

Cost Management and Control of Building Projects in Nigeria; The Role of The Architect

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Abstract: Building projects entail numerous closely connected tasks. The management of such tasks is highly difficult, which makes it challenging for clients. According to Shamsudeen, 2009, such intricate and interconnected operations lead to cost issues that call for efficient cost management and control procedures. One of the most crucial activities in a building project is cost management and control, which begins at the conceptual stage of every project by giving clients and the design team cost recommendations to help the design be completed within the allocated budget (Cunningham, 2015).

This research seeks to address the role of architects in cost management and control of building projects in Nigeria by thoroughly examining the following topics—cost management, cost control, the significance of cost management in a building project, a review of the members of the building team and their roles, and enumerating the statutory role and responsibilities of Architects in building projects in Nigeria.

Every client hopes for a building project to be completed on time and within budget. The biggest problem an architect faces is controlling and managing cost of building project's during planning and execution to prevent cost overruns. This study focused on architects and their role in cost management and control of building projects in Nigeria. This study suggests that the architect, who serves as the prime consultant in building projects, takes the lead in cost management and control.

Keywords: Building Project, Cost Management, Cost Control, Building team, Architect.

I. INTRODUCTION

Building projects are dynamic and risky endeavours with frequently unpredictable results (Cunningham, 2017). Buildings are constructed on-site under extremely varied conditions and restrictions, which defines the construction sector (Cunningham, 2017). Each project presents its own set of design and construction issues, and is often carried out by temporary teams established just for that project (Cunningham, 2017).

Building projects take a long time to complete, and conflicts between the priorities of quality, time, and cost are essentially constant.

People do start their projects without realizing that someone must take the overall lead to organize activities of the building team to avoid cost overrun.

Building projects entail numerous closely connected tasks. The management of such operations is quite difficult for the

client and complicated. According to Shamsudeen (2009), intricate and interconnected building project activities produce issues that necessitate efficient cost management and control procedures.

Giving clients and the design team cost advice at the beginning of every project is one of the most crucial responsibilities done to ensure that the design is completed within the allocated budget (Cunningham, 2015).

Statement Of The Problem

Cunningham claims that in 2017, many people begin their building projects without realising that someone must oversee, organize, and plan all aspects of the project before it even gets off the ground. Clients always prioritize costs and this frequently determine whether a building project will succeed or fail.

Aim Of The Study

This study seeks to address the role of architect in cost management and control of building projects in Nigeria.

Objectives

The objectives of this study includes:

1. Definition of cost management.
2. Definition of cost control.
3. To outline the importance of cost management control.
4. Review the members of the building team and their duty.
5. Examining the role and responsibilities of architects in construction project

II. RESEARCH METHODOLOGY

The methodology adopted for this paper is qualitative research methodology. A secondary source of data collection was used in this project. This kind of research methodology is used to explore and investigate a particular phenomenon in order to get a deeper understanding of the specific problem being investigated and potential solutions.

Secondary data or information is gathered by a means other than the author's own, such as:

- a. Use of existing literature from textbooks, publications, magazines, and unpublished materials.

- b. Use of the internet for further information and data collection.
- c. Internationally recognized and accepted research encyclopedia.

Cost Management And Control

Cost management is a task that involves the procedures needed to keep projects' finances under good control (evaluating, estimating, organizing, controlling, analyzing, forecasting and reporting the cost information). It is focused with the procedure of organising and managing a project's or company's budget. It entails tasks like planning, estimating, budgeting, financing, funding, managing, and controlling expenditures in order to finish a project within the allocated spending limit. Cost management includes the entire project life cycle, from the early planning stage to the evaluation of the project's actual cost performance. Cost estimation and cost control make up cost management. Estimating project costs entails determining an estimate of the costs of the resources required to meet project objectives (Cunningham, 2015).

Theodorakopoulos et al. 2009, on the other hand, emphasised that cost control is a continuous activity to keep the project within cost objectives and meet the expectations of the client. The cost estimate and the actual construction cost should be connected by a cost control system. Its primary goal is to keep costs within the parameters of the building budget or cost estimate. It is done to keep the difference between the initial cost and the end cost to a bare minimum.

Cost management is a crucial component of the project's construction management phase. Bennett (2003), cited by Cunningham (2015), claimed that the contractors' cost control system serves the following purposes: first, to provide a way to compare actual expenses with budgeted ones; second, to create a database of productivity and cost performance data; and third, to produce data for valuing contract modifications and variations. For contractors, cost control during the post-contract phase is crucial since it affects how profitable their contracts will be.

