

IMPERATIVES OF NATIONAL BUILDING CODE IN CURBING BUILDING COLLAPSE IN NIGERIA

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ABSTRACT

Building collapse has assumed an embarrassing dimension in our national life. It is on this note that this paper addresses the imperatives of National Building Code to address incessant building collapse in Nigeria. The paper reviewed relevant literatures, and an in-depth analysis of the proposed National Building Code. It painstakingly brought into focus the significant sections of the National Building Code, which are meant to address the menace of building collapse in Nigeria. For instance, the identified factors that cause building collapse in Nigeria are mainly three. These are non-compliance with specifications, incompetent contractors and the use of substandard materials. These factors are addressed in section 10 of the code under building materials and component requirement while section 13, is an enforcement of the provisions of the code which can easily address incompetent contractors. The paper concludes that the National Building Code, has been designed to arrest building collapse in Nigeria. It recommends that the passage of the code into law and immediate establishment of code enforcement units, would inevitably solve the menace of building collapse in Nigeria.

Keywords: National Building Code, Curbing, Building Collapse, Nigeria.

INTRODUCTION

Building collapse is assuming an embarrassing dimension in our national life. Cases of building collapse are reported almost every time. The latest being Ita Faji in Lagos State, where innocent school children were buried alive. It can be said that once the dust generated by any collapse is settled, the unpalatable situation is forgotten. Whatever lesson a nation learns from every adverse situation it faces, will determine how far such a nation will go at development. It is on record that developed nations of the world take advantage of every adverse situation to arrive at something better as a way of not just overcoming the problem, but also to advance national development, (Afuye, 2019).

Nigeria is not the only nation that had experienced building collapse. Afuye (2012), reported some cases of building collapse in some countries of the world such as St. Peter's Church in Sweden in 1666, where eight persons died, a hotel collapsed in Singapore in 1986 in which 33 persons were killed. In 1987, Lambiance Plaza collapsed in Connecticut USA, where 28 persons died. In 1995, Samsung Department Store, collapsed in Seoul South Korea and 500 persons died. Therefore, it is a global phenomenon. However, anytime such a collapse occurs, it affords them the opportunity to look

critically at their existing building regulations and bye-laws to strengthen them in order to forestall future occurrence.

These building regulations are built into the National building code and other bye-laws of any nation. Building code is a set of rules that specify the minimum standard expected of a building facility as a way of ensuring the health, safety and welfare of the end users. The code puts in place regulatory framework in the form of technical requirements and a set of administrative regulations.

AIM

This paper is aimed at advancing the significance of the proposed National Building Code. The code is to serve as a way of addressing incessant building collapse in Nigeria.

METHODOLOGY

The paper reviewed publications and conference papers on building collapse and National Building Code. The review was used to relate the significance of National Building Code in curbing building collapse in Nigeria.

OVERVIEW OF THE NATIONAL BUILDING CODE

Anejo and Abdulhameed (2008), are of the view that the National Building Code if enacted into law, is meant to sanitize the building industry in Nigeria. Building Code according to Obiegbu (2008), is a set of legal requirements; the purpose of which is to promote good practice in the design, construction and maintenance of buildings, in the interest of the health, safety and welfare of those that will occupy the building.

The National Building Code is divided into four parts. These four parts were subsequently subdivided into fifteen sections. The arrangement of the code follows the under listed order (National Building Code, 2006):

PART 1: ADMINISTRATION: Under administration, there are three sections:

- (a) **Section 1:** Citation and Commencement. This section states the general principle of the code, the title, the purpose it is meant to serve and the scope of operation.
- (b) **Section 2:** This is the interpretation, definitions and abbreviations. It is the interpretative meaning of the words used in the code for clarity to guide against ambiguity
- (c) **Section 3:** This is the establishment of a Building Code Advisory Committee. This committee is answerable to the minister, and its main function is to periodically review the code. Members of the committee are to be drafted from all the professional bodies represented in the built environment and representative of some ministries. The committee has three (3) years of tenure and is renewable for another period of three (3) years. 1/3 of members can form a quorum for the purpose of meeting.

PART 2: TECHNICAL (PROFESSIONALS)

This part is divided into nine (9) sections (section 4 – section 12).

