



Consulting and Training | Reach New Heights

Course Name

Structural Performance & Condition Assessment

Sector Name

Civil Engineering

Document Type

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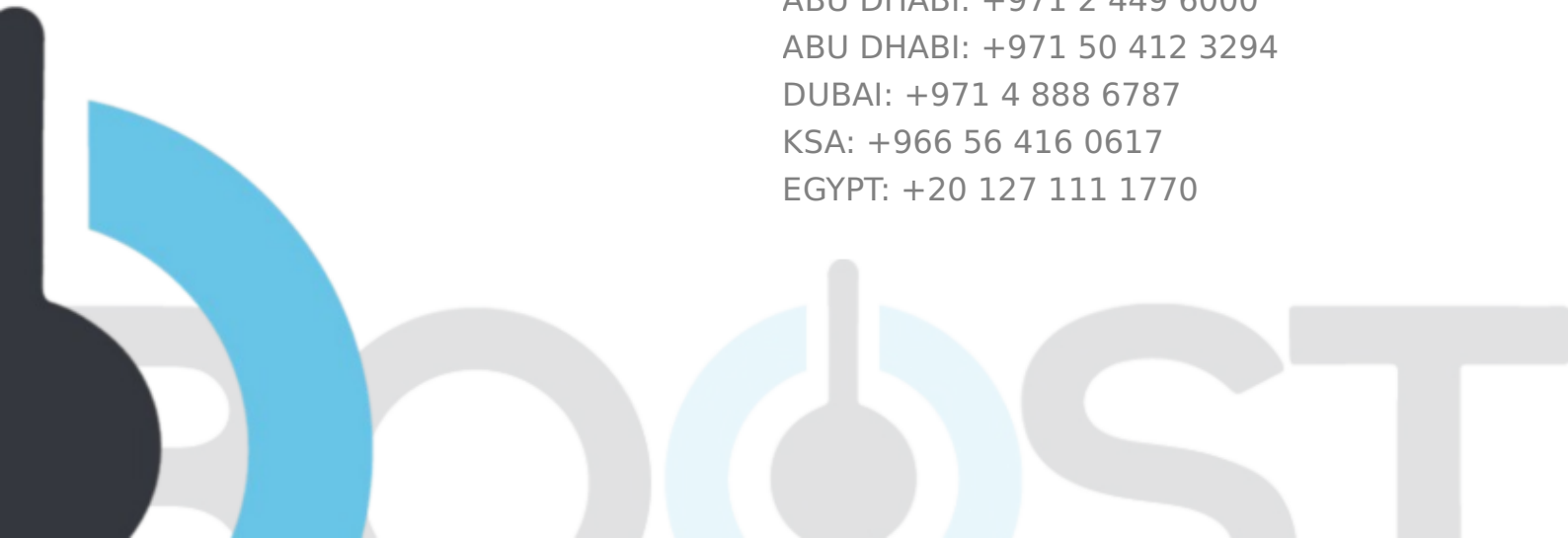
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Structural Performance & Condition Assessment

Course Introduction

Existing structures rarely move from satisfactory conditions to serious deterioration without leaving evidence along the way. Cracking, deformation, corrosion, material degradation, water ingress, unusual movement, and changes in service conditions can all indicate different levels of concern. The engineering challenge is not simply to identify these signs, but to determine what they mean for the structure's actual performance, which findings require further investigation, and where intervention should be prioritized.

Boost Consulting & Training has designed this course to develop a practical, engineering-based approach to evaluating existing structures. Participants will learn how to plan condition assessments, read visible deterioration patterns, select appropriate investigation and testing methods, interpret findings alongside structural behavior, establish condition and performance priorities, and translate assessment evidence into technically justified recommendations. The program deliberately connects field observations with engineering judgment rather than treating inspection, testing, and structural evaluation as separate activities.



The main concept of this course is to turn structural condition evidence into informed engineering decisions about performance, priority, further investigation, and appropriate intervention.

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Target Audience

- ✓ Civil and structural engineers
- ✓ Inspection and maintenance engineers
- ✓ Asset and infrastructure engineers
- ✓ Engineering consultants and technical project professionals

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Learning Objectives

- ✓ Establish a structured approach for assessing the condition and performance of existing structures.
- ✓ Recognize deterioration patterns and structural symptoms that require engineering attention.
- ✓ Distinguish cosmetic, durability-related, serviceability, and potentially structural concerns.
- ✓ Plan field investigations according to the structure, observed condition, and available evidence.
- ✓ Select appropriate destructive and non-destructive testing methods for different assessment needs.
- ✓ Interpret inspection and testing results in relation to structural behavior and service conditions.
- ✓ Prioritize findings according to significance, urgency, and potential consequences.
- ✓ Develop evidence-based recommendations for monitoring, maintenance, further analysis, repair, or strengthening.

