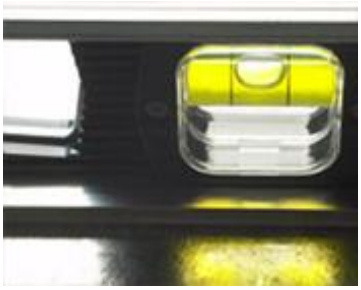
Project Delivery & Controls

by the WBDG Project Management Committee

Overview

Effective project management includes strategies, tactics, and tools for managing the design and construction delivery processes and for controlling key factors to ensure the client receives a facility that matches their expectations and functions as it is intended to function. Improvements in building quality directly contribute to reduced operational costs and increased satisfaction for all of the stakeholders. Successful project delivery requires the implementation of management systems that will control changes in the key factors of scope, costs, schedule and quality to maximize the investment.

Scope Management



Project scope is the work that must be performed to meet a client's program goals for space, function, features, impact and level of quality. Scope management sets the boundaries for the project and is the foundation on which the other project elements are built. From the beginning it helps identify the work tasks and their requirements for completion. Effective scope management requires accurate definition of a client's requirements in the Planning and Development stage and a systematic process for monitoring and managing all the factors that may impact or change the program requirements throughout the project design and construction phases through delivery of the finished project.

Cost Management

Project costs are measured and analyzed in many ways throughout a project, from planning, programming and design to bidding, construction, turnover, and post occupancy. First costs, cost-benefit ratios, and life-cycle costing are a few examples of how a project's cost-effectiveness can be evaluated. The control of costs requires continual and systematic cost management and monitoring to compare actual costs incurred against targeted budget numbers. These cost management processes start with the establishment of budgets based on actual estimates for related work. They need to align with scope and quality requirements and be based on realistic, current market conditions. Comparing budgets to actual costs throughout the building process is critical. The process continues with milestone estimates, value engineering, procurement strategies, and change order management to ensure the project is timely and cost effective.

Schedule Management

A project schedule defines the processes and establishes a timeline for delivering the project. Avoiding missing deadlines for delivery of key project components is a key objective of schedule management. Comprehensive project schedules will identify all of the project's stages, phases, and activities assigned to each team member mapping them to a timeline that measures key dates that are used to keep track of work progress. Schedule management interfaces directly with scope, cost, and quality management and team member roles and activities must be defined, coordinated, and continually monitored. It is the goal of every project manager to look for efficiencies in all of these areas as a project progresses.

Quality Control

Quality control starts with matching expectations about quality levels with budget and scope during planning and design reviews and continues through construction delivery with a program of inspections, tests, and certifications. It requires a coordinated performance among the entire project team in order for a completed building program to fully satisfy a client's and the building users' expectations. Having a process implemented at the beginning of the project will help define the goals as well as provide a continuous measurement system over time to make sure the objectives are being met. From visioning to post occupancy, a good quality control system like the Design Quality Indicator (DQI) helps eliminate errors, reduces cost and improves overall building quality.

Building commissioning is another quality assurance process for achieving, verifying and documenting that the performance of facility systems and assemblies meet the defined objectives and criteria for the project. Commissioning coordinates and integrates planning development and design decisions and verifies that the delivered facility and its capabilities are efficient and work correctly and that the appropriate training programs are in place to ensure smooth operations over the facilities life. More on this process follows in a subsequent section of this guide.

Major Resources

WBDG

Design Objectives

Cost-Effective Branch, Historic Preservation, Secure / Safe

Project Management

Building Commissioning

Organizations

- Association for the Advancement of Cost Engineering (AACE)
- Building Commissioning Association
- Construction Industry Institute (CII)
- Construction Management Association of America
- DQI USA, LLC
- Royal Institution of Chartered Surveyors (RICS)
- Society for the Advancement of Value Engineering
- Society for Cost Estimating and Analysis

Publications

- AIA Handbook of Practice
- Construction Extension to a Guide to the Project Management Body of Knowledge (PMBOK® Guide), Third Edition. Project Management Institute, 2007.
- GSA LEED® Applications Guide
- GSA LEED® Cost Study
- ISO 9000 Standard
- ISO 9000 in Construction by Paul A. Nee. John Wiley & Sons, Inc., 1996.
- Practice Standard for Work Breakdown Structure. Project Management Institute, 2006. Format: CD-ROM.
- Quality Management Guidelines. McLean, VA: Construction Management Association of America, 2000.

Software

- Microsoft Project
- Primavera Systems
- Prolog
- Serena Software
- DQI

Sample Construction Related Forms

- **Construction Phase Forms**
  - Change Request Log
  - Contractor's Daily Report
  - Request for Information (RFI)
  - RFI Log—Sample
  - Points of Contact
  - Preconstruction Conference—Sign In List
- **Construction Documents Checklists**
  - Preconstruction Conference—Checklist and Minutes
  - Construction Inspection—Checklist
  - Design Requirements/Provisions/Considerations—Checklist
  - Construction Project and Capital Program Management Projector™