(d) **Section 4:** Building Design Classification.

This section classifies building into different uses such as (a) Assembly (social, religious, recreational, restaurant, civic centres).

- (a) **Group B:** Business and Profession: - This is a building that is used for transaction of business purpose or used as radio and television station.
- (b) **Group C:** Educational uses
- (c) **Group D:** Factory and Industrial uses where fabrication, assembling or processing of products are done.
- (d) **Group E:** High Hazard: where corrosive, highly toxic, highly combustible materials are being produced.
- (e) **Group F:** Institutional use: Buildings in which physically challenged people are accommodated.
- (f) **Group G:** Mercantile: Buildings use to display and stock goods, wares and accessible to the public.
- (g) **Group H:** Residential Uses: Building where families and household live or hostels where sleeping accommodation are provided.
- (h) **Group I:** Storage Uses: Buildings use for the storage of goods, wares or merchandise.
- (i) **Group J:** Mixed use and occupancy: When a structure is occupied for two or more uses, such as structures being used for both commercial and residential purpose.
- (j) **Group K:** Doubtful use Classification: Structure not specifically provided for in the code or the classification of which is doubtful, such structure shall be included in the use group which it most nearly resembles.
- (k) **Group L:** Utility and miscellaneous structure that serve as accessory or service purpose are in this category such as fences, overhead tank, towers, retaining walls, and agricultural buildings.

(e) Section 5: Building Construction Classification

This section identifies the various components of a building; and the design requirements of those components such as the quality expected of the materials to be used, the fire resisting ability. The weather resistance expected of the materials, type of lighting to be provided.

(f) Section 6: Environmental and General Building Requirements

This section is divided into three (3) sub-sections: Environmental requirements, interior requirement and general building limitations. The first one is to guide the means of light, ventilation, and sound transmission control required in the building to be

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occupied by human. The second controls the height of the building, ceiling height, floor area, roof space and opening size. The third section controls the possible extension or alteration to building and structures for the physically challenged.

(g) Section 7: Architectural Design Requirements

This section classifies building into use groups or according to the character of its occupancy. This is to determine whether the conditions to be met for each use group are met. Such conditions include access to building, access to various facilities in the building; like toilet and other design requirements such as height of building and exit provision in case of emergency.

(h) Section 8: Civil/Structural /Geo-Technical Design Requirements

This section covers the structural design of buildings. The necessary loads to be taken into consideration such as live load, dead load and wind load with reference to requisite design codes. Included in this section, is the foundation and retaining wall design. Soil investigation is considered in this section to determine the bearing capacity.

(I) Section 9: Service Engineering Design Requirement

This section is about plans and specifications for the installation or repair, extension or removal of any mechanical equipment such as elevator, conveyor and plumbing system. The second part deals with electrical engineering design requirement.

(J) Section 10: Building Materials and components requirement

This section covers the various materials that are used in building construction. The quality expected of that material such as its durability, functionality, aesthetics, resistance to fire, and grade.

(k) Section 11: Building Construction Requirements

This section applies to all sections of construction operations such as erection, repair, alterations, rehabilitation, demolition or removal of buildings as regards the need to obtain special permit from code enforcement division after approval might have been given for such operation.

(L) Section 12: Post construction requirements

This section deals with the need for protection of the building against fire after construction work is completed. Provision of such system as fire suppression, fire extinguisher, fire detection and smoke control are required to be put in place. Sanitary system should also be made to be functional.

PART 3:

(M) Section 13: Control of Building Works

This section establishes mechanism for the control of building works. This is to be established at Federal, State and Local Government levels. The composition is made up of registered professionals in the built environment and some ministries such as ministry of health, and fire service **(N) Section 14: Reference Standard.** This section makes reference to quality standard required of every operation and materials used.

(O) Section 15: Compliance Forms

This section comprises of forms to be filled and signed by the professional builder after the completion of each operation that it has been done in accordance with design specification.