The process of cost control during the construction phase of construction projects in the Nigerian construction industry is influenced by a number of factors. The project report aims to evaluate the post-contract cost control of contracting organisations on construction projects in Nigeria based on the background information provided above.

Cost Control

Cost control is a challenging responsibility that architects and project managers take on when working on construction projects. It entails monitoring progress constantly, assessing plans, giving directions, and corrective action when necessary (Kerzner, 2003). The goal of project management and control in the construction business is to guarantee that the projects are completed on schedule, within budget, and while accomplishing the project objectives. Every building project

starts with the conceptual phase of cost control, and it finishes with the approval of the final account.

The primary methods used by cost managers seem to be cost control. The majority of individuals today, however, incorrectly perceive the idea of cost control. It is not limited to simple monitoring of the costs and registration of financial information, planned and unplanned expenses a firm may face (Charoenngam and Sriprasert, 2001). In the hands of an architect or project manager, cost control can be a useful tool for gathering pertinent data and creating projections of potential dangers and possibilities. Here, the cost management strategy's preventive aspect is highlighted. Cost control can protect a company from unpleasant and unforeseen surprises (J. A. Brown, 2003).

The Importance Of Cost Management And Control In A Building Project.

As stated previously, cost management and control starts from the conceptual stage of every project and runs throughout the execution stage. The cost of a project is determined by the selection of materials, the construction process, and the directions provided by the architects. As it is written in the holy book, in the book of St. Luke 14, 28–30, Let's say one of you wants to construct a tower. Will he not first sit down and calculate the cost to see whether he has the necessary funds to finish it? Because if he starts building but is unable to finish, everyone who sees it will make fun of him and say, "This person started to build but was not able to finish."

Cost management and control is therefore crucial in building projects because almost all clients have restricted resources for a building project.

The architect strives to determine the client's needs and budget during the pre-contract to post-contract stages of a project. During the contract stage, he is conscious of the construction process, the selection of materials, and the directions given. This technique establishes a cost cap from the beginning because many clients can argue that expenses cannot go beyond this cap.

For the purpose of this paper the following question will be answered:

What is a building project?

As stated in the 2016 Architects Registration Council of Nigeria (ARCON) conditions of engagement as published, A building project is defined as "the building and/or other construction works which the Client desires to undertake and mentioned in the precise conditions for which the services are to be delivered.

Who is a client?

According to the 2016 ARCON conditions of engagement as published, a **client** means the party in agreement who engages the services of a consultant and contractor for a building project.

Who is an Architect?

According to ARCON degree No. 10 of 1959, architecture is the art, science in theory and practise of designing, erecting, commissioning, maintaining, and coordinating allied professional inputs to buildings or parts thereof, as well as the layout and master plan of such buildings or group of buildings forming a comprehensive institution, establishment, or neighbourhood, as well as any other organised space enclosed or open required for human or any order activities. An architect is a person who has received training in such a task.

A professional architect, architectural firm, or architectural organisation that has been duly certified, registered, and granted a licence by the Architects Registration Council of Nigeria (ARCON) to engage in the practise of architecture is also referred to as a "architect" in accordance with the 2016 ARCON conditions of engagement as published. A person hired by the client who creates a facility in accordance with the client's specifications and design idea.

III. MEMBERS OF THE BUILDING TEAM

The building sector is large and includes a variety of experts. In general, highly skilled and knowledgeable individuals contribute within their particular areas of expertise and experience to deliver the projects in construction projects. The members of the construction team are as follows:

i. Geotechnical Engineer

Geotechnical engineering is a branch of civil engineering that deals with the mechanics of rock and soil, including their subsurface conditions and the identification of the physical, mechanical, and chemical characteristics that may affect the project at hand. A geotechnical engineer is someone who has received this type of training and licensure.

ii. Land Surveyor

A land surveyor is a government-approved expert who holds a licence to delineate boundaries. By calculating distances, directions, and elevations, they can determine the relative locations of points on or below the earth's surface. They are the first experts to physically perform work on the construction site.

iii. Architect

Architects are qualified professionals with training in both the art and science of planning and directing the construction of structures that successfully serve human requirements.

