Construction Standard and Regulation in Nigeria

RUYA Fadason, CHITUMU Danladi, and JATAU Tchad Sharon, Nigeria

Key words: Construction, Construction Standards, Construction Regulations, Nigeria

SUMMARY

The construction industry in Nigeria is characterized with problems which impair the standard of construction and which, according to Adenike (2006), Grema (2006) and Bamisile (2004), are often hinged on quality of materials and workmanship and can be controlled by proper use of the appropriate regulations. Unfortunately, specifications standards and construction regulations as drivers of good standard of construction are suffused with a lot of challenges.

The study was guided by the following objectives; to examine the level of construction standard in Nigeria, to examine the effectiveness of instituted construction regulations in Nigeria and to analyze the problems associated with construction standard and regulations in Nigeria.

The data retrieved were analysis using simple percentage and frequency count with the aid of software version 20.0. The study employed spearman correlation to test the hypothesis, questionnaire to collect data

The study findings revealed that there is significant relationships between construction standard and instituted regulations in Nigeria, construction standard helps improved the instituted regulations in Nigeria. Construction regulations are widely regarded as the drivers of good standard of construction in most of the construction companies in Nigeria.

Using the findings implied that there is significant relationship between construction standard and instituted regulations in Nigeria. Since the spearman rho value of 0.886 indicates a positive relationship between respondent that said that there is significant (0.000) relationships between construction standards and instituted regulations in Nigeria and those that said that construction standard helps improve instituted regulations in Nigeria. From the study it is recommended that; the construction company should always make use of regulations has a negative effect on the product and service of the construction company in Nigeria and the federal government of Nigeria should see to the effective adherence to the regulations so as to improve the efficiency of the construction company in the government's Ministerial Development Agencies (MDAs).

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1. INTRODUCTION

The importance of good structures (building, road etc.) in the society has necessitated the need for improvements in the standard of construction, this is possible through coordinated and committed participation of all stakeholders in the industry using the appropriate regulations as the key guide and document for quality management. However, there has been increase in cases of building collapse in Nigeria in recent times, which has brought to the fore the effectiveness of instituted construction regulations.

The construction industry in Nigeria is characterized with problems which impair the standard of construction and which, according to Adenike (2006), Grema (2006) and Bamisile (2004), are often hinged on quality of materials and workmanship which can be controlled by proper use of the appropriate regulations. Unfortunately, specifications standards and construction regulations as drivers of good standard of construction are suffused with a lot of challenges.

In Nigeria, there are few existing National Standards relating to general construction (buildings, roads etc) and many of them are not even known (Bamisile, 2004). As a result, the designers use mainly British and American Standards and Codes despite the fact that local requirements are often different. Serpell et al. (2002) observed that the development process of standards is difficult, cumbersome and unstable. This aggravates the situation with respect to regulations. Furthermore, many designers in Nigeria lack adequate knowledge with respect to the function and performance of the materials and components they specify (Adafin et al., 2011 and Folorunsho and Ahmad, 2013).

1.1 Statement of the Problem

According to Bamisile (2004) regulations, which are supposed to collate all relevant standards for incorporating them in the construction projects, and which constitute the key document for quality management, are frequently absent in Nigeria. The results of the survey carried out by Lam et al (2004) showed that lack of co-ordination, ambiguities, irrelevant clauses, inappropriate standards and reluctance of contractors to embrace quality culture are the frequent problems in drafting of specifications. Regulations are often not complied within quality control of materials and work on site (Sani and Othman, 2011). Gelder (2007), categorized the problems in practice into two broad groups - unsound regulations and unused regulations. Unsound regulations arise because regulations are often not well-written. Unused regulations refer to problems that arise when specified products/services are not used. The causes of unsound regulations, according to Gelder (2007) are misuse or misquoting of standards, non-compliance with regulations, pseudo-specifications (more content than needed and not job specific) and conflict with drawings; unsound regulations are those that are unused by contractors and unused by contract administrators or construction enforcement officers.

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1.2 Research Questions

1. What is the level of construction standard in Nigeria?
2. What is the effectiveness of instituted construction regulations in Nigeria?
3. What are the problems associated with construction standard and regulations in Nigeria?

