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

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ONLINE TRAINING BY KRISHNAJI PAWAR

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MODULE  
**L7**

# Scaling an imported drawing from AutoCAD

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

Scaling is a crucial aspect of computer-aided design (CAD) that involves adjusting the size of objects in a drawing to ensure accurate rendering in the real world. It is similar to resizing an image in graphic design software, but CAD objects can be resized relative to a specific scale factor. A scale factor is a multiplicative factor that determines how much larger or smaller the object will be after scaling.

# Learning Objectives

- Introduction and Course Outline
- Building Energy Modeling Checklists
- **Scaling an imported drawing from AutoCAD**
- 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

- Scaling is a crucial operation in CAD, resizing an object while maintaining its proportions.
- In AutoCAD, scale is expressed mathematically as  $\text{Scaled Dimension} = \text{Original Dimension} \div \text{Scaling Factor}$ .
- Steps to scale an imported drawing include opening AutoCAD, importing the drawing, setting units in AutoCAD, confirming the operation, and visual inspecting the scaled drawing.
- An example of scaling a site plan from AutoCAD is provided, where the original drawing is represented in inches.
- Best practices for scaling include maintaining aspect ratios, using reference objects or dimensions, checking for annotations, organizing objects into layers, and saving versions before and after scaling.

# SCALING AN IMPORTED DRAWING FROM AUTOCAD

- Scaling adjusts the size of objects in a drawing for accurate rendering.
- Similar to resizing an image in graphic design software, CAD objects can be resized relative to a specific scale factor.
- Scaling is essential in industries like architecture and manufacturing before importing into other software or templates.
- To scale a drawing in AutoCAD, open the drawing in millimeters, select the Bpoly Layer, scale the Bpoly Layer, copy and paste the scaled Bpoly Layer to an imperial template, and save as R12 DXF.
- Accurate scaling is vital in engineering and architectural applications to prevent measurements discrepancies, structural failures, or operational inefficiencies.



# IMPORTING DRAWINGS INTO AUTOCAD



- The process involves opening AutoCAD, importing the drawing, and setting the units.
- The "Scale" command can be used to scale an imported drawing.

## Steps for Scaling an Imported Drawing

- Select the object or group of objects to scale.
- Initiate the Scale Command.
- Specify the Base Point.
- Enter the Scaling Factor.
- Confirm the Operation.

# CONCLUSION

- Scaling an imported drawing from AutoCAD enhances the accuracy and applicability of design projects.
- Mastery of this skill promotes efficiency and contributes to the overall quality of the design process.



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# THANK YOU

