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Quality Assurance And Quality Control Of Residential Building Using Microsoft Project

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Abstract- The construction industry plays a major role in the economic growth of a nation. This thesis aims to evaluate the use of Quality Function Deployment (QFD) as a management tool to benefit project managers. The magnitude of the quality is indeterminate attimes.This paper presents are search effort on the way forward to implement quality-related metrics for construction project control. What needs to be determined is the proportion of real versus perceived quality and approval. This document is being submitted to satisfy at requirement of quality. The real import and the importance of quality control and assurance in small building construction and to determine the quality of building materials like soil, stone, brick, sand, cement, sand, aggregate, concrete, steel etc., by using Microsoft Office the importance of QA/QC will be determined. The causes of poor QA/QC management, evaluation, or standardization will be determined by the questionnaire and an interview with the selected body. This is to determine the method of our company in producing a product with proper standards.

I. INTRODUCTION

Every company must have their own standards for their products to ensure their client's satisfaction. In the construction sector, there are also considerations of the quality of their product, such as the workability of their product or building etc. For construction, there are three (3) major considerations: Quality, Time and Cost. Generally, quality means the standard of something as measured against other things of a similar kind or the degree of excellence of something. Quality in the construction industry means the constructed building can achieve its target regarding workability.

Quality Assurance and Quality Control (QA/QC) is a tool for determining the construction's quality. Quality Assurance (QA) is a way to prevent defects in manufactured products and avoid problems when delivering services to customers. QA is applied to physical products in pre- production. To verify what will product meets specifications and requirements. Production runs during manufacturing time by validating lot samples to meet specified quality controls. QA is also applied to software to verify that features and functionality complete business objectives. Quality control

(QC) emphasizes testing products to reduce defects and reporting to management, who decide to allow or deny product release. Whereas quality assurance attempts to improve and stabilize production and associated processes to decrease issues which led to the defects in the first place. Quality control issues are among the top reasons for not renewing a contract, particularly work awarded by government agencies.

Objectives

The objectives of the research are to determine the following:

- The importance of Quality Assurance and Quality Control implementation.
- Prepare a questionnaires survey to measure effective QA and QC implementation measures.
- To identify the factor affecting Quality Assurance and Quality Control Management and their consequences to the project.
- To study the various checklist for the contractor side and client side as per ISO 9000.
- To establish various visual inspection skills required for QA and QC.

Scope of Work

The scope of work for this project will focus on Quality Assurance and Quality Control. The scope of work will focus on the implementation of QA QC. In this case, this project will rely on the project manager's point of view. It is targeted to determine the importance of QAQC implementation. Furthermore, to determine the causes of problems and how it affects the product's quality. It is also to determine the problems faced during construction and how to rectify the case to ensure that the project will be completed on time, smoothly, and with expected product quality.

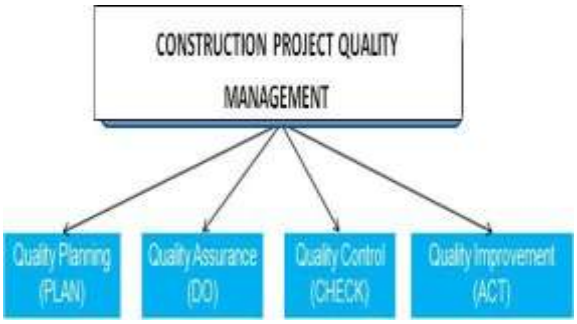


Fig.1ApproachestoConformanceinQualityManagement

II. METHODOLOGY

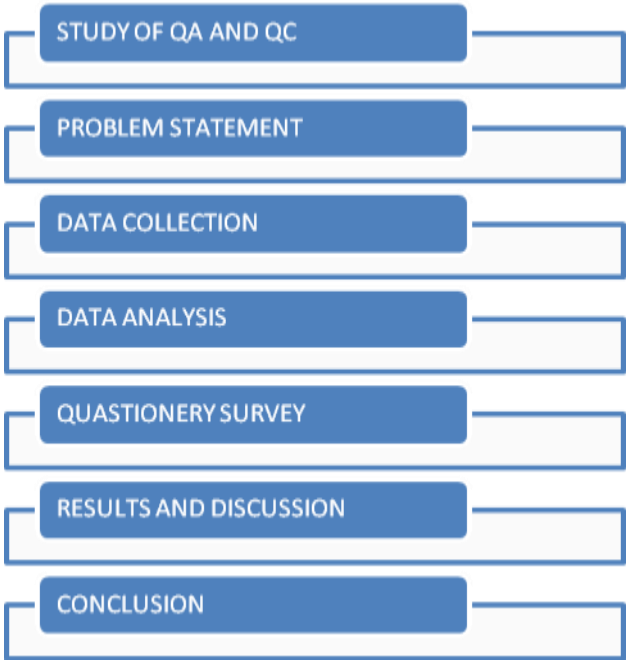


Fig.2Project Flow

Problem Statement

The problem of this research is to determine the following:

