
Evaluation of the Enforcement of Project Quality Management Plan in Building Construction in Nigeria

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ABSTRACT

This study looks at the enforcement of project quality management plan as an antidote to building failure in Nigeria with the view to ascertain whether site supervisors know, possess and implement the enforcement of QMP in their sites and if any professional body or government agency visits the sites to implement it. Also, the study looks at ways by which the QMP can be enforced on construction sites. The study adopts the survey design. The population is all the professionals in the construction industry in Abuja, the Federal Capital of Nigeria. Questionnaire and interview were used for data collection. One hundred (100) copies of the questionnaire are administered and seventy-one (71) recovered from the respondents who are Architects, Civil Engineers, Builders, Quantity Surveyors, Town Planners, Land Surveyors, Estate Surveyors, Electrical Engineers and others. The administration of the instrument was done using simple random sampling technique. Findings showed that the quality management plan is neither a document at the development control department nor is it a document at the site. Over seventy percent of the respondents are not in possession of or are aware of the contents of QMP as it is not part of the documents given to developers when approval is granted. Hence, it is recommended among others that QMP should be made available to site supervisors to implement and should be made a part of the design/working drawings and documents to be submitted to the Development Control before approval is granted and from time to time an enforcement team by either Council of Registered Builders of Nigeria (CORBON) or Council for the Regulation of Engineering in Nigeria (COREN) or both be made to go around to enforce the QMP at construction sites.

Keywords: *Building Failure, Enforcement, Quality Management Plan, Quality Assurance.*

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INTRODUCTION

Quality is believed to mean producing a product or service that is of high standard (CORBON, 2010). When applied to the construction process, it is generally understood that quality means that the product or building meets the customer's needs, specification, and fits for purpose (meaning that it does what it supposed to do) and in many cases provides value for money. Bala (2011) defines Quality Assurance (QA) as the process of verifying or determining whether products or services meet or exceed customer's expectation. Quality Assurance verifies that any product being offered to customers, regardless of whether it is new, modified or evolved, is produced and offered with the best possible materials, in the most comprehensive way, with the highest standards. The goal to exceed customer's expectations in a measurable and accountable process is provided by quality assurance. Hence, quality assurance is a process-driven approach with specific steps to help define and attain goals that encapsulate customer's requirements. This process considers design, development, production and service.

The introduction of the Quality Management Plan (QMP) by the Council of Registered Builders of Nigeria (CORBON) was meant to solve the problem of poor building production where buildings that lack integrity were being produced everywhere which lead to building failure/collapse in Nigeria. The plan is well articulated with provisions of standards, methods and specifications for the achievement of minimum standards/quality of buildings during the building production process. Unfortunately, in spite of this good effort, the QMP seems to be lying inside files and in computer systems' hard discs rather than being made available and enforced on construction sites. If standard buildings are to be produced, then there should be a move away from the reactionary posture where people wait for problems to occur before reacting and moving on to being pro-active, by putting in place modalities towards the enforcement of the QMP so that building failure can be reduced to the barest minimum. Bamisile (2004) reports that little efforts have been made to ensure compliance to quality standards in the Nigerian construction industry, which is reflected in the publication of only two codes of practice for use in the construction industry in 1973 by the Standard Organisation of Nigeria (SON) since its inception. These codes are outdated in relation to the present development in construction materials, design and site techniques.

Experience has shown that the development control office in Abuja which is an agency of the Federal Capital Development Authority (FCDA) saddled with the responsibility of planning the city of Abuja who is to implement the QMP is more particular about design details as spelled out in their regulations. No one wants to know how buildings are constructed. Or rather, there is no document instructing the

developer on minimum standards to be adhered to in the production of building elements on site, such as concrete, block work, masonry, etc apart from the specifications given in the structural design by the Engineer. So approved designs are collected and construction begins at the site without any reference to QMP document.

