
Construction Essentials Training Course: Drawings, Methods, Costs and Site Risks for Managers

1 – 5 March 2027
Tokyo





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Programme Summary

Construction essentials are the subject of this one-week training course for mechanical, electrical, process and commercial managers at managerial level who work with civil teams, ending in a project interface file for one capital project. Managers outside civil engineering sign off equipment, services and budgets that depend on foundations and site sequence they cannot read. The programme moves from drawings and structures to methods, quantities, quality and site risk, using cases from industrial plants, buildings and utility works. Mars Training Centre UK delivers this programme on construction essentials to mixed-organisation cohorts.

The Business Case

Delay at the boundary between disciplines often comes from small civil facts never checked: a foundation not ready for equipment, a missing duct opening, a pour sequence that blocks installation. Managers who cannot read the civil package depend on others to raise these issues. Common vocabulary and interface checks let them ask the right question while changes are still cheap.

- Interface Clashes: Fall as civil requirements are checked against equipment and services early.
- Rework Cost: Reduces as quantities and method assumptions are tested before orders are placed.
- Site Delay: Reduces as access, sequence and handover dates are agreed across disciplines.

Principles and Evidence Base

- ISO 19650 Series on Information Management for Buildings and Civil Engineering Works: Structures how drawings and project information are organised and exchanged, applied in Sessions 1 and 5.
- ISO 19650 Part 6 on Health and Safety Information: Frames the hazard information that design and site teams pass on, applied in Session 4.
- Load Path and Work Sequence Logic: Explains how structures carry loads and how construction order follows from them, applied in Sessions 2 and 3.

Intended Participants

- Mechanical and electrical managers who place equipment and services in civil works.
- Process managers who rely on foundations, bunds and structures for plant.
- Commercial managers who price and procure construction packages.
- Project coordinators who track civil interfaces.
- Operations leaders who accept completed facilities.

Typical settings include industrial plants, utilities, developers and infrastructure operators.



Learning Outcomes

1. Participants will be able to interpret drawings and specifications for the civil elements that affect their own work.
2. Participants will be able to diagnose how foundations, structures and materials behave under the loads they must carry.
3. Participants will be able to evaluate construction methods and sequence for their effect on installation and access.
4. Participants will be able to estimate quantities and challenge a civil cost build-up.
5. Participants will be able to appraise quality and site safety arrangements.
6. Participants will be able to justify a project interface file that records civil dependencies and agreed actions.

Programme Structure

Day 1: Construction Essentials: Drawings and Specifications

How are civil drawings and specifications read by someone who is not a civil engineer?

- Drawing Set Structure Guide
- Plan, Section and Detail Reading Sheet
- Specification Clause Checklist
- Drawing Revision and Information Register
- Civil Interface Question List

Day 2: Structures, Foundations and Materials

How do structures and foundations carry loads, and what do materials contribute?

- Load Path Sketch
- Foundation Type Comparison
- Concrete and Steel Summary
- Ground Report Reading Guide
- Foundation Requirement Sheet

Day 3: Methods, Sequence, Quantities and Cost

How does the order of work shape installation, quantities and cost?

- Construction Method Statement Review
- Work Breakdown and Sequence Chart
- Quantity Take-Off Exercise
- Bill of Quantities Reading Guide
- Cost Build-Up Challenge Sheet



Day 4: Quality and Site Safety

What quality and safety controls does a civil package need before others can build on it?

- Inspection and Test Plan Review
- Concrete Pour Quality Checklist
- Work at Height and Excavation Risk Screen
- Permit and Handover Register
- Defect and Snagging Log

Day 5: Project Interface File for One Capital Project

Do the earlier records support one agreed set of interface actions?

- Applying the Session 1 Civil Interface Question List
- Testing the Session 2 Foundation Requirement Sheet
- Reviewing the Session 3 Work Breakdown and Sequence Chart
- Checking the Session 4 Permit and Handover Register
- Completing the Project Interface File

Methodology

The programme uses a structured exercise on one prepared capital project with drawings, a specification extract, a method statement and a priced package. Participants read each document for points that affect their discipline, log questions in a common format, then apply the same sheets to a project of their own.

- Suggested activity: Finding the clash between an equipment base and a foundation.
- Suggested activity: Estimating the concrete quantity for a plant slab and testing a quoted price.
- Suggested activity: Reordering a work sequence to give installers early access.

Capstone Output

Each participant completes a project interface file for one capital project. It holds a civil interface question list, a foundation and load requirement summary, a sequence and access note, a quantity and cost check and a decision record for each open point. The file is used at work to brief the project team and question civil designers.

Frequently Asked Questions

Is construction essentials training suitable for managers with no civil engineering background?

Yes. Construction essentials are taught through a worked project. The training assumes experience in engineering, operations or commercial management, but no civil design knowledge.



Which references does construction essentials training rest on?

Construction essentials training rests on the ISO 19650 series for project information, its Part 6 on health and safety information, and load path and work sequence logic.

How is the interface file from construction essentials training used at work?

You use the project interface file to brief your team, raise questions with civil designers, and track agreed actions on foundations, access and handover.

How does construction essentials differ from construction project management training?

Construction essentials training teaches how civil works are drawn, built, measured and made safe, while construction project management training concentrates on planning, controlling and leading a whole project.