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COURSE BROCHURE

AI-Enabled Smart Building Technologies Training Course

14 – 18 March 2027
Muscat

AI-Enabled Smart Building Technologies Training Course

Ref: 50_1279 **Date:** 14 – 18 March 2027 **Location:** Muscat **Fees:** 6500 GBP

AI-Enabled Smart Building Technologies is a 1-week training course for facility managers, building services engineers and estates managers who run occupied buildings, and each participant leaves with a Smart Building Roadmap for one site. Rising energy costs, occupant expectations and ageing plant are pushing owners to make buildings sense, predict and adjust on their own. The course is delivered by Jupiter Prime Training.

Why AI-Enabled Smart Building Technologies Matter Now

Three forces shape this field. Low-cost IoT sensors and cloud analytics now let a building management system BMS learn from chiller, lighting and lift data rather than follow fixed schedules. Owners and tenants expect lower energy intensity, healthier indoor air and flexible space after hybrid working changed occupancy patterns. Connected plant also widens the attack surface for cyber-physical threats. Estates that combine these technologies well cut unplanned downtime and energy waste; those that bolt on gadgets without a plan collect unused dashboards and new security gaps. AI models in building operations are assessed against the NIST AI Risk Management Framework AI RMF and ISO/IEC 42001.

Who Gains Most from AI-Enabled Smart Building Technologies

- Professionals who run hard services and plant rooms across one or more sites
- Engineers who specify, commission and tune BMS and HVAC controls
- Estates and property professionals who plan capital works and lease space
- Energy and sustainability leads who track consumption and carbon targets
- Workplace and security professionals who manage access, occupancy and safety systems

A facilities department or property portfolio group gains most when its engineering, energy and workplace leads attend together and agree one sequence of upgrades.

AI-Enabled Smart Building Technologies Capabilities

Participants practise turning sensor readings and plant data into maintenance, energy and space decisions for real buildings.

- Assess the digital maturity of a building's systems and sensor coverage — capital planning
- Specify an IoT sensor and connectivity layout for a chosen use case — engineering and IT
- Apply predictive maintenance models to chillers, pumps and lifts — maintenance contracts
- Calculate energy savings from AI-driven HVAC optimisation — sustainability targets
- Design an occupancy analytics approach that respects occupant privacy — workplace strategy

- Build a phased smart building investment case — owners and estates boards

Key AI-Enabled Smart Building Technologies Terms

- Building management system BMS — the control platform that monitors and operates heating, cooling, ventilation, lighting and other building services.
- Digital twin — a live virtual model of a building that mirrors its assets and sensor readings for simulation and decision support.
- Predictive maintenance — using sensor trends and models to forecast equipment failure and service assets before breakdown.
- Fault detection and diagnostics FDD — software rules or models that spot abnormal plant behaviour and suggest likely causes.
- Occupancy analytics — measuring how many people use spaces and when, to adjust services and plan floor area.
- Cyber-physical security — protecting connected building systems so attacks cannot disrupt physical equipment, safety or occupant comfort.

AI-Enabled Smart Building Technologies Day by Day

Day 1: The Connected Building Landscape

- Smart Building Maturity Model — Where Each Site Stands Today
- BMS, IoT and Cloud Analytics Layers — How Data Flows
- Owner, Tenant and Operator Expectations — Comfort, Cost and Carbon
- Office and Hospital Case Comparison — Different Priorities by Sector
- Asset Register and Sensor Audit — Gaps Blocking Analytics

Day 2: Sensors, Data and Digital Twins

- IoT Sensor Selection and Placement — Temperature, CO2, Vibration, Occupancy
- Open Protocols and Integration — Avoiding Single-Vendor Lock-In
- Data Tagging and Naming Conventions — Making Plant Data Usable
- Digital Twin Scoping — Which Assets Deserve a Virtual Model
- Edge Versus Cloud Processing — Latency, Cost and Resilience

Day 3: AI for Maintenance and Energy

- Fault Detection and Diagnostics Rules — Prioritising Plant Alarms
- Predictive Maintenance Models for Chillers and Lifts — Service Timing
- AI-Driven HVAC Optimisation — Setpoints, Schedules and Demand Response
- Energy Baselining and Measurement — Proving Savings Credibly
- Model Risk Under NIST AI RMF — Overrides and Human Checks

Day 4: Occupants, Space and Security

- Occupancy Analytics and Space Utilisation — Right-Sizing Floor Area
- Indoor Air Quality Monitoring — Ventilation Decisions for Health
- Occupant Privacy Safeguards — Anonymised Counting and Data Retention
- Cyber-Physical Threat Assessment — Segmenting Building Networks
- Vendor and Integrator Contracts — Data Ownership and Support Terms

Day 5: Practising the Smart Building Roadmap

- Site Maturity Scoring Exercise — Applying the Day One Model
- Use Case Prioritisation Matrix — Savings Versus Disruption
- Investment Case Modelling — Payback for Sensors and Analytics
- Security and Privacy Checkpoint — Testing the Proposed Architecture
- Smart Building Roadmap — Phased Plan for Owner Approval

Applying AI-Enabled Smart Building Technologies After the Course

- Run a sensor and asset audit on one site and score it against the maturity model.
- Launch a fault detection trial on one chiller plant or air handling unit and track alarms resolved.

AI-Enabled Smart Building Technologies Questions FAQ

What are AI-enabled smart building technologies and why do they matter now?

AI-enabled smart building technologies combine IoT sensors, a BMS, analytics and digital twins so buildings adjust themselves. They matter now because energy costs, occupant health expectations and ageing plant all reward buildings that predict faults and match services to real use.

Which roles gain most from AI-enabled smart building technologies training?

Facility managers and building services engineers gain most, followed by estates, energy and workplace professionals. Teams that attend together can agree which sites and systems to upgrade first.

How does AI-enabled smart building technologies training differ from a BMS operator course?

It looks at the whole estate decision rather than one control panel. A BMS operator course teaches screens and setpoints; this smart building course connects sensors, AI models, security and investment cases into a phased plan.

What do you bring back from AI-enabled smart building technologies training?

You bring back a phased roadmap for one of your buildings. It scores current maturity, ranks use cases, outlines sensor and analytics architecture, and states payback and security checkpoints for owner approval.

AI-Enabled Smart Building Technologies: The Way Forward

The Smart Building Roadmap first informs which site and which system receive the opening round of sensors and analytics. Facility managers, estates boards and energy leads use it to sequence capital works and service contracts. After the first phase runs, the savings baseline and occupancy assumptions deserve another look, since measured data often changes which upgrades come next.