

how to read an
energy model



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learning objectives

Review the core components of an energy modeling report, including key definitions, inputs, assumptions and results

Identify which design team conversations and analysis strategies are key to avoiding common modeling errors and analysis pitfalls

Compare & contrast the three most common types of modeling [design performance, building energy, & building operational]

Discuss how performance simulations can effectively inform design decisions throughout each phase of the design process

what is a model?

In its simplest form, an energy model is a **calculation engine** that accepts **inputs** such as building geometry, system characteristics, and operating schedules and produces **outputs** such as performance comparisons and compliance reports - [AIA](#)

inputs

project specifications:

location, form, size, orientation, materials, lighting, power,
service hot water, conveyance, renewable energy and HVAC systems

operational assumptions:

weather, program, occupancy and usage patterns

outputs

energy: demand, consumption, cost, by end use, by fuel type, savings

performance: carbon, water, thermal comfort, luminance/illuminance/glare

compliance reporting

purpose: demonstrate required level of **energy** performance

intent: compliance - not decision making

Performance Rating Method Compliance Report	
General Information	
Project Name:	Midrastleton Office Building
Project Address:	2850 W. Washington Ave.
City:	Las Vegas, NV
Designer of Record:	Maddlestobum Architects
Contact Person:	Fenray Constrablik
Simulation Program:	eQUEST v.3.5.5
Climate Zone:	3B
Quantity of Floors:	Three
Weather Data:	Las Vegas, NV [LAS-ENVV.bin]
Utility Rate [Electricity]:	Nevada Power Large General Service [average \$0.0935/kWh]
Utility Rate [Natural Gas]:	Southwest Gas Medium General Service [average \$1.040/therm]
Utility Rate [Steam/Hot Water]:	
Utility Rate [Chilled Water]:	
Utility Rate [Other]:	

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Utility Rate [Other]:	

Performance Rating Method Compliance Report

General Information

Project Name:	Midrastleton Office Building	Date:	October 5, 2006
Project Address:	2850 W. Washington Ave.		
City:	Las Vegas, NV		
Designer of Record:	Maddlestobum Architects	Telephone:	702-020-0400
Contact Person:	Fenray Constrablik	Telephone:	701-014-9284
Simulation Program:	eQUEST v.3.5.5	Principal Heating Source:	<input type="checkbox"/> Fossil Fuel
Climate Zone:	3B		<input type="checkbox"/> Electricity
Quantity of Floors:	Three		<input type="checkbox"/> Solar/Site Recovered
Weather Data:	Las Vegas, NV [LAS-ENVV.bin]		<input type="checkbox"/> Other
Utility Rate [Electricity]	Nevada Power Large General Service [average \$0.0935/kWh]		
Utility Rate [Natural Gas]	Southwest Gas Medium General Service [average \$1.040/therm]		
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Utility Rate [Chilled Water]			
Utility Rate [Other]			

