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

ONLINE PROFESSIONAL COURSES LED BY
THE WORLD'S TOP SPECIALISTS

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MODULE
L2

Energy Charrette or Workshop

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

The Energy Charrette process involves data collection, model development, simulation, and performance comparison. Practitioners often use checklists to guide the energy modeling process, including pre-charrette preparations, building design considerations, operational considerations, and post-charrette actions. Examples include a hypothetical commercial office building project aiming for LEED Silver certification.

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



INTRODUCTION

- Aims to optimize energy performance in building designs.
- Fosters collaboration among stakeholders like architects, engineers, contractors, and owners.
- Crucial for achieving energy efficiency and sustainability goals set by LEED certification.
- Process includes data collection, model development, simulation, and performance comparison.
- Uses checklists for energy modeling, pre-charrette preparations, building design, operational considerations, and post-charrette actions.
- Helps identify and implement innovative energy-saving strategies.
- Importance of energy charrettes in sustainable design due to growing demand for energy-efficient buildings.

ENERGY CHARRETTE IN LEED ENERGY MODELING

- Energy Charrette is a collaborative workshop focusing on energy efficiency and sustainability in building design.
- It is integral to the LEED certification process, promoting environmentally responsible and resource-efficient building practices.



OBJECTIVES OF AN ENERGY CHARRETTE



- Facilitates collaboration: Encourages dialogue between architects, engineers, environmental consultants, and other stakeholders.
- Establishes a shared vision: Sets goals that align with LEED criteria.
- Identifies Energy Efficiency Opportunities: Provides a forum for discussing potential energy-saving measures.
- Develops an Energy Model Framework: Outlines parameters and assumptions for the energy model.
- Exploring Innovative Solutions: Encourages creativity and exploration of innovative technologies and strategies.

STRUCTURE OF AN ENERGY CHARRETTE

- Pre-Charrette Preparation: Gathers relevant data and briefs participants on LEED standards and energy modeling tools.
- Kick-off and Context Setting: Introduces the project and its goals.
- Brainstorming Session: Participants identify energy-efficient strategies and technologies.
- Prioritization of Strategies: Uses criteria like feasibility, cost-effectiveness, and impact on energy consumption.
- Development of Energy Modeling Framework: Outlines assumptions, inputs, and outputs needed for the energy model.
- Action Plan: Creates an action plan for further developing selected energy strategies and conducting detailed energy modeling.



CASE STUDY EXAMPLE: COMMERCIAL OFFICE BUILDING



- The team identifies passive design strategies and explores active systems.
- By the end of the charrette, a framework for the energy model is established, specifying parameters like occupancy density and equipment loads.

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