CONCEPT

Reading Construction Drawings and Specifications: Structural, MEP, RFIs and Shop Drawings

25 – 29 January 2027
London - Central London four-star



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Ref: 339_12810 **Date:** 25 – 29 January 2027 **Location:** London - Central London four-star **Fees:** 23000 SAR

Introduction:

Errors in reading construction drawings and specifications cause rework, wrong orders and disputes long before anyone notices: a superseded revision is built, a rebar lap is missed, or a BOQ item is priced against the wrong specification section. This Core Concept course trains site and commercial staff to read construction drawings and specifications as one document set, from sheet organisation, scales, grids and details to structural, civil and MEP sheets, specification sections, RFIs, shop drawings and as-built records. Participants leave with a Drawing and Specification Review Checklist and a completed Discrepancy Register.

Course Objectives:

- Navigate a multi-discipline drawing set using sheet indexes, title blocks, grids, section markers and detail callouts
- Interpret foundation, reinforcement, structural steel, civil and MEP drawings well enough to check work on site and quantities in the BOQ
- Locate the governing requirement for any element in a specification organised by MasterFormat divisions and SectionFormat parts
- Trace each drawn element to its specification section and BOQ item to support measurement and purchasing
- Control drawing revisions and raise clear RFIs and shop drawing review comments against the contract documents
- Detect dimension conflicts, missing details and inter-discipline clashes and record them in a discrepancy register

Target Audience:

- Site engineering staff who set out, build and inspect work from issued construction drawings
- Site supervision staff who check daily work of trades and subcontractors against drawings and specifications
- Quantity surveying staff who measure quantities and value work from drawings, specifications and BOQs
- Procurement and buying staff who order materials and equipment from specification sections and approved submittals
- Document control staff who register drawing issues, revisions, transmittals and RFIs
- Technical office staff who prepare shop drawings, submittals and as-built records for the contractor

Course Outline:

Day 1: Construction Document Set, Sheet Organisation and Drawing Conventions

- Contract Document Hierarchy: Drawings, Specifications, BOQ and Conditions of Contract
- Drawing Set Structure by Discipline: Architectural, Structural, MEP and Civil Sheet Series
- Title Block, Drawing Number, Revision Box and Sheet Index Reading
- Orthographic Views: Plans, Elevations, Sections and Enlarged Details
- Metric and Imperial Scales, Figured Dimensions and the Do-Not-Scale Rule

Day 2: Specification Structure, Symbols and Grid Referencing

- MasterFormat Division Groups and Section Numbering as Published by CSI and CSC
- SectionFormat Three-Part Structure: General, Products and Execution
- Graphic Symbols, Line Types, Hatching Patterns and Abbreviation Legends
- Structural Grid Lines, Finished Levels, Datum Points and Setting-Out References
- Section Markers, Detail Callouts and Cross-Sheet Reference Tags

Day 3: Reading Structural, Civil and MEP Drawings

- Foundation Plans: Pad, Strip and Raft Footings, Piles and Ground Beams
- Reinforcement Drawings and Bar Bending Schedules: Bar Marks, Cover, Laps and Spacing
- Structural Steel Framing Plans, Member Schedules and Connection Details
- Civil Drawings: Site Layout, Grading Contours, Road Profiles and Drainage Invert Levels
- MEP Overview: HVAC Duct Layouts, Plumbing Riser Diagrams and Electrical Single-Line Diagrams

Day 4: Linking Documents, Change Control and Error Detection

- Drawing-to-Specification-to-BOQ Cross-Referencing Matrix for Measurement and Purchasing Checks
- Revision Clouds, Transmittals and Superseded Drawing Control Registers
- Request for Information Drafting, Logging and Response Tracking
- Shop Drawing and Material Submittal Review Against Specification Sections
- Discrepancy Checklist: Dimension Conflicts, Missing Details and Inter-Discipline Clashes

Day 5: Case Study: Interpreting a Live Drawing and Specification Package

- Digital Drawing Sets: PDF Markup Tools, DWG Viewers and IFC Model Viewers at Overview
- As-Built Drawing Preparation: Redline Mark-Ups and Record Drawing Handover
- Case Package Review: Mid-Rise Building Drawing Set and Specification Extract
- Infrastructure Case: Box Culvert and Access Road Drawing Discrepancy Search
- Final Drawing and Specification Review Checklist and Discrepancy Register Delivery

Skills You Will Gain:

- Drawing Set Navigation
- Scale and Dimension Interpretation
- Reinforcement Detail Reading
- Specification Section Referencing
- Quantity Traceability Checking
- Revision and Transmittal Control
- Shop Drawing Review
- Clash and Discrepancy Detection

Why Attend This Course:

- Read any drawing sheet from title block to detail callout with confidence and find the specification clause that governs it
- Stop rework and wrong orders caused by superseded revisions, unscaled dimensions and mismatched BOQ items
- Write RFIs and shop drawing comments that designers can answer quickly because they cite the exact sheet, grid and section
- Take back a Drawing and Specification Review Checklist and a completed Discrepancy Register ready for use on the next drawing issue

Conclusion:

Drawings show where and how much; specifications say what quality and how it is installed; the BOQ says how it is measured and paid. Reading them together is what keeps site work, quantities and orders aligned. The week moves from sheet organisation and conventions through specification structure, structural, civil and MEP sheets, then into revisions, RFIs, submittals and clash checks. On the final day participants apply the method to building and infrastructure cases and finish a review checklist and discrepancy register for their own projects.