BUILDING MAINTENANCE, ENGINEERING SERVICES & INFRASTRUCTURE MANAGEMENT COURSE

Introduction

This Course is a comprehensive professional programme designed to equip facilities managers, property managers, engineers, maintenance professionals, estate managers, operations leaders and other built-environment professionals with the knowledge and practical competencies required to effectively manage the technical, operational and infrastructural components of modern buildings and facilities. Modern buildings are complex operational environments that depend on the reliable performance of numerous interconnected systems, services and infrastructure. Effective building management therefore requires much more than responding to faults when they occur. It requires a structured approach to maintenance planning, engineering services management, infrastructure performance, asset reliability, safety, energy efficiency, compliance, risk management, budgeting and long-term facility sustainability. This programme provides a broad understanding of the principles and practices involved in managing the complete technical environment of a facility. Participants will examine the management of building structures and fabric, electrical installations, mechanical systems, heating, ventilation and air-conditioning systems, plumbing and water services, drainage, lifts and vertical transportation, fire and life-safety systems, security infrastructure, power generation and backup systems, lighting, building controls and other critical engineering services. Beyond technical systems, the course focuses strongly on the management dimension of building engineering and maintenance. Participants will learn how to establish maintenance policies and programmes, develop preventive and predictive maintenance strategies, prioritise maintenance activities, allocate technical resources, manage work orders, monitor service quality and improve the reliability and availability of critical building systems. The programme also examines how building condition, infrastructure performance and engineering-system reliability affect business continuity, workplace

productivity, occupant comfort, safety, operational costs and organizational reputation. Participants will learn how to identify technical risks, assess the criticality of building systems, establish appropriate maintenance priorities and develop strategies for reducing equipment failures, service interruptions and costly reactive interventions.

Course Objectives

- Understand major building engineering systems.
- Develop integrated building maintenance programmes.
- Improve infrastructure reliability.
- Identify common building-system failures.
- Manage technical maintenance teams.
- Improve energy and equipment performance.
- Develop maintenance schedules.
- Manage engineering contractors.
- Improve building safety.
- Reduce infrastructure-related operational risks.

Course Modules

> Module 1: Building Infrastructure Management
- Building infrastructure components
- Infrastructure management principles
- Building condition
- Infrastructure risks

> Module 2: Electrical Systems
- Electrical distribution
- Generators and backup systems
- Electrical maintenance
- Electrical safety

> Module 3: HVAC Systems
- HVAC principles
- Air-conditioning systems
- HVAC maintenance

- Indoor environmental quality

> Module 4: Plumbing and Water Systems
- Water supply
- Drainage systems
- Pumps and tanks
- Plumbing maintenance

> Module 5: Building Fabric
- Roofs
- Walls and finishes
- Floors and ceilings
- Structural and fabric defects

> Module 6: Fire Protection Systems
- Fire detection
- Fire suppression
- Emergency systems
- Fire-system maintenance

> Module 7: Engineering Maintenance
- Maintenance strategies
- Planned maintenance
- Fault diagnosis
- Maintenance scheduling

> Module 8: Infrastructure Risk Management
- Infrastructure risks
- Failure consequences
- Risk assessments
- Risk mitigation

> Module 9: Technical Contractor Management
- Contractor selection
- Technical specifications
- Service agreements
- Contractor performance

> Module 10: Building Engineering Performance

- Engineering KPIs
- Energy performance
- System reliability
- Continuous improvement