



welcome to

BEYOND SMART CITIES

BEYOND
SMART CITIES



INTERPRETATIONS OF ENERGY

MODEL RESULTS

ONLINE PROFESSIONAL COURSES LED BY
THE WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

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

LEARN.BEYONDSMARTCITIES.IN

BEYOND
SMART CITIES

MODULE
L12

Identify Critical Synergistic
Interactions Among
Building Components.

KRISHNAJI PAWAR - CEO & FOUNDER

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

WWW.BEYONDSMARTCITIES.IN



INTERPRETATIONS OF ENERGY MODEL RESULTS

Building Energy Modeling (BEM) is a crucial process for predicting building energy performance, aiding in informed decision-making in design, construction, and operation. It uses sensitivity analysis to evaluate how input parameters impact output variables like energy consumption, indoor comfort, and environmental impact. It's essential to identify synergistic interactions among building components to optimize performance or avoid unexpected inefficiencies.

Learning Objectives

- Introduction and Course Outline
- Verification and Fixing of Simulation Results
- Analyzing and Comparing Modeling Results
- Economic Analysis
- **Identify Critical Synergistic Interactions Among Building Components.**
- Exceptional calculation methods
- Building Energy Modeling Project Deliverables
- Interpreting Model Results
- Sample Energy Modeling Report
- Summary and Resources
- BEMP Practice Test V.5.1



INTRODUCTION

- BEM is crucial for predicting energy performance in buildings.
- Sensitivity analysis evaluates how variations in input parameters affect output variables.
- It's essential to identify synergistic interactions among building components.
- Local and global sensitivity analyses highlight the influence of input variations.
- Synergistic interactions occur when the combined effect of two or more building components exceeds the sum of their individual effects.
- Examples include insulation and window properties, HVAC system and building envelope, and insulation and building envelope design.
- Understanding these interactions can lead to cost-effectiveness, enhanced performance metrics, and a holistic design approach.

IDENTIFYING CRITICAL SYNERGISTIC INTERACTIONS AMONG BUILDING COMPONENTS IN SENSITIVITY ANALYSIS IN BEM

- Building Energy Modeling (BEM) is a crucial process for predicting building energy performance.
- Sensitivity analysis is a key methodology within BEM, evaluating how variations in input parameters affect output variables.
- Identifying synergistic interactions among building components can lead to enhanced performance or unexpected inefficiencies.



SENSITIVITY ANALYSIS IN BEMS

- In BEM, sensitivity analysis involves systematically varying input parameters to observe changes in output values.
- Inputs may include thermal properties of materials, mechanical system efficiencies, occupancy patterns, and climatic conditions.
- Output typically focuses on metrics such as annual energy use, peak heating and cooling loads, or indoor air quality indices.



SYNERGISTIC INTERACTIONS AMONG BUILDING COMPONENTS

- Synergistic interactions occur when the combined effect of two or more building components exceeds the sum of their individual effects.
- Examples include insulation and window properties, HVAC system and building envelope, and the relationship between HVAC system's efficiency and the building envelope's design.



PRACTICAL IMPLICATIONS OF IDENTIFYING SYNERGISTIC INTERACTIONS

- Cost-Effectiveness: Optimizing multiple components in tandem can achieve greater energy performance without proportionally increasing costs.
- Enhanced Performance Metrics: Identification of critical interactions can lead to significant improvements in performance metrics such as energy use intensity, indoor thermal comfort, and occupant satisfaction.
- Holistic Design Approach: Acknowledging the interactions among various building systems fosters a more integrated design philosophy.



B E Y O N D
S M A R T C I T I E S

CONTACT US



+91 6363032722



info@beyondsmartcities.in



learn.beyondsmartcities.in



#55,HMR Layout ,Bengaluru ,India



THANK YOU