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Structural Performance & Condition Assessment

Course Outline

✓ DAY 1

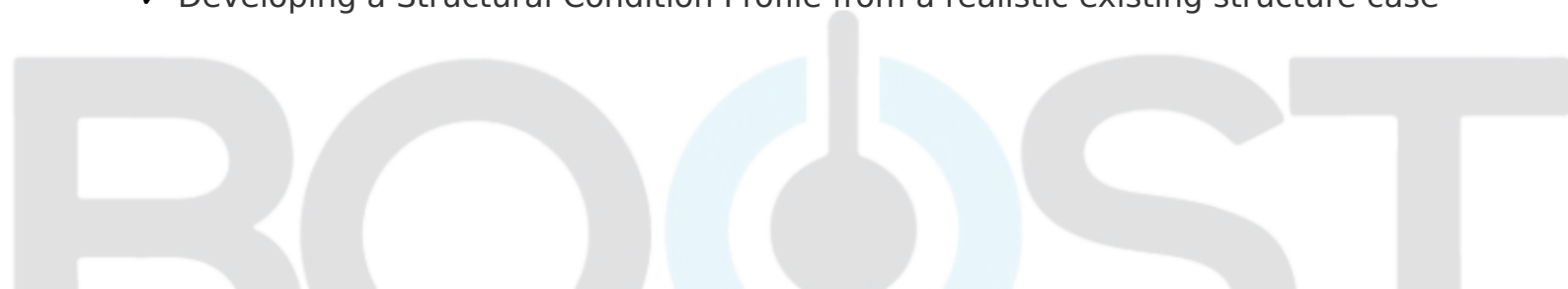
Reading the Condition of Existing Structures

Structural Condition as Engineering Evidence

- ✓ Understanding the relationship between age, exposure, loading history, use, and structural condition
- ✓ Distinguishing visible symptoms from the mechanisms that may be producing them
- ✓ Recognizing when apparently minor deterioration deserves deeper engineering investigation

Building the Initial Condition Picture

- ✓ Reviewing drawings, modifications, maintenance records, incidents, and previous assessment information
- ✓ Conducting systematic visual surveys of structural elements and critical locations
- ✓ Developing a Structural Condition Profile from a realistic existing structure case



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Course Outline

✓ DAY 2

Diagnosing Deterioration and Structural Symptoms

Interpreting Cracks, Movement and Deformation

- ✓ Classifying cracking patterns according to location, orientation, width, progression, and likely significance
- ✓ Examining deflection, settlement, displacement, distortion, and other indicators of structural movement
- ✓ Differentiating symptoms requiring monitoring from those requiring immediate technical investigation

Understanding Material Deterioration

- ✓ Assessing corrosion-related damage, spalling, moisture effects, chemical attack, and material degradation
- ✓ Connecting environmental exposure and service conditions with deterioration mechanisms
- ✓ Completing a Deterioration Diagnosis Exercise using field observations and photographic evidence

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Course Outline

✓ DAY 3

Investigating Beyond the Visible Evidence

Designing an Effective Investigation Strategy

- ✓ Identifying information gaps that cannot be resolved through visual inspection alone
- ✓ Selecting investigation locations according to structural significance and observed deterioration
- ✓ Balancing investigation depth, access limitations, cost, disruption, and required confidence

Selecting and Using Testing Methods

- ✓ Matching non-destructive, semi-destructive, and destructive techniques to specific assessment questions
- ✓ Understanding the capabilities and limitations of common concrete and structural testing methods
- ✓ Developing a Targeted Investigation Plan for an existing structure with uncertain condition

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Course Outline

✓ DAY 4

From Assessment Data to Structural Judgment

Interpreting Multiple Sources of Evidence

- ✓ Combining inspection observations, measurements, test results, drawings, and service history
- ✓ Resolving conflicting or inconclusive evidence without overstating assessment certainty
- ✓ Identifying where additional analysis, monitoring, testing, or specialist evaluation is justified

Rating Condition and Performance Significance

- ✓ Evaluating findings in terms of durability, serviceability, structural significance, and progression
- ✓ Prioritizing elements according to condition severity and consequences of further deterioration
- ✓ Conducting a Structural Assessment Case Conference to defend condition and priority decisions

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Course Outline

✓ DAY 5

Turning Assessment into Engineering Action

Selecting the Appropriate Engineering Response

- ✓ Determining when findings support routine maintenance, monitoring, detailed analysis, repair, or strengthening
- ✓ Establishing priorities according to deterioration rate, structural importance, exposure, and service requirements
- ✓ Avoiding unnecessary intervention when monitoring or targeted investigation provides a better engineering response

Communicating the Assessment for Action

- ✓ Building clear assessment conclusions supported by traceable engineering evidence
- ✓ Presenting condition priorities, limitations, uncertainties, and recommended next actions
- ✓ Producing a Structural Performance & Condition Assessment Brief for a complete case study

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Nov. 30, 2026	Dec. 4, 2026	5 days	4250.00 \$	UAE , Dubai
Jan. 31, 2027	Feb. 4, 2027	5 days	4250.00 \$	Bahrain , Manama
June 7, 2027	June 11, 2027	5 days	4250.00 \$	UAE , Dubai
Aug. 2, 2027	Aug. 6, 2027	5 days	4950.00 \$	Austria , Vienna

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