- What is the importance of implementing Quality Assurance and Quality Control?
- What are the causes and the effect so fpo or Quality Assurance and Quality Control Management?

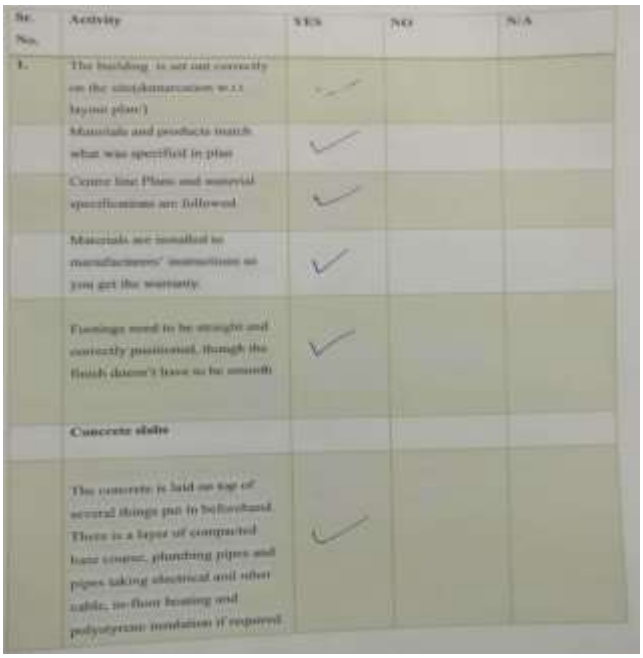
Data Collection

The Data Collection phase is to achieve the project's objectives; this stage is the most crucial part of collecting the primary data. It requires semi-structured interviews, research, and questionnaires to collect relevant data information.

Questionnaires will be gathered as the primary data. It will be drafted and given to those involved in construction projects.

The case study considered isaG+4framedstructurelocatedat Dighigaon .name of the project is SAIPRASAD APARTMENTS. The builder's name is OM SAI ASSOCIATES, Name of the architect is Samuelsangale.RCC designer is Randhawe consultancy. The total plot area of the projectis4500sq.ft.Totalbuilt-up area is 5440 sq.ft. The total estimated cost is 90 lakhs.

The following table is the sample checklist for site layout, concrete slab, and concrete formwork.



Sr. No.	Activity	YES	NO	N/A
1.	The building is set out correctly on the site(dimensions w.r.t layout plan')	✓		
	Materials and products match what was specified in plan	✓		
	Centre line Plans and material specifications are followed	✓		
	Materials are installed to manufacturers' instructions so you get the warranty	✓		
	Footings need to be straight and correctly positioned, though the finish doesn't have to be smooth	✓		
	Concrete slabs			
	The concrete is laid on top of several things put in beforehand. There is a layer of compacted base course, plumbing pipes and pipes taking electrical and other cable, in-floor heating and polystyrene insulation if required	✓		

There are additives that can be applied to the concrete to reduce cracking during or following curing; the concrete can be coloured, polished and/or grouted	✓		
Concrete Formwork			
Before concreting commences, ensure proper access for workers involved in placing, compacting and finishing concrete.	✓		
Presence of experienced supervisor keeping a continuous watch for any dangerous situation.	✓		
Adequate supply of spare props, clamps, bolts, wedges and skilled workers at site.	✓		
Alignment, camber, level and plumb (verticality) maintained while concreting is in progress.	✓		
Effective depth between top and bottom reinforcement not disturbed.	✓		
Cover of concrete around reinforcement and maintained as specified.	✓		

CHECKLISTASPERISO9000

Data analysis

The whole project work is scheduled in the MSP in the data analysis. The total time and cost for the project work is found in the project. In the first stage, the total project is as per planning. Then the worksheet is updated as per the work completed. For QA and QC, the planning is updated by taking various check lists during every execution work. The quality of the product or work is controlled by taking various checks and questionnaire surveys.

