# Architecture – Beyond Design : Exploring Architectural Profession through Quality Management

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*Abstract: Quality never happens by accident. It is a conscious effort from all project participants / stakeholders and project team members to achieve quality in their performance. Quality Management is the responsibility of the entire team, but is the initiative of the top management. Quality Management plan, its implementation, Quality assurance and Quality control are integral elements of Quality management. Documentation of quality and to achieve quality are the very pillars of Quality Management.Architect being the leader of the project should be very conscious, and demanding on the front of quality. His visualization of the project can become a reality on implementation of quality management along with other tools of Project Management.*

*Keywords : pillars of Quality, performance*

## Introduction:

Architectural profession inculcates the passion of design through judicious use of technology. The role of architects has become tremendously demanding, challenging and inclusive of all other allied fields of building design.

Maximum of the profession is dominated by the forces of demand and supply in the market, defined by the user and the Government. The responsibilities put on the shoulders of the architect need to be evaluated and responses to shoulder these responsibilities need to be designed.

The client has become more demanding, more cost conscious, more informed and looks towards quality in the end product. Any building design is finally 'a product' in the eyes of the client, which he is going to use personally or sell in the market. Architects need to be aware of the 'management language' and try to maintain high standards of Professionalism.

Aim: The aspect of 'Quality' in building design is one area of exploration and further intrigue.

Objective: How much 'Quality Conscious' the architect for the project is, will define the final output of the product.

This makes us think, whether are we really doing it in practise?

The visualization of the project happens first in the Architect's office. Here is the beginning of 'Quality Management' for the project.

Outcome: This paper will explore the implementation of 'Quality Management Systems' in context with project management, to enhance the standards of Architectural profession.

## Definition of Quality:

In general, 'Quality' is related to the 'perception' as is defined by an individual through his overall experience and understanding. It may change from person to person.

A standard dictionary meaning of quality is 'A standard of something as measured against other similar kind; a degree of excellence'

In technical field the standard to measure against are available in terms of Indian Standard Codes of Practice (IS CODES), National Building Code (NBC) and Bureau of Indian Standards (BIS). Therefore it is easier to understand and define quality in building project.
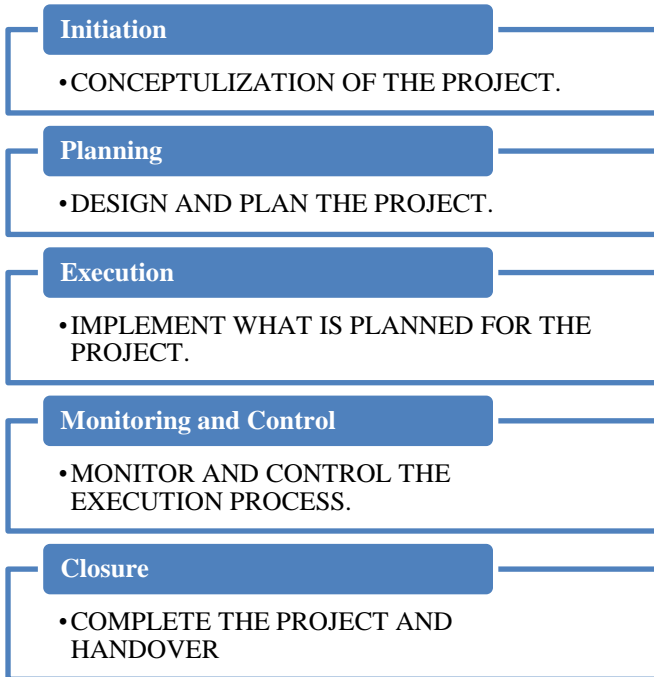
However, it is quite interesting to note that as of now there is no standard in particular to define the quality of design drawing deliverables. Therefore if becomes the prerogative of individual architect to maintain the quality of his design drawing deliverables.

## Project Life Cycle:

Every project goes through the following stages throughout its life cycle. At every stage awareness for quality needs to be generated and maintained to achieve it.

Quality is a conscious decision of the project stakeholders. It needs to be addressed at each and every stage of project lifecycle.

In all these 5 stages of the project, an Architect plays a major role and thus can be very efficient in achieving quality product for the client and the end user.

| Initiation |
| --- |
| • CONCEPTULIZATION OF THE PROJECT. |

| Planning |
| --- |
| • DESIGN AND PLAN THE PROJECT. |

| Execution |
| --- |
| • IMPLEMENT WHAT IS PLANNED FOR THE PROJECT. |

| Monitoring and Control |
| --- |
| • MONITOR AND CONTROL THE EXECUTION PROCESS. |

| Closure |
| --- |
| • COMPLETE THE PROJECT AND HANDOVER |

(Reference:

Project Management Institute Inc (PMI) USA, (2013) *A Guide to the Project Management Body of Knowledge (PMBOK Guide)* (5th Edition) www.pmi.org)

**Quality Management Process:**

**1. Definition of Quality, or Plan for Quality.**

'Quality' always happens at the 'TOP'. The top management is responsible for defining the quality policy and quality guidelines for the project. The Architect is a part of top management team. The project standards, operating procedures and the outcomes are defined by the top management team which in turn will define the project quality. In doing so, the main focus of the architect should be on the deliverables of quality design, and quality of construction.

