CORE CONCEPT

Tower Crane Management Course: Selection, Foundations, Climbing, Anti-Collision and Inspection

29 November – 3 December 2026
Riyadh - KAFD district five-star

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Ref: 1948_29003 **Date:** 29 November – 3 December 2026 **Location:** Riyadh - KAFD district five-star **Fees:** 20000 SAR

Introduction:

Tower crane management, from selection and foundations to climbing, anti-collision and inspection, is a 1-week course for contractor lifting, temporary works and high-rise site management staff that ends with a Tower Crane Management Plan for a case project. Projects lose time and face serious incidents when cranes are sited without oversail checks, bases are cast before reactions are confirmed, climbs are improvised and overlapping jibs run without zoning. Nominees already plan or supervise crane-dependent construction and learn through inspection walkthroughs of crane bases, ties, climbing frames and examination records. CoreConcept Training Center delivers this tower crane management course.

Course Objectives:

- Select hammerhead, flat-top, luffing-jib or self-erecting tower cranes and site them against footprint, hook coverage, oversail and dismantling access
- Verify base, foundation, tie-in and climbing collar reactions supplied by the crane manufacturer against the temporary works design brief
- Plan erection, hydraulic climbing and dismantling sequences with assist crane selection, mast section counts and exclusion areas
- Set anti-collision zoning, slewing restriction and working sequence rules where several tower crane jibs overlap
- Apply in-service and out-of-service wind limits, free slewing arrangements and load moment limiter checks to daily crane control
- Produce a Tower Crane Management Plan with examination intervals, pre-use checks and incident escalation for a case high-rise project

Target Audience:

- Contractor lifting management staff responsible for the tower crane fleet on building and infrastructure projects
- Temporary works coordination staff responsible for crane bases, ties and climbing frame approvals
- High-rise site management staff responsible for logistics, hook time allocation and crane-dependent sequences
- Project engineering staff responsible for reviewing crane subcontractor proposals and method statements
- Plant and equipment management staff responsible for crane hire, examination records and maintenance contracts

Course Outline:

Day 1: Tower Crane Types, Site Logistics and Current Crane Arrangements

- Hammerhead, Flat-Top and Luffing-Jib Crane Configuration Comparison
- Self-Erecting Bottom-Slewing Crane Use on Low-Rise Phases
- Hook Coverage Mapping Against Building Footprint and Laydown Areas
- Oversail Survey of Neighbouring Property, Roads and Power Lines
- Tower Crane Fleet Register and Current Project Arrangement Review

Day 2: Crane Standards, Manufacturer Data and Support Design Inputs

- Manufacturer Load Diagram, Jib Length and Counter-Jib Ballast Tables
- ISO 4302 Wind Load Assessment Principles for Crane Structures
- ISO 12482 Condition Monitoring and Remaining Design Life Review
- Base Reaction Data Sheet With Slewing Moment and Vertical Load
- Temporary Works Design Brief for Crane Base and Tie Frames

Day 3: Foundations, Ties, Erection and Hydraulic Climbing Sequences

- Cast-In Anchor, Fixing Angle and Pile Cap Base Arrangements
- Tie-In Frame and Strut Load Transfer Into Core Walls
- Erection Sequence With Mobile Assist Crane and Mast Section Lifts
- External Climbing Frame Jacking Procedure and Tie Spacing Checks
- Internal Climbing Through Floor Openings With Collar and Wedge Checks

Day 4: Anti-Collision Zoning, Wind Limits and Tower Crane Incident Lessons

- Anti-Collision System Zoning for Overlapping Jibs and Hook Paths
- Slewing Restriction Zones Over Public Areas and Occupied Buildings
- Anemometer Readings, Operational Wind Thresholds and Stop Procedure
- Out-of-Service Free Slewing Release and Weathervaning Clearance Checks
- Collapse, Jib Clash and Climbing Failure Case Lessons

Day 5: Inspection Walkthrough and Tower Crane Management Plan Build

- Case High-Rise Crane Base and Tie Frame Inspection Walkthrough
- Load Moment Limiter, Limit Switch and Brake Pre-Use Check Walkthrough
- Thorough Examination Record and Defect Escalation Matrix Review
- Case Multi-Crane Zoning Drawing and Climbing Schedule Preparation
- Tower Crane Management Plan Completion and Peer Challenge

Skills You Will Gain:

- Tower Crane Configuration Selection
- Hook Coverage and Oversail Planning
- Crane Base Reaction Verification
- Climbing Sequence Planning
- Multi-Crane Anti-Collision Zoning
- Wind Limit Control
- Crane Examination Record Review
- Crane Incident Escalation

Why Attend This Course:

- Deliver a Tower Crane Management Plan for a case high-rise project to the project director and the lifting operations lead
- Decide when a crane base, tie frame or climb may proceed and when it must wait for verified reactions
- Avoid jib clashes, wind-related collapses and stalled climbs that halt concrete cycles and facade installation
- Brief crane coordinators, signallers and subcontractors using the zoning drawing, wind stop procedure and pre-use checklist

Conclusion:

Back at work, the participant presents the Tower Crane Management Plan to the project director, the temporary works coordinator and the lifting operations lead. They use it to approve crane positions, base and tie designs, climbing dates, anti-collision zones and wind stop rules, and to assign owners for examinations and pre-use checks. After the first climb or first month of multi-crane working under the plan, the project should review zoning breaches, wind stoppages, examination findings and any near misses, then revise the plan.

Frequently Asked Questions FAQ:

What should participants know before the tower crane management course?

Participants should already plan, coordinate or supervise construction work that depends on tower cranes and be able to read site layout drawings and crane manufacturer data sheets. Bringing a current crane layout or climbing schedule lets the case work reflect their own project.

How does tower crane management differ from mobile crane heavy lift planning?

Tower crane management deals with a crane that stays on site for months: its siting, base, ties, climbing, zoning with other cranes, wind control and periodic examination. Heavy lift planning deals with selecting mobile or crawler cranes and rigging for individual engineered lifts.

Why do tower cranes on the same site need anti-collision zoning?

Overlapping jibs, hook paths and counter-jibs can strike each other or a structure when cranes slew at the same time. Zoning sets height separation, slewing limits and priority rules, and an anti-collision system enforces them so that one operator error does not cause a clash.

What do participants take back from the tower crane management course?

Participants take back a Tower Crane Management Plan with crane selection and siting, base and tie verification records, a climbing schedule, a multi-crane zoning drawing, wind stop rules, pre-use checklists and an examination and incident escalation matrix.