It is mentioned by Akindoyemi (2012) that Building failure is the resultant negative difference between achieved results in building element(s), component or structure and the expected or preferred performance. Sometimes, this may result in the collapse of the building. In other words, a failure can occur when a component of or the whole building is unable to perform the function for which it was designed/ or constructed. According to Ike (2012), the matter of quality in the construction industry is that of inordinate or deliberate desire by a contractor to maximize profit at the expense of quality and standard thereby, exposing the building to the danger of collapse. Furthermore, the rapid urbanization with a huge shortfall in housing, general high cost of building materials leading to the influx of inferior materials in the market and compounded by “quacks” at all levels in the construction industry consequently lead to substandard buildings. He added that many structures collapse when design of such structures fails to specify the minimum strength of materials to be used in the project, and that many developers do not take time to check the quality of sand, blocks, iron bars and the grade of concrete used on site. Ngozi (2012) identifies the causes of building failure as lack of adherence to specification by the unqualified and unskilled personnel, poor and bad construction practices, and the use of substandard building materials and inadequate enforcement of existing building regulations. Mabogunje (2003) adds that many infrastructure are built without the approved plans and do not comply with laid down quality standard and building regulations as evidence in an incessant collapse of buildings in the country. According to Oloyede (2010), low quality building materials coupled with employment of incompetent artisans and wrong construction methodology are the major causes of building failure.

In addition to poor quality materials and quacks in the construction of buildings, experts from the Nigerian Institute of Building (NIOB) have identified lack of total quality management and site development errors as factors responsible for building collapse in the country (The Tide News Online, 2009). Adenuga (2013) says that it is vital that a built-in quality Assurance System is developed to avoid any inefficiency that could result in poor quality of product and services being delivered to the customer. It is in view of the above, that this work is conducted to find out if QMP is being enforced at the construction sites in Abuja, the Federal Capital of Nigeria, with the view to fashioning out the ways for the enforcement of the QMP. Among the objectives to be achieved is to find out if site supervisors have the knowledge of the existence of QMP, whether the site supervisors are in possession of QMP and are implementing its

enforcement in their sites, if any professional body or government agency visits construction sites to enforce the implementation of QMP, and to fashion out the ways for the enforcement of QMP on construction sites.

METHOD

This study adopted the survey research design. The data used in this research were collected via the administration of well-structured copies of questionnaire to site supervisors of different professions in selected construction sites within Abuja. The sampling for this research was fragmented amongst the following professionals in the selected construction sites: Architects, Civil Engineers, Builders, Quantity Surveyors, Town Planners, land Surveyors, Estate Surveyors, Electrical Engineers and others. These groups of professionals constitute the target population. Random sampling was used to select the 100 participants for the study. Tables were used for data presentations. The analysis of the collected data was carried out using frequencies and percentage. Out of the 100 copies of questionnaire administered, seventy-one (71) were retrieved from the respondents and this formed the basis of the study analysis.

RESULTS AND DISCUSSION

Respondents' profession: The respondents' professions are given in Table 1. From the table, it can be seen that 18.31% of the respondents are Architects, 22.5% Civil Engineers and 28.17% are Builders because they are the principal actors in site supervision. Quantity Surveyors, Town Planners, Land Surveyors, Estate Surveyors Electrical Engineers and others 9.86%, 5.60%, 2.80%, 4.20%, 5.60% and 2.80%, respectively. The distribution above is a fair representation of built environment professionals supervising projects on site. By training, Architects, Builders and Civil Engineers are the ones responsible for site supervision of construction works which is 65.98% of the respondents. The remaining 34.02% of the respondents are not supposed to supervise buildings production on site.

Respondents' Qualification: The respondents' qualifications are presented in Table 2. It is seen clearly that 31% of the respondents have National Diploma (ND) and Federal Technical Certificates (FTC), 58% have Higher National Diploma (HND) and Degrees and 11% have Masters degrees and above. This means that HND/ Degree and Masters Degree and above accounted for 69% of the total respondents. This is a fair/good qualification, indicating that a good number of the site supervisors are reasonably trained. This leaves 31% of the respondents as having only Diploma/ FTC.

