CONCEPT

Engineering Design Review and Submittal Approval: Stage Gates, Checklists and Comment Close-Out

14 – 18 March 2027
Jeddah - Corniche four-star



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Introduction:

Engineering design review often fails in the same places: a 60 percent package commented on without a checklist, structural and MEP drawings never checked against each other, comments closed on the designer's word alone and a substituted product approved from a brochure with no test certificate. The cost appears later as redesign, site clashes and disputed liability. This Core Concept course gives client, consultant and PMC reviewers a staged method for reviewing design packages, coding and closing comments and approving material submittals. Participants produce a Design Review Checklist Set and a completed Review Comment Sheet for a case design package.

Course Objectives:

- Plan a design review for each stage gate, from concept and schematic through 30, 60 and 90 percent to issued for construction, with defined depth and turnaround
- Apply architectural, structural, MEP and civil review checklists to test design packages against codes, design criteria and specifications
- Assess constructability, maintainability and interdisciplinary coordination, using clash detection results to target review effort
- Write coded review comments, evaluate designer responses and verify comment close-out before a package advances
- Approve or reject material and product submittals on the evidence of product data, test certificates, samples and mock-ups
- Operate an approval workflow and submittal register that protects the reviewer's position on liability and delegated design

Target Audience:

- Client-side engineers and architects who accept design deliverables at each stage gate
- Design consultant reviewers who check packages prepared by other disciplines or by specialist designers
- Project management consultant staff who coordinate review cycles and track comment close-out
- Technical office engineers who evaluate material, product and substitution submittals
- Document control staff who run design transmittals, revision records and submittal registers

Course Outline:

Day 1: Design Stages, Deliverables and the Reviewer's Mandate

- Design Stage Gates: Concept, Schematic, 30, 60 and 90 Percent and Issued for Construction
- Stage Deliverables Matrix: Basis of Design, Design Criteria Report, Calculations, Drawings and Specifications
- Reviewer Roles for Client, Consultant and PMC: Scope of Review Defined in the Appointment
- Design Review Versus Design Verification, Calculation Checking and Independent Peer Review
- Current Review Practice Self-Assessment Using a Review Maturity Scorecard

Day 2: Review Strategy, Discipline Checklists and Compliance Checks

- Design Review Plan: Package Register, Reviewer Allocation, Turnaround Times and Review Depth
- Architectural Checklist: Space Programme, Egress Widths, Finishes Schedules and Envelope Details
- Structural Checklist: Load Assumptions, Calculation Sampling, Member Sizing and Connection Details
- MEP and Civil Checklists: Load Schedules, Riser Diagrams, Drainage Levels and Utility Tie-Ins
- Code, Design Criteria and Specification Compliance Traceability Matrix

Day 3: Constructability, Coordination and Comment Management

- Constructability Review Prompts: Access, Sequencing, Tolerances and Temporary Conditions
- Maintainability Review: Plant Replacement Routes, Service Clearances and Spare Parts Access
- Interdisciplinary Coordination Review with BIM Clash Detection: Hard, Clearance and Workflow Clashes
- Review Comment Sheet Structure: Drawing Reference, Comment Category, Severity and Required Action
- Review Status Codes, Designer Response Log and Comment Close-Out Verification

Day 4: Submittal Approval, Value Engineering and Reviewer Liability

- Material and Product Submittal Evaluation Against Specification Sections and Compliance Statements
- Test Certificates, Third-Party Reports, Samples and Mock-Up Acceptance Criteria
- Substitution and Or-Equal Requests Judged with Value Engineering Function Analysis
- Approval Workflow and Document Control: Transmittals, Revision Tracking and Submittal Register
- Reviewer Liability: Approval Stamp Wording, Delegated Design Portions and Walkway Collapse Lessons

Day 5: Case Design Package Review and Deliverable Build

- Case Brief: Mixed-Use Building 60 Percent Design Package with Specification Extract
- Discipline Checklist Set Tailoring for the Case Package
- Team Review of Case Drawings, Calculations and Specifications with Coded Comments
- Case Submittal Evaluation: Facade Glazing Unit and Chilled Water Pump Set
- Review Comment Sheet Completion and Designer Response Challenge Panel

Skills You Will Gain:

- Stage Gate Review Planning
- Discipline Checklist Design
- Code and Criteria Traceability
- Constructability Assessment
- Clash Report Interpretation
- Review Comment Coding
- Submittal Evidence Evaluation
- Approval Workflow Control

Why Attend This Course:

- Leave with a Design Review Checklist Set and a completed Review Comment Sheet built on a mixed-use case design package
- Catch coordination gaps and non-compliant details at 60 percent rather than on site after issue for construction
- Stop approving substituted products without test certificates, samples or a documented equivalence check
- Compare review practice with client, consultant and PMC peers from building, infrastructure and industrial projects

Conclusion:

A design package is only as reliable as the review that accepts it. The course moves from design stage gates, deliverables and the reviewer's mandate, through review planning and discipline checklists for code and criteria compliance, to constructability, maintainability and clash-based coordination review with coded comments and close-out, then to material submittal approval, substitution requests, document control and reviewer liability. The final day applies this to a case design package and produces a Design Review Checklist Set and a completed Review Comment Sheet.