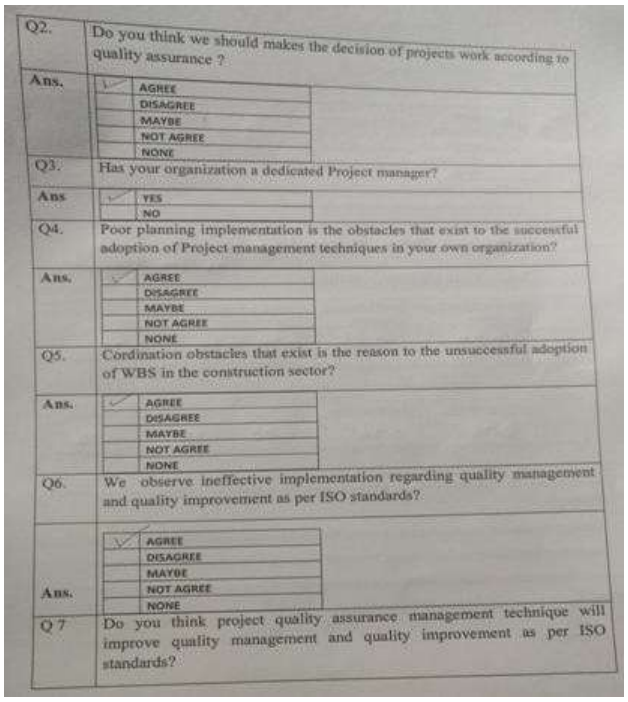
0102

Fig.3WorkSchedulinginMSP

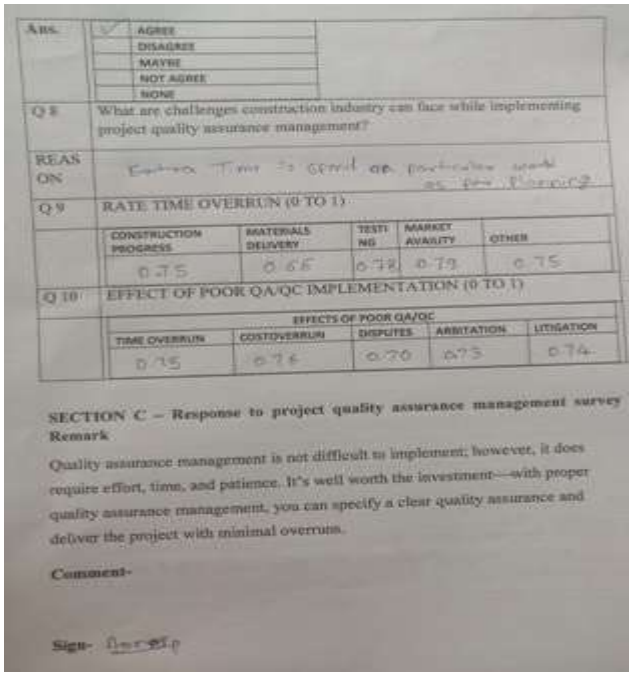
Fig.4 Scheduling in MSP with quality aspects

Questionnaire Design

The questionnaire will divide into three sections. Section requests basic information about the respondents. The respondents are requested to answer questions about the location of their company, the type of their organization, their position in the construction industry, their working experience in the construction industry and the primary type of projects. Section B of the questionnaire asks about the importance of the QA QC implementation. Section C asks about the impacts of poor QA QC implementation. The survey questionnaire is designed with two options: an online survey and a hard copy to ease the respondents to answer the survey. Moreover, the online survey will save the respondent's time, and thus they will be less reluctant to participate in this survey questionnaire.



Q2.	Do you think we should makes the decision of projects work according to quality assurance ?
Ans.	✓ AGREE DISAGREE MAYBE NOT AGREE NONE
Q3.	Has your organization a dedicated Project manager?
Ans	✓ YES NO
Q4.	Poor planning implementation is the obstacles that exist to the successful adoption of Project management techniques in your own organization?
Ans.	✓ AGREE DISAGREE MAYBE NOT AGREE NONE
Q5.	Cordination obstacles that exist is the reason to the unsuccessful adoption of WBS in the construction sector?
Ans.	✓ AGREE DISAGREE MAYBE NOT AGREE NONE
Q6.	We observe ineffective implementation regarding quality management and quality improvement as per ISO standards?
Ans.	✓ AGREE DISAGREE MAYBE NOT AGREE NONE
Q 7	Do you think project quality assurance management technique will improve quality management and quality improvement as per ISO standards?