After the design phase, an architect's job is not done. The architect is in charge of supervising the actual construction work throughout a building project. The architect is responsible for ongoing plan revisions based on client requirements, financial limits, and other factors that were not considered during the design phase. He visits construction sites as work is being done to ensure that contractors adhere to the design, the timetable, the materials supplied, and the

requirements for work quality. Until all construction is accomplished, the work is not finished.

iv. Structural Engineer

Structural engineering is a subfield of civil engineering that does strength calculations, loads, forces, and their interactions and effects on planned building. It also creates drawings of structures to make sure they are strong enough to withstand loads without collapsing. Structural engineers are the next group of experts to work on the design after the architect. He creates the foundations and works with the geotechnical engineer to create the structural members (slabs, beams, columns, and foundations). He determines the quality, size, type, and quantity of reinforcements as well as the dimensions (thickness span and depth) of structural members.

v. Quantity Surveyor

A practitioner in the construction sector with expertise in determining the cost of construction projects is known as a quantity surveyor. This may cover all expenditures, from preliminary design costs to final costs, for new construction, renovations, or maintenance work.

vi. Builder

A builder is a specialist with academic training who is legally registered and in charge of building construction, management, and upkeep for the benefit of people and their property. The designs, schedules, and requirements for the project are studied by the builder. They examine how easily structures can be built and maintained. He examines the artisan's level of craftsmanship, writes about the construction process and programme, and offers a fix for technical issues.

vii. Building Service Engineers

Imagine residing in a structure without power, a working bathroom or toilet, a heating or cooling system, or a skyscraper without a lift; such a structure is undoubtedly inhabitable.

Building services is an aspect of building construction handled by trained and certified professionals (Mechanical and Electrical Engineers) to ensure that these services function effectively.

viii. The Building Contractor

Under the direction of the consultant's team, the building contractor is in charge of carrying out the construction project in line with the construction document.

IV. ROLE AND RESPONSIBILITIES OF ARCHITECTS IN CONSTRUCTION PROJECTS.

In a building project, the Architect coordinates the activities of the building team and as well manages the construction process to avoid cost overrun. This is a collaborative process.

The Architect keeps a monthly site meeting with the building team to ensure a successful and cost-effective project

execution. This aids in understanding various technical challenges that might be encountered, viewpoints, and financial concepts.

The following works are discussed in the project by the architect:

1. The first phase entails having a thorough dialogue to grasp the client's requirements and a thorough record of his or her goals.
2. Discussing the anticipated budget, the site's characteristics, and other planning laws of the area under consideration.
3. Order actions, assurances, and obligations provided by the architect includes:
 - a) Recognising the site's possibilities and constraints.
 - b) Discussing the financial goals.
 - c) Examining all potential solutions and making suggestions.
 - d) Delivery and presentation of the feasibility study.
 - e) Preparation of Drawings.
 - f) Chairing site meetings.
 - g) Issuing site instructions during contract stage.
 - h) Preparing payment certificate.

Obligations And Authority Of The Architect In Nigeria.

Section 3 of the ARCON architects' conditions of engagement in Nigeria enumerates the obligations and authority of the architect in Nigerian projects

1. Care and Diligence

In a building project, the Architect shall exercise reasonable care and diligence in conformity with the expected level of professionalism.

2. Professional Obligation

The Architect, as the Prime Consultant, is required to discharge the professional responsibilities as provided in an impartial manner for the success of a building project.

3. Reports

The Architect shall keep the Client informed of progress in the performance of the Services and of any issue that may affect the programme, cost or quality of the Project.

V. RESULTS AND DISCUSSION

The architect plays a lead role in building contract and administration and as such determines the final cost of the projects through his specifications and architects' instruction. As stated earlier, the ARCON architect's conditions of engagement in Nigeria enumerated the roles and authority of the architect in Nigerian projects. One of the important roles of the architect is to keep the client informed of progress in the performance of the Services and of any issue that may affect the programme, cost or quality of the Project.

The architect plays a lead role in cost management and control of building projects in Nigeria.

VI. CONCLUSION

Cost management and control of building projects start from the conceptual stage of the building project and span throughout the project life span.

Clients rightly expect that the final cost of their projects should not exceed the approved budget.

Cost management control is a complex task, which involves constantly planning measuring progress, evaluating plans, and taking corrective actions when required. The result of this study also shows that the architect, in performing the services and discharging all the obligations under the conditions of engagement, shall exercise reasonable care and diligence in conformity with the expected level of professionalism. The architect shall keep the client informed of progress in the performance of the services and of any issue that may affect the programme, cost or quality of the project.

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