The deliverables of an architect are:
A: Design drawings
B: Specifications
C: Contract Documents including Bill of Quantities
D: Periodic Supervision

All these parameters are to be set and defined while planning for Quality.

Except, Periodic Supervision, all other deliverables occur in Planning stage of the project. Periodic supervision occurs in the Execution stage of the project.

Each of the deliverables mentioned above are the pillars of Quality Management Plan and are as per the Scope of Architectural Services as defined by The Council of Architecture.

The project planning team, comprising of the Architect, along with his team and the Client along with his team are the two main project participants who play an active role in planning for and defining the quality of the project.

The Quality Management Plan needs to be formulated in the Project Planning Stage of the project.

Thus it should be noted that the architect being the Technical person as defined in the Building Bye Laws and as defined by The Council of Architecture should be very quality conscious and act as a LEADER in defining quality.

**2. Methods and Ways to achieve Quality.**

Once having defined the deliverables for Quality Management, the Quality Management Plan should intrinsically provide for the methods and ways to achieve it. Only, definition of quality is not enough, but how to achieve it is also of utmost importance.

Following Methods can be implemented to ensure that the quality is achieved.

**A: Standardisation**

Standardisation is a tool to maintain and achieve quality. Having standard formats, templates and design details for the architect's office is very important. It will ensure that the details in the design drawing, specifications and Bill of Quantities are perfectly co-related. Specific areas of designing can be incorporated to be changed to suit the requirements of particular design.

Standard Formats and templates are easier to use and can be easily adapted by less experienced person in the office to deliver high quality deliverable.

It requires a lot of experience and documentation to reach standardisation.

It also helps the contractor to implement the standard designs. Standardisation also helps to implement Value Engineering technique for the project. This is an added advantage.

Standardization helps the organization to utilize its maximum experience to deliver quality project.

**B: Standard Operating Procedures (SOP)**

Standard Operating Procedures are defined by particular organization to conduct its work. They are specific to organization and will largely depend upon the services offered by the organization.

While standardization defines the content of the deliverable, SOP defines the methodology of implementing the project quality.

SOP's ensure that all the deliverables achieved are complying with the Quality Management Plan.

It also helps to identify and allocate risk and responsibility to project participants.

Standard Operating Procedures are integral part of office system management. It regulates the working environment thereby increasing the efficiency and productivity along with enhanced quality.

Every architectural firm should establish SOP for itself to benefit from this simple tool of quality management.

## C: Quality Check Lists

Quality checklists are handy in maintaining quality for the project. Checklists are easy to prepare and use. Checklists can be prepared right from designing stage to completion stage. They can be prepared for design drawings, specifications, bill of quantities, site visits, test procedures and construction procedures.

Checklists are easier to use if the project team is relatively less experienced or is new in the project.

Architectural organizations can benefit from use of checklists to minimise or eliminate repetitive errors and mistakes.

The methods and ways or tools and techniques to achieve quality should be integral part of quality management plan for the project or organization.

## 3. Quality Assurance and Quality Control (QA/QC)

During the Execution stage of the project, i.e. when the project plan is actually getting implemented, quality assurance and quality control play a major role. Whatever is planned for needs to be executed.

Execution stage and Monitoring and Control stage of the project occur simultaneously. Quality Assurance and Quality control are part of Monitoring and Control. It is imperative that Quality Management plan needs to be monitored and control.

Following are the techniques that are to be implemented for Quality Assurance and Quality Control:

## A: Preventive Action and Corrective Action

Preventive action indicates keeping errors out of the process whereas Corrective action indicates measures to be taken to keep the process compliant with the plan in case of deviation or variation. Preventive actions are planned while corrective actions are derived to suit the situation. Preventive actions are derived from previous experiences.

Preventive actions and Corrective actions are very important during monitoring the quality of the project as they are directly affecting the quality of deliverables.

Preventive actions and corrective actions are result of brainstorming sessions with the project participants and are required to be documented for future reference.

## B: Inspection / Audits

Inspections or Audits are to be conducted during the execution of the project. These help in controlling the quality process. It also helps to understand the conformity and non-conformity of the product. Any non-conformance is highlighted and appropriate remedial measures can be suggested. It also acts as guide to understand the effectiveness of the process or the flaws in the process.