Ans.	✓ AGREE DISAGREE MAYBE NOT AGREE NONE
Q 8	What are challenges construction industry can face while implementing project quality assurance management?
REASON	Extra Time to enroll as particular work as per Project?
Q 9	RATE TIME OVERRUN (0 TO 1)

CONSTRUCTION PROGRESS	MATERIALS DELIVERY	TESTING	MARKET AVAILITY	OTHER
0.75	0.65	0.72	0.79	0.75

Q 10 EFFECT OF POOR QA/QC IMPLEMENTATION (0 TO 1)

EFFECTS OF POOR QA/QC				
TIME OVERRUN	COSTOVERRUN	DISPUTES	ARBITATION	LITIGATION
0.75	0.76	0.70	0.73	0.74

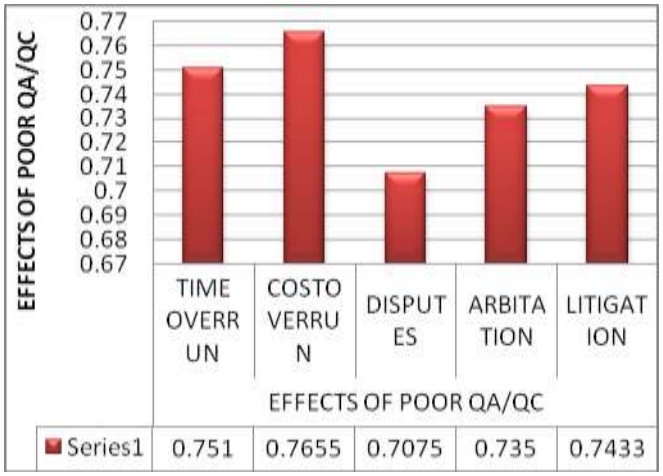
SECTION C – Response to project quality assurance management survey

Remark

Quality assurance management is not difficult to implement; however, it does require effort, time, and patience. It's well worth the investment—with proper quality assurance management, you can specify a clear quality assurance and deliver the project with minimal overruns.

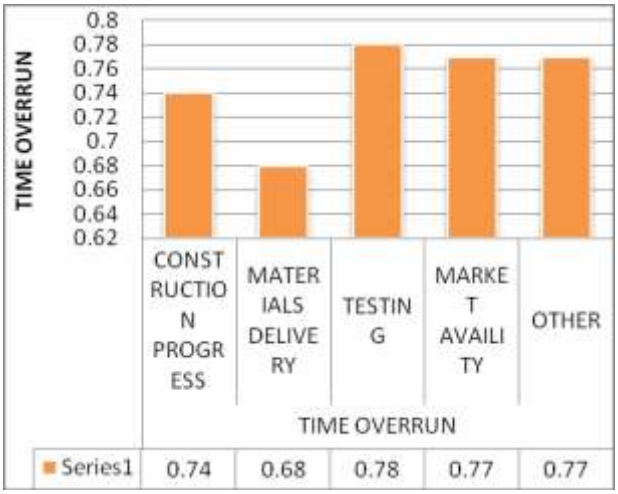
Comment-

Sign-


EFFECTS OF POOR QA/QC
0.77
0.76
0.75
0.74
0.73
0.72
0.71
0.7
0.69
0.68
0.67
TIME OVERRUN
COSTO VERRUN
DISPUTES
ARBITATION
LITIGATION
EFFECTS OF POOR QA/QC
Series1
0.751
0.7655
0.7075
0.735
0.7433

Questioners design as per work

III. RESULTSANDCONCLUSION



TIMEOVERRUN

EFFECTOFPOOR QA/QC

The above graphs show that construction Quality Assurance and Quality Control are important to make the company preferable. If we don't implement Quality Assurance and Quality Control in our project, it simultaneously affects the duration of the construction time and construction cost.

CONCLUSION

In this paper implementation of quality control and quality assurance as per ISO 9000 is studied. The sample checklist is prepared per code, and its effective implementation is studied through observations and questionnaires.

Implementation of the quality control checklist is done per IS 9000 in the current schedule—implementation of quality assurance and quality controlling the present case study. After analysis of the questionnaires survey, the time overrun is a major factor affecting QA and QC.

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