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**BUILDING ENERGY MODELING
STEP-BY-STEP PROCEDURES FOR LEED
CERTIFICATION**

ONLINE PROFESSIONAL COURSES LED BY
THE WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

LEED AP(BD+C), GSAS CGP, GCP, ISO 14001

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MODULE
L26

Summary and Resources

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Learning Objectives

- Introduction and Course Outline
- Energy Charrette or Workshop
- AutoCAD to BEM Software Importation
- ASHRAE Standards and Guidelines
- BEM software inputs for the project section, facade, systems, and zones
- Setup and Running the Building Energy Modeling Simulation
- Review BEM Software Output Reports.
- Sample Energy Modeling Report
- Summary and Resources
- **BEMP Practice Test V.4.1**



SUMMARY

- The training program covers building energy modeling steps, energy charrette, and BEM software importation.
- It covers ASHRAE standards, BEM inputs, simulation setup and running, and 100 practice exam questions.
- Energy simulation tools are used in early design decisions, component or material selection, and retrofitting decisions.
- Beyond Smart Cities specializes in energy modeling for various building types and climate zones.
- BEM software is lacking in helping architects make passive early design judgments.
- Learning objectives include an overview of building energy modeling steps, energy charrette or workshop, BEM software importation, ASHRAE standards and guidelines, BEM software inputs, setting up and running the BEM simulation, and reviewing BEM software output reports.

SUMMARY+

Energy Charrette or Workshop

- Collaborative meeting involving stakeholders for brainstorming, developing design strategies, and integrating energy-efficient systems.
- Key activities include setting goals, exploring options, and documenting decisions.

AutoCAD to BEM Software Importation

- Importing data from AutoCAD or other design software into BEM software.
- Exporting drawings and integrating building geometry and layout.
- Verifying accuracy of all elements in the model.



SUMMARY+

ASHRAE Standards and Guidelines

- Understanding relevant ASHRAE standards is critical for compliance and optimization in energy modeling.
- Key standards include ASHRAE 90.1-2022, 189.1-2020, 62.1-2022, and 55-2023.

BEM Software Inputs: Project Section, Facade, Systems, and Zones

- Inputs include site information, building orientation, climate data, building envelope specifications, HVAC systems, lighting, and thermal zones.

Setting Up and Running the BEM Simulation

- Defining simulation parameters, running the model, and refining designs.

Review of BEM Software Output Reports

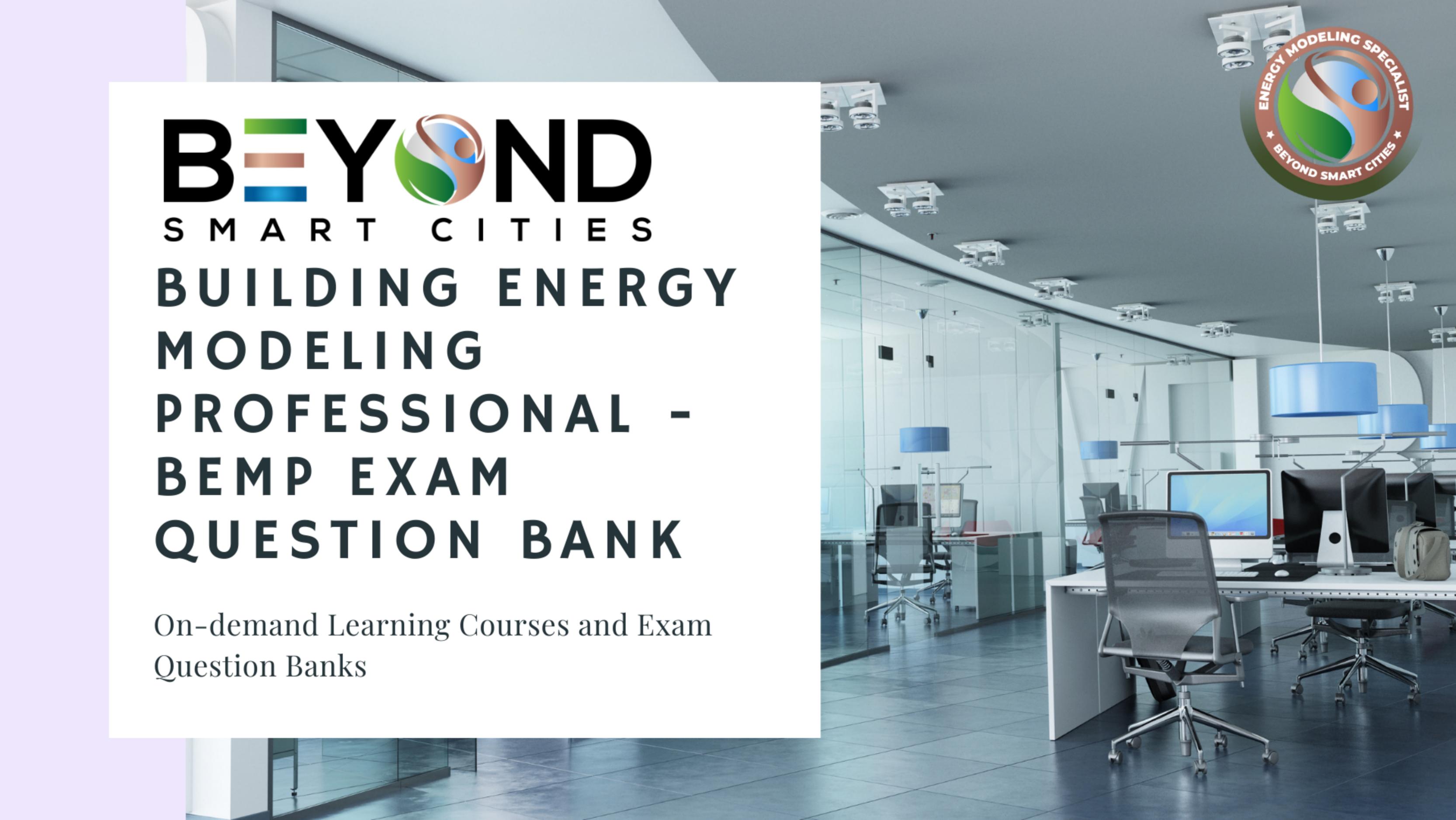
- Analyzing software output reports includes energy consumption, cost analysis, and LEED compliance.
- Correlating results with LEED prerequisites and credits is crucial.