1.3 Objectives of the Study

1. To determine the level of construction standard in Nigeria.
2. To examine the effectiveness of instituted construction regulations in Nigeria.
3. To analyze the problems associated with construction standard and regulations in Nigeria.

1.4 Hypothesis

H_O: There is no significant relationship between construction standard and instituted regulations in Nigeria

H_A: There is significant relationship between construction standard and instituted regulations in Nigeria

2. LITERATURE REVIEW

The Construction industry is a large, dynamic, and complex industry that plays an important role to the Nigerian economy. Construction workers and employers build our roads, houses, and workplaces and repair and maintain our nation's physical infrastructure. Construction work can involve building of new structures, which may include activities involved with subdividing land for sale as building sites or preparation of sites for new construction. Construction work also includes renovations involving additions, alterations, or maintenance and repair of buildings or engineering projects such as highways or utility systems. When the construction industry is examined from a global context, its socio-economic significance becomes obvious. The industry is the world's largest industrial employer (111 million employees) and in most countries it accounts for more than half of capital investment and as much as 10 per cent of GNP (Du Plessis, 2001).

Construction work covers many activities, techniques, materials and hazards and it is this diversity that increases the probability of accidents' occurring. There is a commonality of accidents within the industry and the factors that can contribute indirectly to an accident. An accident may be defined as any unplanned event that resulted in injury or ill health of people, or damage or loss to property, plant, materials or the environment. A recurring theme is that people are killed during simple, routine work and in many cases a clear lack of planning and compliance with standard contributed to the tragedy. However, safety and safeguard of life has been lacking in the Nigeria construction industry (Ndirangu, 2009). An underlying belief is that the majority of accidents are not caused by careless workers but by failures in compliance with standard and control which ultimately is the responsibility of management.

Construction regulations are statutory instruments that seek to ensure that the construction policies set out in the relevant legislation are carried out (Gelder, 2004). Construction regulations approval

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is required for most construction work in any given country. In construction, regulation involves registration of contractors, projects, skilled construction workers, construction site supervisors, training institutions, and provisions relating to collection and payment of the construction levy (G.O.K, 2012). Generally in every country, construction regulation authorities are established to harmonize construction laws found in statutes which may contradict each other, curb uncontrolled and unchecked physical planning of buildings and construction, control and enforce the mechanisms on the application of the Building Code in the construction industry, prevent easy entry and penetration of unqualified contractors, and improve on the bureaucratic requirements and procedures in approval of building plans. Further, construction regulation authorities eliminate corruption cases in the building industry, emphasize on both material quality and contractor performance, and revise the Building Codes to ensure relevance (Nahinja, 2014). Construction regulations are statutory instruments setting out the minimum legal requirements for construction works and relate primarily to the health, safety and welfare of the workforce which must be taken into account when planning construction operations and during the actual construction period (Chudley & Greeno, 2006). According to Mohammed (2010), construction regulations must incorporate a provision that the contractor who plans to perform any construction shall before carrying the work notify in writing the competent authority for construction planning. Traditionally, cost, quality and time have constituted the parameters within which projects have been managed. However, increasing awareness of the role of standard in overall project performance, and the inclusion of standard technique and materials as a project performance measure by organizations has improved services in the sector. The number of large-scale construction accidents in Nigeria in the recent past has further raised the level of awareness on the need for construction standards.

Regulation of building construction in Nigeria is done through a statutory authority known as the Council of Registered Builders of Nigeria - CORBON, whose function is to establish and oversee the construction industry and coordinate its development. The Council of Registered Builders of Nigeria - CORBON is mandated to encourage the standardization and improvement of construction techniques and materials, provide, promote, review and co-ordinate training programs for skilled construction workers and construction site supervisors, accredit and register contractors and regulate their professional undertakings, accredit and certify skilled construction workers and construction site supervisors, develop and publish a code of conduct for the construction industry (GOK, 2011).