Knowledge about the Existence of QMP: Table 3 shows the respondents' answers to the question as to whether the respondents have the knowledge of the existence of QMP and if they are in possession of it. From the table 3, it is seen that out of the 34 professionals who said they are aware of its existence, only the 18 Builders claim to know and possess its contents. This gives 25.35% of the 71 respondents who are supervising projects within Abuja metropolis as the only people in possession of the QMP. On the whole 47.89% of the respondents are aware of the existence of the QMP while 52.11% have no knowledge of the existence of the QMP. This is bad, because those who are supposed to implement the QMP are the very ones not aware of its existence. The results on table 3 show the severity of the obscurity of the QMP among construction professionals. It is an alien document to site supervisors who should be the very people implementing it. It can also be seen from the planning regulations of the department of development control that there is no mention of how quality can be achieved in the production of building components on site. Quality is completely silent in their documents indicating that quality is left in the hands of the developer who in most cases is more interested in maximizing profit which will always be against achieving quality. If building failure is to be stopped or reduced, then quality implementation and enforcement must be taken away from the profit focused developer and placed in the hands of someone else whose interest will be to produce buildings of integrity or else will remain in this condition of building failure for a very long time.

Answers to the question as to whether the Site Supervisors are implementing the enforcement of QMP in their sites. It can be seen from table 4 that only 15.49% of the respondents said they try to enforce QMP in their construction works on site while the remaining 84.51% do not. This is a clear indication that QMP is not being enforced in most of the construction sites in Abuja metropolis. No wonder there has been frequent cases of building collapse in Abuja. The question as to whether there is any professional body or government agency that visits the construction sites to implement QMP, is treated in table 5. It is seen from the table that 29.58% of the respondents said their sites were visited by the development control team on their routine checks, but emphasis was more on whether building was set out as given in design and whether set backs are not violated as set out in the site layout plan. Little is said about mix ratio, materials testing and the like. 70.42% of the respondents said their sites were never visited by any professional body or government agency to enforce QMP.

In relation to how QMP can be implemented or enforced on construction sites, the respondents were asked to choose from among the following options as how they think the QMP can be implemented or enforced on their sites.

1. By providing us with QMP to implement or enforce.
2. By making QMP a part of documents submitted to Development Control for

- approval alongside designs.
3. By a consistent visit to sites by an enforcement team from CORBON/COREN
 4. All of the above.

All the respondents ticked option (4) above giving 100% agreement with all the options. The results gave 69% of respondents as having Higher National Diploma (HND), Bachelor and Masters Degrees. This is indicative of a reasonable training which is good enough for project supervision. The results also show that more than half (52.11%) of the respondents do not even know of the existence of the QMP talk more of possessing and implementing its contents. This is not a good development for the construction of quality projects. As for implementing the QMP, only 15.49% of the respondents implement the document on their project sites, leaving 84.51% to determine the quality of their buildings on their own. It is a known fact that due to the desire for higher profits, contractors/builders always sacrifice quality for their profits. This is not a healthy development as far as the construction of buildings of integrity is concern. On the matter of an enforcement team from either CORBON/COREN or the Development Control visiting construction sites to enforce quality, 70.42% of the respondents said their sites were never visited at all, while 29.58% that said their sites were visited said the team came from the Development control whose emphasis was to check compliance of setbacks as provided for in the design and no issue of quality was ever raised. Finally respondents agreed that there is the need for the QMP to be made available to them on site to implement and it should be made a part of the design/working drawings and documents to be submitted to the Development Control before approval is granted, then from time to time an enforcement team by either CORBON or COREN or both be made to go round to enforce the QMP. In this way, Quality Buildings will be constructed, hence a reduction in building failure/collapse.