Causes of Building Collapse and Imperatives of National Building Code Enforcement in Nigeria

Several authors have identified causes of incessant building collapse in Nigeria. Such authors include Oloyede, Omoogun, & Akinjare (2010), Taiwo (2003) and Opara (2007) who summarized causes of incessant building collapse under improper design, incompetent contractor, faulty construction methodology, poor town planning approval/development monitoring process; non-compliance with specifications/standards by developers/contractors; use of substandard materials and equipment; inadequate supervision or inspection/monitoring, economic pressures, incompetent conversion, change of use of buildings, aged buildings and poor maintenance culture.

Data analysis of these factors showed that non-compliance with specifications/standards by developers/contractors; engagement of incompetent contractors and use of substandard materials and equipment were the three prominent causes of building collapses witnessed in the country. Matawal (2012), gave the following causes of building collapse in his paper to include the use of

poor-quality materials on building construction site, improper foundations and lack of sub-soil investigations, overall design of the structure, site supervision, and role of artisans, craftsmen and construction workers. Failures could happen due to faulty construction sequence, scaffolding and formwork faults and early striking of formwork and extra-ordinary loads. Relating the three major causes of building collapse to the provisions of the national building code, it can be observed that the first factor that causes building collapse is non-compliance with specification, followed by incompetent contractors and use of sub-standard materials. These factors were addressed in section 10 of the National Building Code under building materials and component requirements, while the most important aspect is the enforcement of these provisions as contained in section 13 of the code. The first proactive step taken by the code is the need to subject every stage of the design and specification to approval by development control unit in charge of task to be performed. It should be noted that if the documents are not submitted by competent hand, approval will not be given. After the design might have been adjudged to conform to the necessary provisions of the code, this section harps that no development should commence on site without building development permit. Section 13.12.4 states that the execution of the building works including the supervision of the artisans and tradesmen shall be carried out by a registered builder. This provision is to guide against incompetent persons handling project execution in Nigeria.

In the course of construction, provision is made for inspection by code enforcement unit to ensure that the structure is located in accordance with approved plan, the excavations for footing and foundation works are according to dimension, thickness of blinding, and to ensure the designed reinforcements are provided and properly positioned, the quality of concrete designed is used. Other building elements to be inspected are structural framework of the building, concrete slab, and finishes before final inspection will be carried out. Section 15 details the compliance forms required in the course of project execution. These forms include: setting out compliance form, foundation/basement compliance form, roofing, superstructure, mechanical installation, electrical installation, and finishes compliance form. These forms are to be signed by various professionals in

charge of these specialist operations, that they have complied with specifications as contained in the design and should be held liable in case of any eventuality.

Building Collapses in Nigeria

Buildings and other form of structures have been known to have collapsed either in the course of construction or when in use, not just in Nigeria alone but in other parts of the world. The summary of such, though not exhaustive because there might be some that the author could not access are recorded in Table 1.

Table 1: Available Records of Building Collapse in Nigeria between 1974-2013.

S/N	STATE	NO OF COLLAPSES	PERCENTAGE
1	Lagos	220	75.86
2	Oyo State	8	2.76
3	Kaduna State	8	2.76
4	Benue State	1	0.35
5	Osun State	1	0.35
6	Kwara State	1	0.35
7	Imo State	1	0.35
8	Kano State	3	1.03
9	Bayelsa State	4	1.38
10	Cross River State	1	0.35
11	River State	10	3.45
12	Anambra State	6	2.10
13	Edo State	2	0.70
14	Ondo State	4	1.38
15	Ogun State	8	2.76
16	FCT Abuja	10	3.45
17	Kogi-State	1	0.35
	TOTAL	290	100

Source: Afuye and Koko, 2014.

Available records of building collapse between 1978-2013 shows that Lagos state alone accounted for 75.86% of collapses in Nigeria as indicated in Table 1.

CONCLUSION AND RECOMMENDATION

The paper has given an overview of building collapse in Nigeria and the National Building Code. The arrangement of the code and its content is a pointer to the fact that it has really been made to address most of the challenges faced in the building industry most especially, the incessant building collapse in the country. The code enforcement unit is equally another creation of the code that is significant to the success of the

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operations of the code. It is therefore important that the code be passed into law and be made to be functional so that building collapse in Nigeria can be a thing of the past. To cap it all, the paper recommends that, the National Building Code should be passed into law, the various code enforcement units should be constituted and be made to monitor construction activities in Nigeria.

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