2.1 Regulatory Framework and Construction Standard

Regulation is treated as synonymous with law. Regulations are rules or norms adopted by government and backed up by some threat or consequences, usually negative ones in the form of penalties. While a regulatory framework on the other hand, refers to a system of regulations and the means used to enforce them. These are usually established by industry regulatory bodies to regulate the specific activities (Edinburgh, 2003). According to the Nigerian Institute of Quantity Surveyors (NIQS), regulatory framework is the due process of regulation surrounding a single topic that entails all of the relevant legislative documents (acts, regulations, annexes) and describes the agency or body responsible for administering the framework.

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The Building Regulation finds it necessary to identify the factors that promote and determine the future regulation process of the building and regulation process and associated standards and guidance in the next 20 years in relation to sustainable construction issues (Architect and Quantity Surveyors Act, 2010). The factors are based on emerging scenarios relating to physical, social and economic changes that are taking place in the country and globally like international requirements, human needs and responsibilities and technological changes. Edinburgh (2003) indicated that some of the factors include climate changes, resource conservation, waste minimization, biodiversity and health and well-being of individuals and communities in and around building. The relationship between construction practices and regulations and a variety of economic growth, environmental quality and social prosperity factors is increasingly being recognized globally (Christensen, 2009). The Current Regulatory Framework in developing countries like Nigeria results in conflicts due to inadequacy at the boundaries of the responsibilities of its composite agencies and inevitably policy and development aspirations (Grimshaw, 2001). An ideal situation may be unachievable, but few would argue that no improvement is possible. The sustainable development agenda in particular has already brought many important issues and conflicts to the fore particular in respect of planning, land use and construction activities (Warren & Wilkinson, 2008). The effectiveness of the current regulatory frameworks in Nigeria are therefore of uppermost importance in building standard in the construction sector.

2.2 Various Professional Regulatory Boards in the Nigerian Construction Industry

2.2.1 Quantity Surveyors Registration Board of Nigeria (QSRBN)

Is the regulatory body of the quantity surveying profession and practice in Nigeria. It was established by Decree No. 31 of December 5, 1986, now CAP 383 Laws of the Federation of Nigeria (LFN). It goals includes:
- To ensure that all quantity surveying graduates produced by higher institutions of learning in Nigeria meet internationally required standards.
- To eliminate quackery and ensure that all Quantity Surveyors employed in both the private and public sectors are registered with QSRBN.
- To ensure that firms carrying out quantity surveying services in the country are registered with the Board and adhere strictly to the best practices and code of conduct of the profession.

The body executes its mandate through training, registration and enhancement of ethical practice. According to the regulations, no person should practice under any name, title or style containing any of the words or phrases "quantity surveyor" or "quantity surveying" unless he is registered under the Law as a Quantity Surveyor. An Architect is a person trained and licensed in the planning and designing of buildings, and participates in supervising the construction of a building. The work of an architect is to advise his clients, study their needs, to prepare, direct and co-ordinate design and to supervise works executed under a building contract. An architect or quantity surveyor in Nigeria must have a minimum of five years of approved training followed by a minimum of one year of professional experience in Nigeria to the satisfaction of the Registration Board or satisfies the Board that he/she has otherwise acquired an adequate knowledge of Nigeria building contract procedures.

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2.2.2   The Society of Chartered Surveyors (2006)

Identifies that upholding ethical principles is a key reason why people rely on professional bodies. Competence and trust are central elements in generating confidence in the professions (The Society of Chartered Surveyors, 2006). Cartlidge (2011) argues that professions can only survive if the public retains confidence in them. Transparency and ethical behaviour are particularly important for quantity surveyors who are involved daily with financial transactions such as procurement, contractual arrangements, payments and valuations (Cartlidge, 2011).

2.3 Nema and Construction Standard

The National Environment Management Authority (NEMA) is a body established under the Environmental Management Act of the laws of Nigeria to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment. NEMA has the primary responsibility of implementing environmental safeguards, although many actors have responsibilities including civil society, private consulting firms, development banks which finance infrastructure and other government actors including local government and the court system. Currently, the system suffers from inadequate funding, corruption, a lack of engagement with important community stakeholders, gaps or duplications of regulations, and a misunderstanding by society at-large of the benefits of a sustainable and standard construction. These serious issues result in little oversight of development projects with potentially huge environmental impacts.

