

Course No. 1677

Infrastructure Asset Management & Lifecycle Planning

**PUBLIC ASSET & FACILITIES MANAGEMENT
GOVERNMENT & PUBLIC SECTOR**

DURATION

5 Days

LOCATION

Kuala Lumpur, Malaysia

DELIVERY

Classroom

DATES

2 – 6 Nov 2026



Scheduled Event Details

CITY	Kuala Lumpur, Malaysia
DATE	2 – 6 Nov 2026
DELIVERY TYPE	Classroom
COURSE FEE	€4,400

Course Overview

The Infrastructure Asset Management & Lifecycle Planning Training Course provides a strategic and practical framework for managing infrastructure assets throughout their complete lifecycle, from planning, design, and acquisition through operation, maintenance, renewal, and eventual replacement or decommissioning. The course focuses on balancing performance, cost, risk, resilience, and sustainability to maximize long-term value from infrastructure investments.

Infrastructure owners and operators face increasing challenges associated with aging assets, rising maintenance costs, changing service requirements, limited resources, regulatory expectations, and the need for reliable and resilient infrastructure. This course addresses these challenges by introducing an integrated asset management approach that connects investment decisions, operations, maintenance, performance, risk, and lifecycle planning within a structured framework.

The program covers the essential principles of infrastructure asset management, including asset inventories, classification, criticality assessment, condition assessment, risk management, performance measurement, maintenance planning, renewal strategies, capital investment planning, and long-term infrastructure forecasting. Participants will learn how asset information can be transformed into practical insights that support investment prioritization and operational decision-making.

A strong focus is placed on lifecycle planning and long-term asset strategies. Participants will examine how to determine whether assets should be repaired, maintained, renewed, upgraded, or replaced, while considering total cost of ownership, service requirements, asset condition, risk exposure, and future demand. The course also explores how lifecycle plans can be aligned with organizational objectives, financial planning, sustainability requirements, resilience, and business continuity.

Through case studies, practical exercises, asset data analysis, risk assessment activities, and planning workshops, participants will develop the ability to create practical infrastructure asset management and lifecycle plans. The course is particularly relevant to government entities, municipalities, infrastructure operators, utilities, transportation organizations, energy companies, oil and gas organizations, industrial facilities, and large corporations seeking to improve asset performance, investment efficiency, reliability, and long-term infrastructure value.

Objectives

- Analyze the principles of infrastructure asset management and their relationship with organizational and operational objectives.
- Assess infrastructure asset condition, criticality, and impact on service continuity and organizational performance.
- Apply lifecycle planning methodologies to connect asset decisions with cost, performance, risk, and value.
- Develop appropriate operating, maintenance, renewal, and replacement strategies based on asset condition and performance requirements.
- Evaluate risks associated with aging, deterioration, failure, and obsolescence of infrastructure assets.
- Analyze total cost of ownership and lifecycle costs to support infrastructure investment decisions.
- Develop long-term maintenance, renewal, replacement, and capital investment plans for infrastructure assets.
- Evaluate investment alternatives according to performance requirements, risk exposure, cost, and expected organizational value.
- Apply asset performance indicators to measure condition, reliability, availability, utilization, and service performance.
- Improve the use of asset data in capital planning, financial forecasting, maintenance planning, and infrastructure decision-making.
- Align infrastructure asset management plans with service levels, sustainability, resilience, and business continuity requirements.
- Develop an integrated infrastructure asset lifecycle management plan by the end of the course.

Who Should Attend

This training course is designed for Infrastructure Asset Managers, Facilities Managers, Maintenance Managers, Engineering Managers, Operations Managers, Infrastructure Planning Managers, Capital Investment Managers, Project Managers, Reliability Professionals, Asset Management Specialists, and professionals responsible for infrastructure performance, maintenance, investment, and lifecycle planning.

The course is particularly suitable for professionals working in ministries, government entities, municipalities, public-sector organizations, utilities, water and electricity organizations, transportation authorities, airports, ports, road infrastructure organizations, energy companies, oil and gas organizations, industrial facilities, and large corporations that own or operate strategic infrastructure assets.

