

BEYOND

SMART CITIES

ENERGY SIMULATION OF HIGH PERFORMANCE GREEN BUILDINGS

FOR ENERGY AND GREEN BUILDING SPECIALISTS

KRISHNAJI PAWAR, LEED AP BD+C, GSAS CGP, ISO 14001:2015, GCP

ENERGY SPECIALIST CURRICULUM

ENERGY MODELING SPECIALIST

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SUMMARY AND RESOURCES

FOR ENERGY AND GREEN BUILDING PROFESSIONALS

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SUMMARY

Green Building Rating System

Understand Green Building Basics

Leadership in Energy and Environmental Design LEED

Learn Building Energy Codes and Standards

Energy Issues and Policy

Passive Architecture and SUN Shading Analysis

Lighting simulation and whole Building Energy Simulation

The Process of Carrying out Energy Simulation

BAS System Specification and Energy Efficiency Measure and Retrofits

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HOW BUILDING SIMULATION USED

BEM applications leverage its ability to answer questions that cannot be easily answered by other means. Major use cases include the following:

✓Architectural Design: Architects use BEM to design energy-efficient buildings, specifically to inform quantitative trade-offs between up-front construction costs and operational energy costs. In many cases, BEM can reduce both energy costs and up-front construction costs.

✓HVAC Design and Operation: Commercial building HVAC systems can be large and complex. BEM helps mechanical engineers design HVAC systems that meet building thermal loads efficiently. It also helps design and test control strategies for these systems.

HOW BUILDING SIMULATION USED +

✓Building Performance Rating: BEM can be used to assess the inherent performance of a building while controlling for specific use and operation. Inherent performance rating is the basis for processes like code compliance, green certification, and financial incentives.

✓Building Stock Analysis: BEM analysis on prototype models supports the development of energy codes and standards and helps organizations like utilities and local governments plan large scale energy-efficiency programs.

KEY TAKEAWAYS

Understand Green Building Basics

Learn Building Energy Codes and Standards

Energy Issues and Policy

Lighting simulation and whole Building Energy Simulation

The Process of Carrying out Energy Simulation

BAS System Specification and Energy Efficiency Measure and Retrofits

Work through practical examples to demonstrate the topics and procedures covered.

Energy Modeling for High Performance Green buildings

✓ <https://knowledgelab.beyondsmartcities.in/index.php/category/guides/energy-specialist-guides/>