2.4 Construction Practice in Nigeria

Organized construction practice in Nigeria dates back to the 1930s when the very few construction activities of significance in the country were handled by the Public Works Department (PWD) and the Royal Army Engineers which was later transformed into the Nigerian Army Engineers. Direct labour was the mode of construction project delivery at this time. Construction contracting in Nigeria began in the 1940s with a few British and Italian companies coming into operation (Olowo-Okere, 1985). Nigeria's independence in 1960 brought an upward trend in construction activities and until the late sixties, most of the available construction organizations were over-stressed with contracts. Construction contracting in Nigeria witnessed an overwhelming upsurge during the "oil boom" of the 1970s and up to the end of the second republic in 1983. Unfortunately, the period also witnessed an unprecedented level of degeneration of standards in the project delivery process. Projects were poorly conceived, carelessly planned and shabbily executed. The result was unreasonably high time and cost overruns, low quality and widespread abandonment. This widespread abuse of the contract system was probably responsible for the National Council of Work's recommendations in its 13th annual conference in 1984. It recommended direct labour system for capital project delivery, which gained wide acceptance at all the three tiers of government, under the military government of that era. Although some impressive results were obtained at the initial stage of this regime (Dawaki, 1987; Anonymous 1989); abuses were also later discovered. For example, it has been said that direct labour projects are usually ineffectively managed to the extent that it may become even costlier and longer to execute projects than when the contract approach is used (Machina 1989, Sanni 2007). What is of fundamental importance

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therefore may not be the mode of delivery adopted but the integrity, managerial and professional competence of the executors. The public sector constitutes the major client of the construction industry in Nigeria, and the traditional approach in this sector is to handle building design and construction in two separate phases and by two separate teams – the design and construction teams. The design team usually consist of consultant or in-house professionals such as: architect, quantity surveyor, structural engineer and services engineer (electrical and mechanical). The construction team, on the other hand, usually consists of a major constructor and a number of sub-contractors who are selected on the basis of lump sum competitive tender, undertaken after completion of most of the design activities. This approach offers the lowest chance for integration of construction experience into design. The result is the delay of project execution and high level of difference between the designed and constructed products. Gidado (1996) and Ogunsanmi (1997) opined that the system of contract procurement is a strong factor in determining the nature of relationships between the design standard and the construction teams. Other procurement methods that aim at better integration of the two sets of experience, and better overall project success have also evolved in the country. Such other methods include: management contracting, construction management, partnering and design and build. Until 2006, Nigeria was without uniform regulations, guidelines and standards for the design, construction and operation/maintenance of buildings. This manifested in a range of deplorable state of affairs in the building construction industry and in the built environment.

3. RESEARCH METHODOLOGY

The population of study comprises the entire population of registered members of Associations of Architects and Surveyors in Edo State. The sampling method used for this study is convenience sampling with a sample size of 60 registered members. The research instrument used for this study is the questionnaire. The questionnaire has the capability of eliciting factual data from a given population.

3.1 Reliability of the Instrument

The reliability of the instrument was done by using the test-retest method. That is to say, the instrument was pre-tested twice before proceeding to administer the instrument to the respondents. On reliability correlation testing using SPSS, the Cronbach's alpha of 0.73 was obtained. The closeness of this value to 1 indicates that the instrument is very reliable.

3.2 Method of Data Collection

Distributed questionnaires administered to the respondents (registered architects and Quantity surveyors) were done personally. The questionnaire was retrieved from the respondents immediately on completion to avoid mutilation and to record high response rate from the respondents.

3.3 Method of Data Analysis

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The retrieved copies of questionnaire were analyzed using simple percentage and frequency count with the aid of the software SPSS version 2.0.

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Below is the analysis of collected data

TABLE 1 Gender of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	35	58.3	58.3	58.3
	female	25	41.7	41.7	100.0
	Total	60	100.0	100.0	

Source: Field Survey, July, 2016.

Table1 above shows that 58.3% of the respondents are male while 41.7% are female. It can be deduced from this that both genders were adequately represented.

TABLE 2 There is a significant relationship between Construction Standard and Instituted Regulations in Nigeria

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	30	50.0	50.0	50.0
	AGREE	9	15.0	15.0	65.0
	DISAGREE	11	18.3	18.3	83.3
	STRONGLY DISAGREE	10	16.7	16.7	100.0
	Total	60	100.0	100.0	

Source: Field Survey, July, 2016.

