Purpose and Background

A traditional approach to design quality places the greatest emphasis on quality at the completion of each stage of design. A Built-In Quality (BIQ) program, however, focuses on the initial stages of a quality process by first identifying customer expectations, converting these expectations into requirements, developing design operations, then performing the design work. The focus is on improving the process with the goal of producing error-free work that meets customer expectations. The Project Management Body of Knowledge (PMBOK) also emphasizes the need for prevention over inspection—“One of the fundamental tenets of modern quality management states that quality is planned, designed, and built in—not inspected in.” A BIQ process strives for error-free results as opposed to a quality level that is deemed to be acceptable. BIQ is a real-time, interactive process based on actively engaging stakeholders in work operations.

This seminar provides participants with the knowledge and skills necessary to effectively establish and maintain a BIQ program process when preparing design documents. BIQ implements a new quality process in design operations that reflects a change in strategy with achievable objectives.

- Simplifying production will enable cost-effective design quality
- Eliminating process variability will make production-to-expectations easier
- The people doing the work best control quality
- Each performer must treat the next process (or consultant) as its customer
- Assuring that all workers understand each internal customer’s expectations.
- Initial run studies should be used to confirm that what is clear is also understood
- If a team focuses on building quality in (to the product), design improvement will follow

Seminar Instructor

PROF. LONNY SIMONIAN, P.E., P.M.P., has over 25 years of experience in Project Management, Engineering Design, and Construction. He is a Professor at California Polytechnic State University, San Luis Obispo. 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. His 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 co-instructor of the ASCE course, Managing the Design Process—Keeping on Schedule, Within Budget, and Selecting the Right Resources.

To register your group, contact John Wyrick (JWyrick@asce.org) or Stephanie Tomlinson (STomlinson@asce.org)
### Seminar Benefits

Opportunities for improvement include:
- Using collaborative workshops to produce schematic design
- Integrating value engineering into the design process
- Considering life cycle costing when applying target costing
- Investigating the use of FMEA for facility equipment
- Incorporating specialists during the design process
- Making trade-off decisions
- Driving design decisions to achieve targets
- Engaging all design professionals earlier in the design process
- Approaching all stakeholders for new ideas and approaches

### Summary Outline

- How quality is defined
- Customer expectations of quality
- Quality management, history, and current trends
- Ways to improve design quality
- Quality Validation
- Quality as a process
- What is BIQ and what is it designed to achieve
- How a BIQ process can improve a project’s time and cost

### Learning Objectives

- Comprehending quality issues with regard to the design process
- Recognizing and avoiding costly construction changes during the design phase of a project
- Analyzing and comprehending the integration and interrelatedness of cost, time, quality, and resources
- Limiting the number of errors and omissions and protect professional liability insurance costs and premiums
- Implementing value engineering throughout the design process.
- Developing design criteria from values, and values from purposes
- Steering design toward targets using a set-based approach
- Establishing target values and constraints as stretch goals to spur innovation
- Enabling the detection of dimensional clashes and code violations

### Who Should Attend?

This seminar is designed for design engineers, quality engineers, consulting engineers, project engineers, construction engineers, civil service professionals, engineering project managers, and inspectors who are interested in implementing an interactive, built-in quality program process.

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