BLACKBIRD FOR TRAINING

Building Energy Auditor for Green Compliance Certification



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Introduction

Energy efficiency has become an essential component of modern building management, sustainability, and green compliance. Effective energy auditing enables organizations to understand building energy performance, identify inefficiencies, reduce operating costs, and support environmental and sustainability objectives.

The Building Energy Auditor for Green Compliance Certification course provides a practical understanding of building energy auditing and energy efficiency assessment. The course covers building energy analysis, HVAC systems, controls, metering, normalization, benchmarking, commissioning, and the practical use of energy audit instruments.

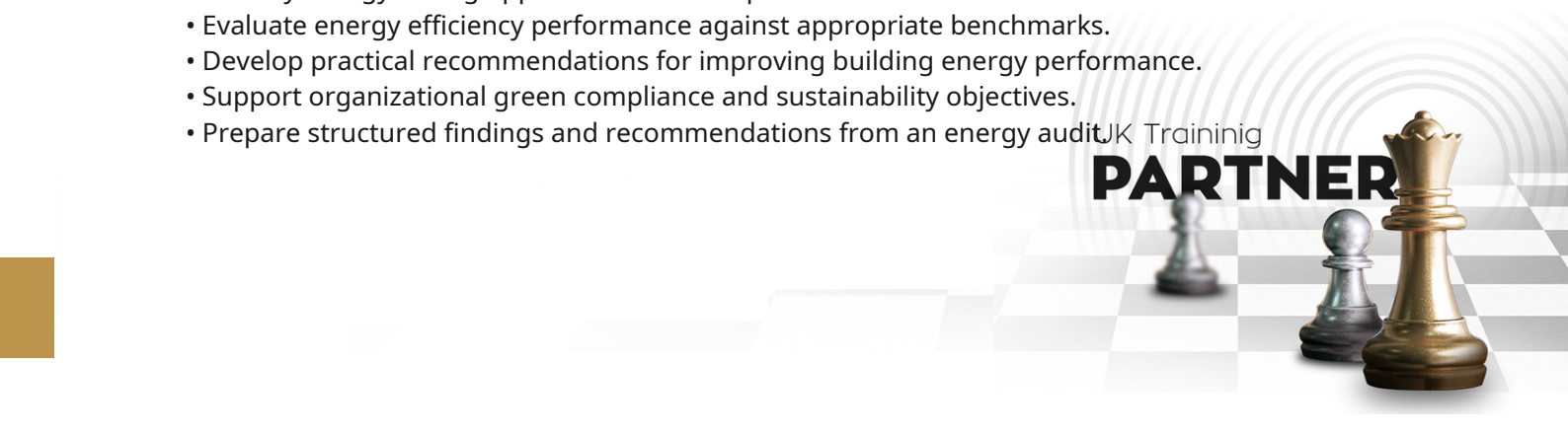
Participants will explore the key principles and techniques used to assess building energy performance, collect and analyze energy data, conduct field measurements, identify energy-saving opportunities, and develop practical recommendations for improving building efficiency and supporting green compliance.

The course uses practical frameworks, case studies, technical examples, demonstrations, and applied exercises to help participants develop the knowledge and skills required to perform effective building energy audits.

Course Objectives

By the end of this training course, participants will be able to:

- Understand the fundamentals of building energy efficiency and energy auditing.
- Apply systematic techniques for conducting building energy audits.
- Analyze building energy consumption and identify major energy-use patterns.
- Assess HVAC systems and their impact on building energy performance.
- Understand the role of building controls and automation in energy efficiency.
- Apply metering and energy data collection techniques.
- Understand energy normalization and benchmarking methods.
- Understand the principles of building commissioning and performance verification.
- Use common energy audit and measurement instruments effectively.
- Identify energy-saving opportunities and improvement measures.
- Evaluate energy efficiency performance against appropriate benchmarks.
- Develop practical recommendations for improving building energy performance.
- Support organizational green compliance and sustainability objectives.
- Prepare structured findings and recommendations from an energy audit.



Course Outlines

Day 1: Building Energy Auditing Fundamentals and Green Compliance

- Understanding building energy efficiency and sustainability.
- The role of energy auditing in green compliance.
- Fundamentals of building energy consumption.
- Major energy-consuming systems in buildings.
- Energy audit types, levels, and approaches.
- Energy audit process and key stages.
- Establishing the scope and objectives of an energy audit.
- Understanding building energy performance indicators.
- Identifying major energy-use areas and inefficiencies.
- Energy audit data requirements and information collection.
- Introduction to building energy analysis.
- Developing an effective energy audit plan.
- Case study: Building energy performance assessment.

Day 2: HVAC Systems, Controls and Building Energy Performance

- Fundamentals of HVAC systems and energy consumption.
- Major HVAC components and their energy requirements.
- Heating, ventilation, and air-conditioning efficiency.
- Chillers, boilers, pumps, fans, and cooling systems.
- HVAC operating conditions and performance assessment.
- Identifying HVAC-related energy losses.
- Building automation and control systems.
- Energy-efficient controls and operating strategies.
- Temperature, pressure, airflow, and system control.
- Scheduling, setpoints, and occupancy-based controls.
- Identifying HVAC and control optimization opportunities.
- Case study: HVAC energy efficiency assessment.