Table 2 above reveals that 50% Strongly Agree that there is a significant relationship between construction standard and instituted regulations in Nigeria, 15% Agree, 18.3% Disagree while 16.7% percent Strongly Disagree to the question. From the analysis of table 2, it can be said that the respondents strongly agree to having a significant relationship between construction standards and instituted Regulations in Nigeria.

TABLE 3 Do Construction Standard aid the improvement of Instituted Regulations in Nigeria

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	10	16.7	16.7	16.7
	AGREE	31	51.7	51.7	68.3

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		Frequency	Percent	Valid Percent	Cumulative Percent
	DISAGREE	12	20.0	20.0	88.3
	STRONGLY DISAGREE	7	11.7	11.7	100.0
	Total	60	100.0	100.0	

Source: Field Survey, July, 2016.

Table 5 shows that respondents merely agree that construction standard helps improve instituted regulation in Nigeria with a statistics of response of 51.7% while 20% disagree. Furthermore, 16.7% strongly agree and 11. 7% strongly disagree. From the above, it can be concluded that the respondents agree that construction standards aids the improvement of instituted regulations in Nigeria.

TABLE 4

Does construction regulations have any significant effect on the level of industry standard of construction companies in Nigeria

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	25	41.7	41.7	41.7
	AGREE	20	33.3	33.3	75.0
	STRONGLY DISAGREE	15	25.0	25.0	100.0
	Total	60	100.0	100.0	

Source: field survey, July, 2016.

The table above reveals the opinion of respondents to be 41.7% strongly agree that construction regulations have significant effect on the level of industry standard of Construction Companies in Nigeria. 33.3% agree while 25% strongly disagree. Therefore, construction regulations have a significant effect on the level of industry standard of Nigerian construction firms in Nigeria.

TABLE 5

Unused regulations is one of the factors affecting the products and services of construction companies in Nigeria

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	30	50.0	50.0	50.0
	AGREE	15	25.0	25.0	75.0
	DISAGREE	5	8.3	8.3	83.3
	STRONGLY DISAGREE	10	16.7	16.7	100.0
	Total	60	100.0	100.0	

Source: Field Survey, July, 2016.

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50% of respondents strongly agree that unused regulations is one of the factors that affects the products and services of construction companies in Nigeria. 25% agree, 8.3% disagree and 16.7% strongly disagree. From table 5, it can be concluded that the respondents strongly agree that unused regulations is one of the factors which affects the products and services of construction companies in Nigeria

TABLE 6
Construction Regulations is widely regarded as the drivers of good standard of construction in most of the construction companies in Nigeria

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	28	46.7	46.7	46.7
	AGREE	15	25.0	25.0	71.7
	DISAGREE	2	3.3	3.3	75.0
	STRONGLY DISAGREE	15	25.0	25.0	100.0
	Total	60	100.0	100.0	

Source: field survey, July, 2016.
Table 6 reveal from responses that construction regulations is widely regarded as the driver for good standard of construction in most of the construction companies in Nigeria with a percentage of 46.7 (strongly agree) while 25% agree, 3.3% disagree and 25% strongly disagree.

4.1 Testing of Hypotheses

Hypothesis 1
H_O: There is no significant relationship between construction standard and instituted regulations in Nigeria
H_A: There is significant relationship between construction standard and instituted regulations in Nigeria
Level of significance: 0.05
Decision rule: reject the null hypothesis if the calculated p-value is less than the level of significance; hence or otherwise accept the null hypothesis.