RESOURCES

- Performance-Based Building Design book | Hugo S. L. Hens | 2024
- Applied Building Physics book | Hugo S. L. Hens | 2016
- Occupant-Centric Simulation-Aided Building Design book | William O'Brien, Farhang Tahmasebi, William O'Brien, Farhang Tahmasebi | 2023
- Energy Simulation in Building Design book | Joseph Clarke | 2007
- Building Performance Analysis book | Pieter de Wilde | 2018
- Fundamentals of Building Performance Simulation book | Ian Beausoleil-Morrison | 2020
- Building Performance Simulation for Design and Operation book | Jan L.M. Hensen, Roberto Lamberts | 2019
- Energy Modeling in Architectural Design, Timothy L. Hemsath and Kaveh Alagheh Bandhosseini
- <https://www.energy.gov/eere/buildings/building-energy-modeling>
- <https://www.ashrae.org/professional-development/ashrae-certification/certification-types/bemp-building-energy-modeling-professional-certification>





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**BUILDING ENERGY
MODELING
PROFESSIONAL -
BEMP EXAM
QUESTION BANK**

On-demand Learning Courses and Exam
Question Banks

Learning Objectives

- Learn Energy modeling abbreviations.
- Learn high-level energy simulation.
- Examine BUILDING ENERGY MODELING(BEM) in detail.
- Recognize strategies and make informed choices.
- Experience the ASHRAE BEMP exam.
- Know how to respond to circumstances.
- Consider the practice test part of your education.
- BEMP Exam: Flash Cards (One set of key terminology study flash cards. Over 108+ key terms!



Who can benefit?

- Building energy modeling and simulation professionals who want to earn Building Energy Modeling Professional (BEMP) credentials
- Building professionals who want to learn more about energy modeling terminologies and processes
- Individuals seeking a better understanding of HVAC, energy management, and building energy modeling
- For those who are starting their journey in the energy modeling profession.
- Architects, energy engineers, MEP professionals, energy engineers, and building designers



Benefits of our simulation exams

- Check your knowledge before the Building Energy Modeling Professional - BEMP Exam.
- 500+ questions in 5 simulated exams cover BEMP Exam Study Material.
- Learn the reasoning behind each question and answer and the related knowledge to review.
- The exam should be passed on the first try.
- Study Flashcards for the ASHRAE BEMP Exam





WELCOME TO BEYOND SMART CITIES

Beyond Smart Cities is the world's 1st Green Technology Marketplace, connecting millions of Sustainability Specialists, Green Building Specialists, Energy Specialists, Commissioning Specialists, Environment Specialists, Health & Safety Specialists, Fire Safety Specialists, Climate Change Specialists & Green Products/Technology Manufacturers with independent talent around the globe.

Our mission is to build and support a global community of experts with the highest professional standards in sustainability, green building, energy, commissioning, environment, health & safety, fire safety, climate change, GHG accounting, carbon auditing, and GHG emissions management.



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