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

ONLINE PROFESSIONAL COURSES LED BY
THE WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

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MODULE
L6

Standards for AutoCAD and BEM Software Nomenclature

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

In AutoCAD, layer naming conventions are essential for organizing drawing elements, while ISO 129 standards outline how dimensions should be presented in technical drawings. Text style and annotation standards are vital for legibility and consistency, with specific fonts, sizes, and formatting for annotations.

Learning Objectives

- Introduction and Course Outline
- Building Energy Modeling Checklists
- **Importing into BEM Software**
- 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

- Importance of adherence to established nomenclature and standards for effective communication, interoperability, and collaboration.
- Standards facilitate uniformity in design representation, ensuring comprehensible drawings, models, and documentation across platforms and stakeholders.
- Layer naming conventions in AutoCAD and ISO 129 standards for organizing drawing elements.
- Text style and annotation standards for legibility and consistency.
- Component naming conventions in BEM software for clarity in model representation.
- Consistent use of energy use and performance metrics in energy modeling.
- Reporting standards in BEM for clear and structured presentation of energy modeling results.
- Adherence to standards enhances communication, collaboration, and efficiency.

AUTOCAD AND BUILDING ENERGY MODELING SOFTWARE NOMENCLATURE: IMPORTANCE AND STANDARDS

- Standards in AutoCAD and BEM software are crucial for effective communication, interoperability, and collaboration.
- Adherence to these standards ensures uniformity in design elements, reducing potential for misinterpretation and errors.
- AutoCAD uses standards like the American National Standards Institute (ANSI) and the International Organization for Standardization (ISO) for drafting and designing.



AUTOCAD NOMENCLATURE STANDARDS

- Layer Naming Conventions: Hierarchical naming structure with prefixes indicating the discipline and a descriptive identifier.
- Dimensioning Standards: ISO 129 standard outlines how dimensions should be presented in technical drawings.
- Text Style and Annotation Standards: Specific fonts, sizes, and formatting for annotations are recommended.



BEM SOFTWARE NOMENCLATURE STANDARDS

- **Component Naming Conventions:**
Systematic approach to naming building components, focusing on their function and characteristics.
- **Energy Use and Performance Metrics:**
Consistent use of specific metrics for modeling energy performance.
- **Reporting Standards:** ASHRAE 205 standard specifies the format for reporting energy simulation results.



AutoCAD and Visual DOE Style Nomenclature Standards

AutoCAD files

Trace file: *originalfilename_v1.dwg*
Polygon file: *originalfilename_v2.dxf*

Save under: *Qxxx\ENERGY MODELING\AUTOCAD*

AutoCAD layer names

Trace layer: *trace*
Use color: *210*

Polygon layer: *bpoly00, bpoly01, bpoly02... etc.*
Respective color sequence: *11, 21, 31...etc.*

Visual DOE files

Simulation file: *Qxxx_YMMMDD.gph, e.g. Q0009_080203.gph*

Save under: *Qxxx\ENERGY MODELING\SIMULATION*

Visual DOE Reports

Report types: *(SS-F) Zone Demand Summary, (LS-A) space Peak Loads summary, (LV-A) General Project and building Input, (LS-D) Building Monthly loads Summary*

Report file: *Qxxx_YMMMDD_basecase + name_reporttype.pdf*
e.g. Q0009_080203_basecase+reheat_architecturaldetails.pdf

Save under: *Qxxx\ENERGY MODELING\REPORTS*



CONCLUSION

- Adherence to standards in AutoCAD and BEM software enhances communication, collaboration, and efficiency.
- By employing systematic naming conventions, consistent dimensioning and annotation practices, and standardized reporting metrics, professionals can ensure clarity and precision in their designs and analyses.





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