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<p style="text-align:center">correlation</p>

			There is significant relationship between construction standard and instituted regulations in Nigeria	Construction standard helps improve instituted regulation in Nigeria
Spearman's rho	There is significant relationship between construction standard and instituted regulations in Nigeria	Correlation Coefficient	1.000	.886**
		Sig. (2-tailed)	.	.000
		N	60	60
	Construction standard helps improve instituted regulation in Nigeria	Correlation Coefficient	.886**	1.000
		Sig. (2-tailed)	.000	.
		N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

CONCLUSION BASED ON THE SPEARMAN CORRELATION TABLE ABOVE
Since the p-value (0.000) is less than the level of significance (0.05), we reject the null hypothesis and conclude that there is significant relationship between construction standard and instituted regulations in Nigeria.
The spearman rho value of 0.886 indicates a positive relationship between the responses of the respondents that said that there is significant relationship between construction standard and instituted regulations in Nigeria and those that said that Construction standard helps improve instituted regulation in Nigeria.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

From the responses of the respondents and from the result of the data analysis the study therefore concluded that there is significant relationship between construction standard and instituted regulations in Nigeria.

5.2 Recommendation

From the responses above and the conclusion drawn we found out that proper construction work hand in hand with the regulatory quality. The study therefore advises that:
1. Construction companies should always make use of regulations since unused regulation has a negative effect on the product and service of the construction companies in Nigeria

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2. The Federal Government of Nigeria should see to the effective adherence to the regulation so as to improve the efficiency of the construction company in the government parastatals

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BIOGRAPHICAL NOTES

Ruya Fadason was born in 1960 in Kaduna State. He holds a HND (QS) from Kaduna Polytechnic in 1989, PGD (Bldg.) and M.Sc. (QS) from Ahmadu Bello University, Zaria in 2009 and 2015 respectively.

With over 25 years of active professional practice in both public and private organisations, Ruya has served at the Nigerian Institute of Quantity Surveyors both at State and National level and other affiliated international organizations at different levels and capacities. He was a member of an Ad-Hoc Committee set up by NIQS National Executive Council in 2013 that produced the Building and

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Engineering Standard Method of Measurement (BESMM 4) in 2015. He is a Fellow of the Nigerian Institute of Quantity Surveyors and a Registered Quantity Surveyor. He is currently a board member of the Quantity Surveyors Registration Board of Nigeria (QSRBN), the Managing Director/CEO of Rutfa Quantz Consultants a firm of Quantity Surveyors and Project Managers, Kaduna, Kaduna State, Nigeria.

Danladi Chitumu was born in 1971 in Kaduna State. He holds a B.Sc. (QS) from Ahmadu Bello University, Zaria in 2004. He has been a member of the Nigerian Institute of Quantity Surveyors and a Registered Quantity Surveyor since 2011 and 2012 respectively.

Danladi began his working career in Rutfa Quantz Consultants in 2005 and later joined the academia in 2006 and lectures at the Department of Quantity Surveying, Nuhu Bamalli Polytechnic Zaria where he has been till date. Danladi has served the Nigerian Institute of Quantity Surveyors at the State level at different levels and capacities.

Tchad Sharon Jatau was born in 1983 in Kaduna State. She holds a B.Tech (QS), from Federal University of Technology Minna in 2007, and Master in Facility Management (MFM) from Ahmadu Bello University Zaria in 2012. She has been a Member of the Nigerian Institute of Quantity Surveyor s since 2015.

Tchad Sharon began a working career after her national service in Rutfa Quantz Consultants in 2009 and later joined the academia in 2012 and lectured at the Department of Quantity Surveying, Nuhu Bamalli Polytechnic, Zaria from where she moved to the Department of Quantity Surveying, Kaduna State University where she has been till date. Her areas of research interest are Construction Management, Facilities Management, Construction Technology and Sustainable/ Green Construction.

CONTACTS

Mr. Ruya Fadason
Rutfa Quantz Consultants,
No. 9 Jega Close off Gwari Avenue, Barnawa G. R. A. ext.
Kaduna. Kaduna State,
NIGERIA,
Tel: +2348037043562; +2348059002455
Fax:
Email: ruyateef@yahoo.com
Web site:

Mr. Danladi Chitumu
Department of Quantity Surveying,
School of Environmental Studies
Nuhu Bamalli Polytechnic,
Zaria, Kaduna State,
NIGERIA.
Tel: +2348026774098

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Fax:
Email: danchisto@yahoo.com
Web site:

Mrs. Tchad Sharon Jatau
Department of Quantity Surveying,
Kaduna, Kaduna State,
NIGERIA.
Tel: +2348065502507
Fax:
Email: aysharonah@yahoo.com
Web site:

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