Day 3: Metering, Energy Data, Normalization and Benchmarking

- Principles of building energy metering.
- Energy consumption data collection.
- Electricity, fuel, thermal, and utility metering.
- Revenue meters and portable power loggers.
- Data quality, accuracy, and validation.
- Energy consumption profiles and load analysis.
- Energy normalization principles.
- Weather, occupancy, operating hours, and production normalization.
- Energy benchmarking and performance comparison.
- Energy Use Intensity EUI and performance indicators.
- Identifying abnormal energy consumption patterns.
- Developing meaningful energy performance baselines.
- Practical energy data analysis exercise.

Day 4: Energy Audit Instruments and Field Measurements

- Introduction to energy audit test instruments.
- Selecting the appropriate measurement instrument.
- Revenue meter and portable power logger.
- Clamp meter and power-quality analyzer.
- Lux meter and lighting measurements.
- Airflow hood and anemometer.
- Temperature probes and temperature measurement.
- Differential manometer and pressure measurements.
- Infrared camera and thermal performance assessment.
- Refrigerant detector and HVAC inspection.
- Field measurement procedures and good practices.
- Instrument accuracy, calibration, and measurement limitations.
- Interpreting field measurement results.
- Practical instrument demonstration and measurement exercise.



Day 5: Commissioning, Energy Efficiency Opportunities and Audit Reporting

- Fundamentals of building commissioning.
- Commissioning as a tool for energy performance improvement.
- Performance verification and system optimization.
- Identifying energy efficiency opportunities.
- Low-cost and no-cost energy-saving measures.
- HVAC, lighting, controls, and operational improvements.
- Evaluating potential energy and cost savings.
- Prioritizing energy efficiency measures.
- Developing practical energy-saving recommendations.
- Preparing an energy audit report.
- Presenting audit findings to management and stakeholders.
- Supporting green compliance through energy performance improvement.
- Developing an Energy Audit Improvement Action Plan.
- Final practical case study: Building Energy Audit.

Why Attend this Course: Wins & Losses!

- Develop practical knowledge of building energy auditing and energy efficiency assessment.
- Understand how energy performance supports green compliance and sustainability objectives.
- Improve the ability to identify energy inefficiencies across building systems.
- Strengthen knowledge of HVAC systems, controls, metering, and commissioning.
- Learn how to collect, validate, normalize, and benchmark building energy data.
- Develop practical skills in using key energy audit measurement instruments.
- Improve the accuracy and reliability of field energy assessments.
- Identify realistic energy-saving and operational improvement opportunities.
- Develop stronger recommendations for reducing energy consumption and operating costs.
- Improve the ability to evaluate building energy performance.
- Recognize common causes of poor energy performance and energy waste.
- Develop a structured approach to energy audit reporting and recommendations.
- Support organizational sustainability and green compliance initiatives.
- Create a practical roadmap for improving building energy efficiency.

Frequently Asked Questions

1. Who should attend this course?

This course is designed for energy auditors, energy managers, facility and building managers, mechanical and electrical engineers, HVAC professionals, maintenance and operations personnel, sustainability professionals, green building specialists, consultants, and professionals involved in building energy performance.



2. Is previous experience in energy auditing required?

Previous experience is beneficial but not mandatory. The course provides a structured introduction to building energy auditing and progressively develops participants' practical understanding of energy assessment techniques.

3. Will the course cover HVAC and building control systems?

Yes. The course covers HVAC systems, energy performance, controls, automation, operating conditions, optimization opportunities, and the role of these systems in overall building energy efficiency.

4. Will participants learn how to use energy audit instruments?

Yes. Participants will be introduced to the practical application of key instruments, including revenue meters, portable power loggers, clamp meters, power-quality analyzers, lux meters, airflow hoods, anemometers, temperature probes, differential manometers, infrared cameras, and refrigerant detectors.

5. Does the course cover energy benchmarking and normalization?

Yes. Participants will learn the principles of energy normalization, benchmarking, energy performance indicators, baseline development, and analysis of factors such as weather, occupancy, operating hours, and building use.

6. Can this course be customized for an organization?

Yes. The course can be customized to reflect the organization's building types, energy systems, operational requirements, sustainability objectives, and green compliance requirements. It can also be delivered as an in-house program.

Conclusion

Effective building energy management begins with accurate assessment, reliable data, appropriate measurement, and a structured approach to identifying energy efficiency opportunities.

The Building Energy Auditor for Green Compliance Certification course provides participants with a practical framework for assessing building energy performance, evaluating HVAC and control systems, collecting and analyzing energy data, conducting field measurements, and developing actionable energy efficiency recommendations.

By combining energy auditing principles with practical measurement techniques, benchmarking, normalization, commissioning, and energy performance analysis, the course enables participants to contribute more effectively to building efficiency, cost reduction, sustainability, and green compliance objectives.