The program will also benefit executives, senior managers, infrastructure decision makers, investment and portfolio managers, financial planning professionals, risk managers, and project leaders involved in infrastructure development, maintenance, renewal, replacement, and capital investment decisions. It provides a practical framework for balancing cost, performance, risk, service requirements, resilience, and long-term asset value.

Learning Outcomes

- Explain the principles and key components of infrastructure asset management and lifecycle planning.
- Classify infrastructure assets according to criticality, service importance, operational role, and organizational impact.
- Assess asset condition and identify deterioration, aging, obsolescence, and potential failure risks.
- Develop appropriate operating and maintenance strategies across different stages of the asset lifecycle.
- Apply lifecycle analysis to support repair, renewal, upgrade, and replacement decisions.
- Analyze total cost of ownership and lifecycle costs in relation to asset performance and risk.
- Identify capital investment priorities based on asset condition, service requirements, risk exposure, and performance.
- Develop long-term maintenance, renewal, replacement, and asset investment plans.

- Apply asset performance indicators to monitor reliability, availability, condition, utilization, and service levels.
- Analyze asset information and performance data to support financial, operational, and investment decisions.
- Integrate infrastructure asset management with resilience, sustainability, business continuity, and service delivery objectives.
- Develop a practical infrastructure asset lifecycle roadmap covering asset condition, risk, maintenance, renewal, replacement, investment priorities, and performance indicators.

Course Outline

DAY 01

Infrastructure Asset Management Foundations & Lifecycle Principles

- Principles, objectives, and value drivers of infrastructure asset management
- Infrastructure asset classification, inventory, criticality, and service relationships
- Asset lifecycle stages from planning and design to operation, renewal, and replacement
- Asset management governance, responsibilities, decision-making, and value optimization

PRACTICAL APPLICATION

Develop an initial infrastructure asset register and assess asset criticality, condition, and management requirements

DAY 02

Asset Condition Assessment, Risk & Performance Management

- Infrastructure asset condition assessment methodologies
- Asset deterioration, aging, obsolescence, and failure mechanisms
- Identifying asset failure risks and their impact on services and operations
- Risk assessment, criticality analysis, and asset performance indicators

DAY 02 — CONTINUED

PRACTICAL APPLICATION

Assess a portfolio of infrastructure assets and establish risk priorities and required interventions

DAY 03**Maintenance, Renewal & Replacement Strategies**

- Operating and maintenance strategies throughout the asset lifecycle
- Preventive, predictive, condition-based, and risk-based maintenance
- Infrastructure renewal, rehabilitation, upgrade, and replacement planning
- Decision-making between maintenance, repair, renewal, and asset replacement

PRACTICAL APPLICATION

Develop a lifecycle strategy for a selected infrastructure asset and define appropriate interventions for each lifecycle stage

DAY 04**Lifecycle Costing, Financial Planning & Capital Investment**

- Total cost of ownership and lifecycle cost analysis
- Capital investment planning and forecasting future infrastructure requirements
- Prioritizing infrastructure investments based on performance, risk, service levels, and value
- Integrating asset lifecycle plans with budgets, financial forecasts, and organizational objectives

PRACTICAL APPLICATION

Develop a preliminary infrastructure renewal and investment plan based on asset condition, risk, lifecycle cost, and strategic priority

DAY 05

Long-Term Asset Strategy, Governance & Continuous Improvement

- Developing an integrated infrastructure asset management strategy
- Long-term lifecycle planning and alignment with resilience, sustainability, and business continuity
- Asset data management and information-driven infrastructure decision-making
- Performance monitoring, asset management reviews, and continuous improvement

FINAL WORKSHOP

Develop an integrated Infrastructure Asset Management & Lifecycle Planning roadmap covering asset condition, criticality, risk, maintenance strategies, renewal and replacement requirements, capital investment priorities, performance indicators, governance, and implementation priorities

Register or Request More Information

Course page: <https://quest-training.com/courses/infrastructure-asset-management-lifecycle-planning>

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