emphasized especially, as regards quality assurance programme. Quality assurance is critical to running a successful business, especially a building business, because houses typically represent the largest simple purchase the average person makes in his or her life time. Consumer expectations of product quality are increasing as the proportion of manufactured good fashioned on site.

Again, it is important to recognize that quality assurance is cost effective when compared to the deterioration of builder reputation, or worse, bankruptcy due to excessive defects and potentially, failures. Therefore, the need for immediate implement of codes and standards in quality assurance programme, can not be over emphasized.

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