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ENERGY MODELING SPECIALIST
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BASICS OF BUILDING ENERGY MODELING - BEM

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 5

LEED and Building Energy Modeling

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BASICS OF BUILDING ENERGY MODELING - BEM

Energy modeling is an effective computer-based tool that is used to review various design strategies for a building. The model provides a prediction of possible energy savings of a proposed building against that of a baseline building.

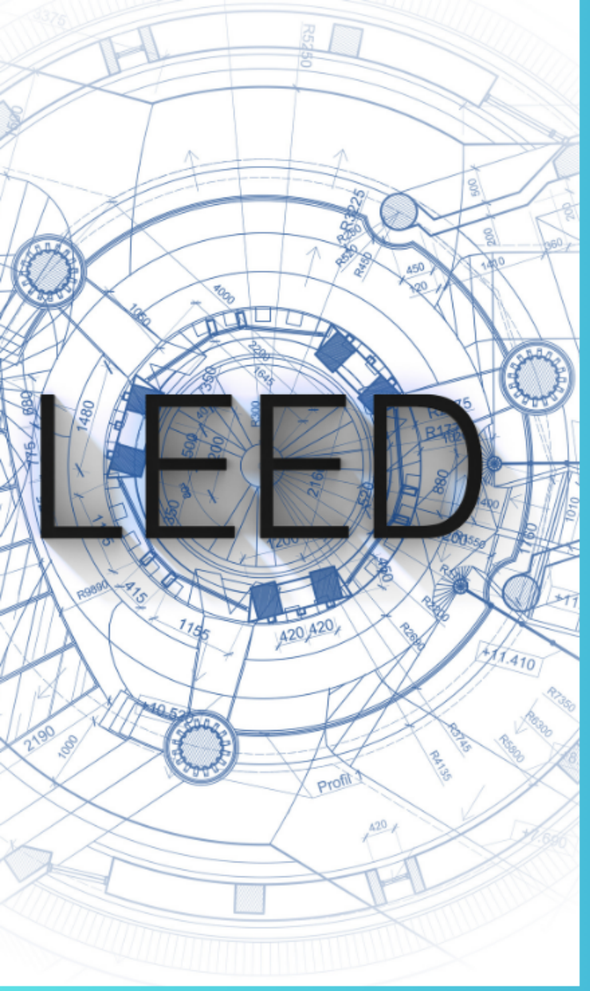
Learning Objectives

- Introduction
- What is Building Energy Modeling (BEM)?
- Building Energy Codes and Standards
- Building Energy Modeling Tools
- LEED and Building Energy Modeling
- Building Energy Modeling and Commissioning
- Benefits of Building Energy Modeling
- Professional energy modeling specialist certification
- Summary and Resources
- Basics of BEM Quiz_Test Your Knowledge!

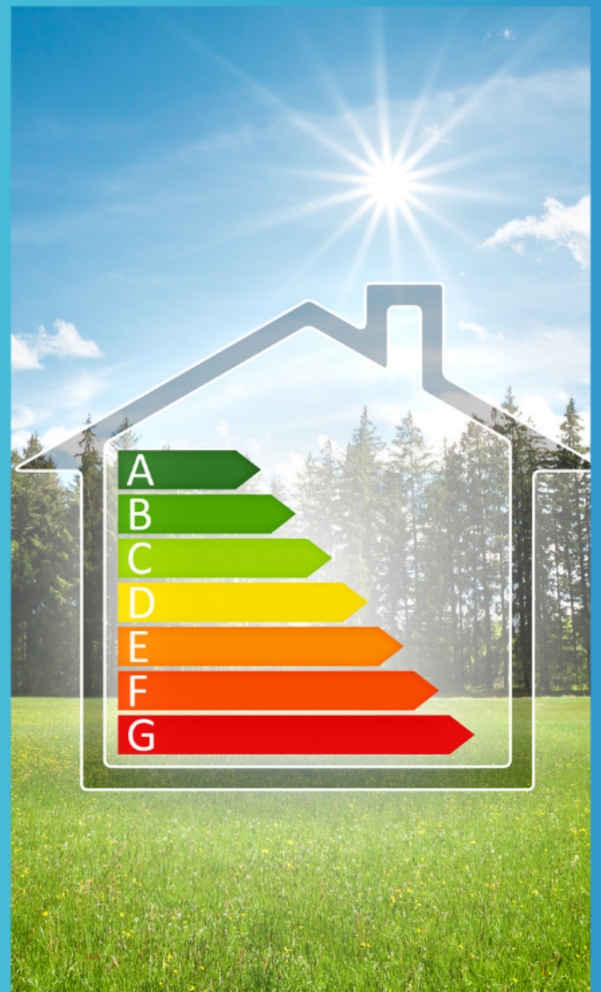
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INTRODUCTION

- LEED: Green Building Rating System
- Why should a LEED AP know energy modeling?
- Learning energy modeling benefits LEED APs. Why?
- What does LEED energy modeling cost?
- Economic Benefits of LEED



WHY GREEN BUILDING RATING SYSTEM



A Quantitative System to evaluate and measure the environmental impact of a building on the environment.

The U.S. Green Building Council (USGBC) developed LEED, which stands for ‘Leadership in Energy and Environmental Design’, to rate buildings' environmental performance and sustainability. Healthy, efficient, carbon-free, and cost-effective green buildings are supported by LEED. The US green building industry standard is used in over 160 nations.

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WHY SHOULD A LEED AP KNOW ENERGY MODELING?



There are 110 possible credits for a LEED building, including all bonus points. Energy and Atmosphere Credit 1 is the single largest credit, with up to 19 points.

