

Managing the Design Process: Keeping on Schedule, Within Budget, and Selecting the Right Resources

Purpose and Background

This seminar provides participants with the knowledge and skills necessary to effectively manage the design process and prepare construction documents. Specific time and cost management skills, as well as quality control/assurance techniques, will be presented to enable design engineers, engineering consultants, and civil service professionals to produce cost effective construction documents for building and civil infrastructure projects.

Topics covered include:

- Developing request for proposals and defining project work scopes,
- Developing design schedules,
- Conducting design meetings and negotiations,
- Managing changes and extra work,
- Time and budget management, and
- Quality control/assurance techniques

Seminar Instructor

Prof. Lonny Simonian, P.E., P.M.P., has over 25 years of experience in the design and construction engineering of civil infrastructure systems. He is an Associate Professor at California Polytechnic State University, San Luis Obispo while concurrently pursuing his doctorate degree in Civil Engineering at the University of California at Berkeley. Mr. Simonian is a licensed professional engineer in the State of California and is certified as a Project Management Professional by the Project Management Institute. He holds a Master of Science degree in Engineering from U.C. Berkeley with an emphasis in Construction Engineering and Management, a Project Management Certificate from Stanford University, and a Bachelor's degree in Electrical Engineering from Cal Poly, San Luis Obispo.

Professor Simonian's teaching responsibilities have included instructing classes in Construction Contracts, Construction Project Administration, Principles of Construction Management, Project Controls, Professional Practice for Construction Project Managers, and co-instructing an Interdisciplinary Design-Build Studio. He is a past instructor for the ASCE course Construction Cost Estimating for the Civil Engineer.

Who Should Attend?

- Design engineers
- Consulting engineers
- Project engineers
- Construction engineers
- Engineering project managers
- Public works administrators who want to learn more about how to better manage the design of civil infrastructure projects - from conceptual design to construction documents.

- **For group training, contact John Wyrick (JWyrick@asce.org) or Stephanie Tomlinson (STomlinson@asce.org)**

Summary Outline

Project Scoping and Conceptual Design

- Defining the scope of a project
- Developing a project management plan
- Scope verification, monitoring and control
- Identifying Funding Sources

The Design Process - Execution, Monitoring, and Control

- Developing design schedules
- The importance of and determining milestones
- Selecting a Project Delivery Method - Design-Build, Design-Assist, and Design-Bid-Build
- Types and options for design and construction specifications

Establishing and Managing Design and Coordination

Meetings

- Types of meetings and meeting conduct
- Setting agendas and meeting schedules
- Documentation and meeting minutes/notes and legal issues

Professional Services - The Role and Use of Engineering

Design Consultants

- Disciplines and types needed
- Developing Request for Proposals (RFP)
- Evaluating and selecting design consultants/sub-consultants
- Meeting Disadvantaged Business Enterprise (DBE) requirements for engineering design consultants

Establishing Design Schedules and Budgets

- Project scheduling and management techniques
- Determining and estimating durations for design activities
- Techniques for estimating resource for design activities
- Schedule development and control
- Integrated time/cost management and control through earned value

Design Documentation and Record Keeping

- Developing a File Management System
- Design documentation and recording design assumptions
- Design photographs and pre-construction photographs
- Use of computers and web-enabled project management applications
- Use of Geographic Information Systems

Quality Management during the Design Process

- Quality Assurance (QA)/Quality Control (QC) Fundamentals - Recommended Practices and Recommended procedures for QA/QC - Developing and implementing a QA/QC plan - Access to the design by QA/QC personnel - Project fast-tracking and the effect on contract document preparation
- Constructability Reviews - Integrating constructability reviews into the design process - Suggested methods for performing constructability reviews - Scheduling constructability reviews during the design process - Construction specifications and drawing conflicts

Public Outreach and Communications Management in the Design Phase

- Stakeholder identification and management
- Communication planning and Information distribution
- Developing Public Information Plans
- Planning and conducting Public Meetings
- How to work community organizations

Seminar Benefits

- Be able to analyze and comprehend the integration and interrelatedness of cost, time, quality and resources for managing the design process
- Increase your ability to recognize and identify the documentation and record keeping requirements during design and the associated legal implications
- Be familiar with value engineering and its application throughout the design process
- Limit the number of errors and omissions and protect professional liability, insurance costs, and premiums
- Understand how to apply engineering standards and consider realistic issues including engineering economics, constructability, environmental requirements, sustainability, and safety
- Be able to analyze and comprehend quality control/assurance issues with regard to the design process
- Understand how to recognize and avoid costly construction changes through quality control/assurance during the design phase of a project

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