Safety in Design for Construction: Designer Risk Assessment and Duty Holder Coordination

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Dubai - Five-star CBD venue



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Introduction:

Many falls, collapses, struck-by injuries and maintenance accidents are fixed on the drawing board long before anyone reaches site: a roof with no edge protection anchor, a plant room reachable only by ladder, a glazing panel that cannot be cleaned safely, a steel frame that is unstable until the last bracing goes in. Safety in design gives clients, designers and principal contractors a method to eliminate these hazards early. This Core Concept course covers duty holder roles, designer risk assessment, residual risk information and handover records. Participants produce a Design Risk Register and Safety in Design Review Record for a case building project.

Course Objectives:

- Allocate design safety roles among client, principal designer, discipline designers, principal contractor and trade contractors on a building project
- Apply prevention through design and the hierarchy of controls to eliminate or reduce foreseeable construction, maintenance and demolition hazards in design options
- Carry out designer risk assessments and maintain a design risk register that tracks each hazard from concept to handover
- Communicate significant residual risks through drawing notes, pre-construction information and the interface with the construction phase plan
- Facilitate safety in design reviews and workshops that test access, cleaning, replacement, erection sequence and temporary works assumptions
- Compile the health and safety file content a building owner needs to operate, maintain, alter and demolish the asset safely

Target Audience:

- Client-side project sponsors and development managers who set the design brief and appoint the design team
- Lead designers and design coordinators who manage information flow between architectural, structural and building services disciplines
- Architects and design engineers who make layout, structural, facade and plant decisions that shape construction and upkeep risk
- Principal contractor design managers and pre-construction leads who receive design information and plan construction sequence
- Facilities and asset managers who inherit the building and depend on the handover file for safe maintenance

Course Outline:

Day 1: Why Design Decisions Create Construction and Maintenance Risk

- Accident Case Review: Falls from Roofs, Fragile Rooflights and Facade Access Failures
- Prevention Through Design and Safe Design Lifecycle: Concept, Build, Use, Alteration and Demolition
- Duty Holder Map: Client, Principal Designer, Discipline Designers, Principal Contractor and Trade Contractors
- Client Brief Checklist: Safety Expectations, Resources, Programme Time and Appointment Competence
- Current Design Practice Baseline Using a Safety in Design Maturity Checklist

Day 2: Design Risk Frameworks, Duties and Hierarchy of Design Controls

- Designer Duty Sequence: Eliminate Foreseeable Hazards, Reduce Remaining Risk, Provide Residual Risk Information
- Hierarchy of Controls at Design Stage: Elimination, Substitution, Engineering Measures and Information
- Reasonably Practicable Test: Weighing Risk Reduction Against Cost, Time and Buildability
- Inherently Safer Building Design Principles for Layout, Structure, Envelope and Services
- Principal Designer Coordination Plan: Design Stages, Information Gates and Sign-Off Points

Day 3: Designer Risk Assessment, Registers and Residual Risk Information

- Designer Risk Assessment Worksheet: Hazard, Affected Persons, Design Response and Owner
- Design Risk Register Structure: Hazard Status Codes, Discipline Ownership and Stage Updates
- Residual Risk Notation on Drawings: Hazard Symbols, Notes and Significant Risk Filters
- Pre-Construction Information Pack: Existing Services, Ground Conditions, Asbestos Surveys and Site Constraints
- Construction Phase Plan Interface: Handing Design Assumptions to the Principal Contractor

Day 4: Maintenance, Temporary Works, Sequencing and Coordination Problem Cases

- Designing for Maintenance and Cleaning: Roof Access, Plant Replacement Routes and Glazing Cleaning Strategies
- Erection Sequence and Structural Stability Assumptions Declared by the Permanent Works Designer
- Temporary Works Interfaces: Propping, Excavation Support and Facade Retention Implications for Design
- Design Change Control: Value Engineering, Contractor Design Portions and Late Specification Changes
- Competence Assessment of Design Organisations and Coordination Failures Across Discipline Boundaries

Day 5: Case Building Project: Design Risk Register and Safety in Design Review

- Case Brief: Mid-Rise Mixed-Use Building with Basement, Atrium Glazing and Rooftop Plant
- Safety in Design Workshop Facilitation Using Hazard Prompt Lists and Model Walkthroughs
- Design Risk Register Build with Residual Risk Drawing Notes for the Case Building
- Health and Safety File Contents List: As-Built Hazards, Structural Principles and Maintenance Access
- Safety in Design Review Record Presentation to a Client and Contractor Challenge Panel

Skills You Will Gain:

- Designer Risk Assessment
- Design Risk Register Management
- Hazard Elimination in Design Options
- Residual Risk Communication
- Safety in Design Workshop Facilitation
- Maintainability Review
- Design Interface Coordination
- Health and Safety File Compilation

Why Attend This Course:

- Leave with a Design Risk Register and Safety in Design Review Record built on a realistic mixed-use building case
- Spot the drawing-board decisions that later force workers onto fragile roofs, into confined plant rooms or under unstable frames
- Give contractors and building owners residual risk information they can act on rather than generic warning notes
- Compare design safety practice with clients, architects, engineers and contractors from commercial, residential, healthcare and industrial building projects

Conclusion:

The cheapest point to remove a construction or maintenance hazard is before it is drawn. The course moves from the accident patterns that start in design and the duty holder roles on a building project, through the hierarchy of design controls and the reasonably practicable test, to designer risk assessment, the design risk register, residual risk notation and pre-construction information, then maintenance access, erection sequence, temporary works interfaces and change control. The final day applies that material to a mixed-use case and produces a Design Risk Register and Safety in Design Review Record.