Table 1: Respondents' Profession

Profession	Frequency	Percentage
Architects	13	18.31
Civil Engineers	16	22.5
Builders	20	28.17
Quantity Surveyors	07	9.86
Town Planners	04	5.6
Land Surveyors	02	2.8
Estate Surveyors	03	4.2
Electrical Engineers	04	5.6
Others	02	2.8
Total	71	100%

Source: Fieldwork, 2015

Table 2: Respondents' Qualification

Qualification	Frequency	Percentage (%)
ND/FTC	22	31
HND/DEGREE	41	58
MASTERS & ABOVE	08	11
Total	71	100%

Source: Fieldwork, 2015

Table 3: The Question as to whether the Site Supervisors have the Knowledge of the Existence of QMP and if they Possess it

Profession	Frequency		Total	Percentage		Total
	Yes	No		Yes	No	
Architects	4	9	13	5.63	12.68	18.26
Civil Engineers	8	8	16	11.27	11.27	22.54
Builders	18	2	20	25.35	2.82	28.17
Quantity Surveyors	3	4	7	4.23	5.63	9.86
Town Planners	0	4	4	0	5.63	5.63
Land Surveyors	0	2	2	0	2.82	2.82
Estate Surveyors	0	3	3	0	4.22	4.22
Electrical Engineers	1	3	4	1.41	4.22	5.63
Others	0	2	2	0	2.82	2.82
Total	34	37	71	47.89	52.11	100

Source: Fieldwork, 2015

Table 4: The Question as to Whether the Site Supervisors are Implementing the Enforcement of QMP in Their Sites

Profession	Frequency		Total	Percentage		Total
	Yes	No		Yes	No	
Architects	0	13	13	0	18.32	18.32
Civil Engineers	0	16	16	0	22.52	22.52
Builders	11	09	20	15.49	12.68	28.17
Quantity Surveyors	0	07	7	0	9.86	9.86
Town Planners	0	04	4	0	5.63	5.63
Land Surveyors	0	02	2	0	2.82	2.82
Estate Surveyors	0	03	3	0	4.23	4.23
Electrical Engineers	0	04	4	0	5.63	5.63
Others	0	02	2	0	2.82	2.82
Total	11	60	71	15.49	84.51	100%

Source: Fieldwork, 2015

Table 5: The Question as to Whether There is Any Professional Body or Government Agency that Visits the Construction Sites to Implement QMP

Profession	Frequency		Total	Percentage		Total
	Yes	No		Yes	No	
Architects	4	9	13	5.63	12.68	18.31
Civil Engineers	5	11	16	7.04	15.49	22.53
Builders	4	16	20	5.63	22.54	28.17
Quantity Surveyors	2	5	7	2.82	7.04	9.86
Town Planners	2	2	4	2.82	2.82	5.64
Land Surveyors	1	1	2	1.41	1.41	2.82
Estate Surveyors	1	2	3	1.41	2.82	4.23
Electrical Engineers	1	3	4	1.41	4.23	5.64
Others	1	1	2	1.41	1.41	2.82
Total	21	50	71	29.58	70.42	100%

Source: Fieldwork, 2015

CONCLUSION AND RECOMMENDATIONS

The conclusion drawn from the findings of this research were that majority of the respondents have no knowledge of the existence of the QMP. Very few of the respondents tried to enforce QMP in their construction works on site. Construction sites were not visited by the development control team on their routine checks as should be, rather emphasis was more on whether building was set out as given in design and whether set backs are not violated as set out in the site layout plan rather than on QMP. Based on the conclusion drawn, it is recommended that QMP should be made available to site supervisors to implement, it should be made a part of the design/working drawings and documents to be submitted to the Development Control before approval is granted and from time to time an enforcement team by either Council of Registered Builders of Nigeria (CORBON) or Council of Registered Engineers of Nigeria (COREN) or both be made to go round to enforce the QMP at construction sites.

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