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SMART CITIES

ENERGY SIMULATION SPECIALIST
BEYOND SMART CITIES

welcome to
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BUILDING ENERGY SIMULATION ANALYST - BESA OVERVIEW

Building Energy Modelling (BEM) is a useful tool for new and existing structures.Energy modeling may inform design decisions, show code compliance, attain green building certification, and lead policy and code development as the globe explores new carbon-reduction strategies.

Learning Objectives

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INTRODUCTION

- Provides a holistic view of building systems' impact.
- Predicts energy performance, reducing post-construction design changes.
- Provides quantifiable results for cost-saving strategies.
- Predicts occupant comfort based on meteorological data.
- BEM has many benefits, from reducing costs to providing critical data.
- However, the software has some challenges.
- Also, there are limited software programs available that support the translation process.
- For example, Green Building XML (gbXML) is one popular format that facilitates building information modeling (BIM) to BEM exchanges.
- The last challenge of BEM is the technical expertise required.

BENEFITS OF BUILDING ENERGY MODELING

- Extensive energy modeling requires the use of numerous assumptions and default data, as information regarding individual structures in cities is generally scarce and not publicly accessible.

- For specific structures, there are well-established manual and automated model calibration procedures.

- While it is possible to utilize the automated calibration methods to calibrate the BEM directly, doing so will necessitate a greater number of simulations in proportion to the number of structures.

- The results of numerous simulations performed to calibrate certain buildings in the BEM could potentially be utilized to accelerate the calibration process for other buildings.

WHAT ARE THE BENEFITS OF BEM?

1. Facilitates a comprehensive and integrated approach
2. Predicts energy performance
3. Offers measurable outcomes.
4. Decreases expenses
5. Enhances the level of comfort for homeowners.

WHAT ARE THE BENEFITS OF BEM? +

- Allows for a Holistic Approach: Energy modeling combines all factors to determine the best elements for a building.
- Helps Predict Energy Performance: Estimating energy consumption in new construction allows for fewer design changes.
- Provides Quantifiable Results: BEM data aids in making informed decisions, focusing on cost-saving design strategies.
- Reduces Costs: Proper planning can lead to cost-effective strategies, preventing mid-construction system replacements.
- Provides Homeowners with More Comfort: Energy models predict occupant comfort based on meteorological data, reducing utility bills.

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CONTACT US

ENERGY SIMULATION SPECIALIST
BEYOND SMART CITIES

+91 6363032722

info@beyondsmartcities.in

learn.beyondsmartcities.in

#55,HMR Layout ,Bengaluru ,India