Inspections need to be carried out at frequencies determined in the quality management plan for all the deliverables and operating procedures.

## C: PDCA Cycle
Popularly known as PDCA Cycle
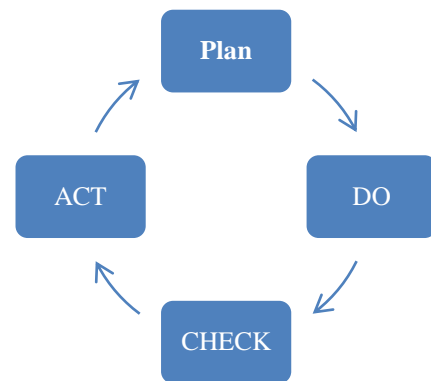


PDCA is an effective technique for Quality assurance. It provides for planning the activity, doing it, checking and acting on any non-conformity. This is a continuous cycle which helps to continual improvement of the product and process.

Thus it helps in overall improvement of the organization and is not restricted only to the project.

## 4. Documenting Quality.
All the activities in the project need to be documented properly for reasons not only attributed to quality but also for contractual and legal purpose. Documentation is very important in all the stages of the project. It not only helps to understand the major events in the project but also acts as a guide for the upcoming projects.

Project documentation is necessary to track all the achievements in the project as well as any short comings encountered.

Following are the outcomes of the documenting quality during the project.
## A: Records
During monitoring and controlling stage of the project, quality procedures for quality assurance and quality control are performed. They lead to generating various documents in the form of filled in checklists, corrective actions taken, reports of inspections or audits etc.All these documents eventually represent the records for the project.

Any format when filled in completely and signed by concerned authority becomes a record.

Records play a major role in the organizations and projects life. They provide documentary evidence of all the quality procedures followed and achievement of quality.

### B: Approved Change Requests / Variation Orders / Project Updates

During monitoring and controlling the quality changes may happen to the project and they need to be properly documented.

Any change necessitated due to any corrective action, or change in the specification by the client, needs to be documented in change log or variation order. These variations need to be approved by all the project participants before they are implemented.

These approved change requests are part of project and also may change the quality plan during the project life cycle.

Thus these need to be properly documented and updates in the project plan need to be done. Variation orders / Change request unless documented become fertile ground for disputes and claims. Thus they are vital document in quality management as well as dispute resolution.

### C: Lessons Learnt

All projects teach us and enhance our experience. Our experiences may be good or bad. But they become our lessons learnt which are very important from the point of view of the individual as well as for the organization. Documenting 'Lessons Learnt' for the project is one of the Best Practice every organization should follow.

They form the foundation for evolving Standard Operating Procedures, formulating templates, creating checklists, assessing preventive actions and deriving quality management plan for next project. Lessons learnt are very important for the organisation.

Lessons learnt should be documented immediately on occurrence of the good or bad event in the project. They should be reviewed, discussed and strategies to tackle them in future need to be evolved.

### 5. Achieving Quality.

The final step in the Quality Management is that of Achieving Quality. All the procedures and decisions should ultimately lead to single goal of achieving quality.

The team should be quality conscious and motivated to deliver quality within time, cost and scope. The essential parameters of project management i.e. Time, Cost and Scope should not be ignored to achieve quality. Quality management is an integral part of Time Management, Cost Management and Scope Management.
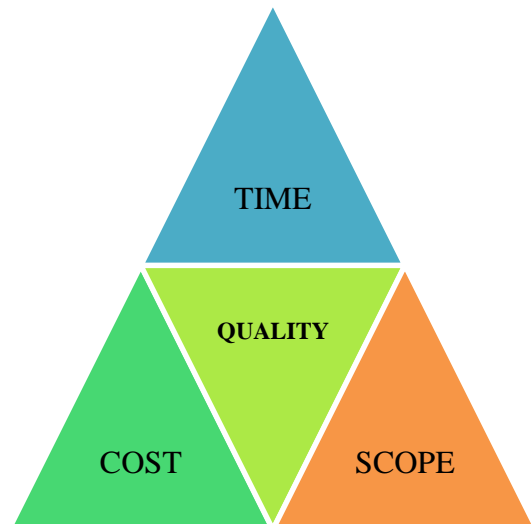


**Traditional Project Management Triangle**

### Conclusion:

The ultimate aim of the project team is to Achieve Quality. A perfect team work along with quality plan implemented in its true sense will definitely lead to Quality in project as well as in the organization. By following all the above mentioned tools and techniques it is easier to achieve the desired results.

Achieving quality is very important in today's competitive world.

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