- Energy modeling is at the heart of sustainable building design, and its significance is paramount in the latest version of LEED.

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WHY SHOULD A LEED AP KNOW ENERGY MODELING?+

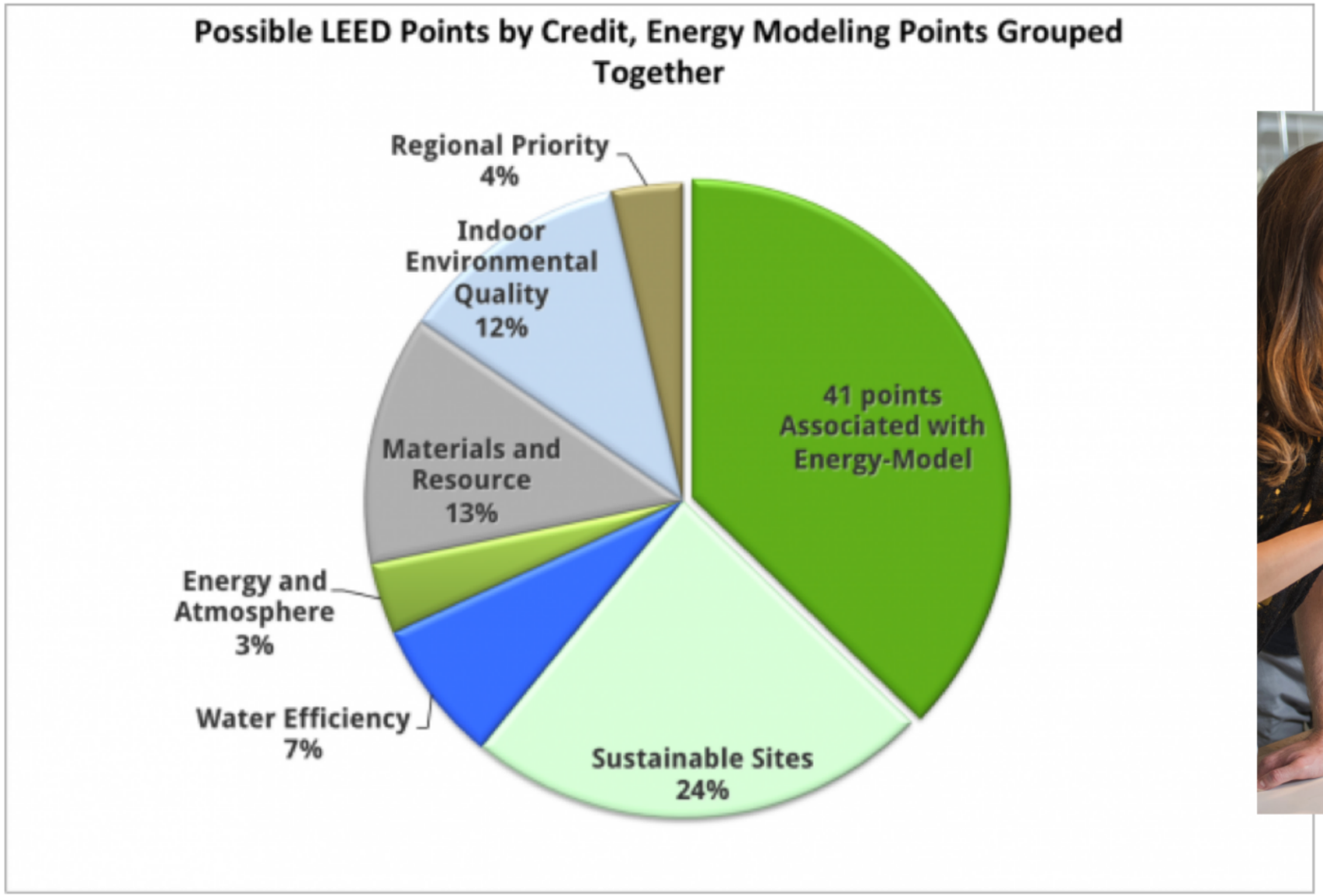


Some of the other points an energy model can earn you include(hover to display details):

- IDc1-2 Innovation and Design and LEED AP
- WEc2 Innovative wastewater technologies (2 points)
- EAc5 Measurement and Verification (3 points)
- EAc6 Green Power (2 points)
- EAc2 On site Renewable Energy (7 points)
- IEQc2 Increased Ventilation (1 point)
- IEQc8.1 Daylight and Views (1 point)

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WHY WILL IT BENEFIT A LEED AP TO LEARN ENERGY-MODELING?

- A mere fraction of the millions of LEED APs possess the knowledge and skills necessary to generate an energy model using a legitimate software application, such as TRACE 700, eQUEST OR Energy Plus, or Visual DOE 4.1.
- An even more minority possess a high level of proficiency.
- Why does this occur? Indeed, obtaining LEED training has been a relatively straightforward process thus far, while acquiring building simulation training has proven to be more challenging.





WHAT IS THE COST OF ENERGY-MODELING FOR LEED?

- Energy modeling costs $.05/SF for larger/less complicated buildings and $.45/SF for smaller/more complicated ones.
- Energy modeling costs depend on project size, analysis degree, building design complexity, and mechanical system complexity.
- The cost of energy modeling is disputed. Few people can generate correct models in a reasonable time, making it pricey.

GREEN BUILDING RATING SYSTEMS - BENEFITS

- Reduce energy consumption
- Reduce water consumption
- Reduce materials waste
- Reduce heat island effect
- Improve indoor air quality
- Reduce absenteeism
- Reduce Toxins in environment
- Improve productivity
- Preserve open space
- Preserve species habitat
- Improve asset value
- Increase infrastructure vitality



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