



Consulting and Training | Reach New Heights

Course Name

Infrastructure Lifecycle & Asset Performance

Sector Name

Civil Engineering

Document Type

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Infrastructure Lifecycle & Asset Performance

Course Introduction

Infrastructure assets do not remain in the same condition throughout their operating life. Roads, bridges, drainage systems, utilities, retaining structures, and other civil assets gradually experience deterioration, changing demand, repeated maintenance, environmental exposure, and evolving service requirements. The engineering challenge is to determine when an asset can continue operating as it is, when intervention becomes necessary, and which action will provide the greatest long-term value.

Boost Consulting & Training has designed this course to connect infrastructure conditions with lifecycle engineering decisions. Participants will learn how to interpret asset condition and performance information, recognize deterioration trends, establish intervention priorities, compare maintenance, rehabilitation, and renewal options, and consider remaining service life when planning future actions. The course moves beyond routine maintenance planning by focusing on how engineers can make better decisions across the entire life of an infrastructure asset.

The main concept of this course is to manage infrastructure according to how its condition and performance evolve over time,

enabling engineering interventions to occur at the right stage rather than simply reacting when assets reach unacceptable condition.

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Target Audience

- ✓ Civil and infrastructure engineers
- ✓ Asset and maintenance engineers
- ✓ Infrastructure planning professionals
- ✓ Engineering consultants and technical managers

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Learning Objectives

- ✓ Explain how infrastructure conditions and performance evolve across the asset lifecycle.
- ✓ Identify factors that influence deterioration rates and remaining service potential.
- ✓ Interpret inspection, condition, maintenance, and performance information for lifecycle decisions.
- ✓ Establish meaningful condition and performance indicators for infrastructure assets.
- ✓ Prioritize interventions according to asset condition, criticality, and service requirements.
- ✓ Compare maintenance, rehabilitation, renewal, and replacement alternatives.
- ✓ Apply lifecycle thinking to intervention timing and long-term infrastructure performance.
- ✓ Develop practical lifecycle strategies for selected infrastructure assets.

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Course Outline

✓ DAY 1

Understanding the Infrastructure Lifecycle

Following the Asset Through Its Working Life

- ✓ Examining infrastructure stages from commissioning and early operation through ageing and intervention
- ✓ Understanding how loading, environment, use, maintenance, and previous repairs influence future performance
- ✓ Recognizing different deterioration patterns across infrastructure asset types

Defining Asset Performance

- ✓ Connecting physical condition with functionality, reliability, capacity, and service requirements
- ✓ Distinguishing condition deterioration from actual loss of required performance
- ✓ Developing an Asset Performance Profile for a selected infrastructure case

Infrastructure Lifecycle & Asset Performance

Course Outline

✓ DAY 2

Reading Deterioration Over Time

Understanding Deterioration Progression

- ✓ Identifying gradual, accelerated, and event-driven deterioration patterns
- ✓ Examining how exposure and accumulated damage influence deterioration rates
- ✓ Recognizing indicators that an asset may be approaching a significant performance threshold

Turning Condition Information into Trends

- ✓ Organizing inspection histories, maintenance records, defects, measurements, and performance observations
- ✓ Comparing successive condition information to identify progression rather than isolated defects
- ✓ Completing an Asset Deterioration Mapping Exercise using historical condition data

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Course Outline

✓ DAY 3

Setting Intervention Priorities

Identifying Assets Requiring Attention

- ✓ Combining condition, performance, criticality, and consequences when evaluating intervention needs
- ✓ Differentiating urgent technical needs from interventions that can be planned over a longer horizon
- ✓ Avoiding prioritization based solely on the poorest physical condition

Building Engineering Priorities Across an Asset Portfolio

- ✓ Comparing assets with different functions, conditions, deterioration rates, and service importance
- ✓ Establishing practical criteria for ranking engineering attention and available resources
- ✓ Conducting an Infrastructure Intervention Prioritization Challenge across a simulated asset portfolio



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Course Outline

✓ DAY 4

Choosing the Right Lifecycle Intervention

Comparing Intervention Pathways

- ✓ Evaluating preventive maintenance, corrective maintenance, rehabilitation, renewal, and replacement
- ✓ Matching intervention depth to deterioration stage and required future performance
- ✓ Considering the consequences of early, delayed, or repeated intervention

Making Whole-Life Engineering Choices

- ✓ Comparing initial intervention requirements with future maintenance and expected service extension
- ✓ Considering disruption, technical feasibility, remaining life, and recurring deterioration
- ✓ Completing a Lifecycle Options Analysis for an ageing infrastructure asset

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Course Outline

✓ DAY 5

Planning Future Asset Performance

Timing Interventions for Long-Term Value

- ✓ Identifying practical intervention windows before deterioration becomes unnecessarily difficult or costly to manage
- ✓ Coordinating inspection, maintenance, rehabilitation, and future reassessment activities
- ✓ Adjusting intervention timing as new condition and performance information becomes available

Building the Asset Lifecycle Strategy

- ✓ Establishing short-, medium-, and long-term engineering actions for selected infrastructure assets
- ✓ Connecting lifecycle priorities with technical planning and future investment requirements
- ✓ Developing an Infrastructure Lifecycle & Asset Performance Strategy for a realistic asset portfolio

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Dec. 14, 2026	Dec. 18, 2026	5 days	4250.00 \$	UAE , Dubai
Jan. 10, 2027	Jan. 14, 2027	5 days	4250.00 \$	UAE , Dubai
April 26, 2027	April 30, 2027	5 days	4950.00 \$	Italy , Milan
July 25, 2027	July 29, 2027	5 days	4250.00 \$	Oman , Salalah

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