Demand-Limiting Assessment Tool for Small Commercial Buildings

May 5, 2008

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Outline

- Tool Objectives
- Recent Updates
- Demonstration
- Future Work

Tool Objectives

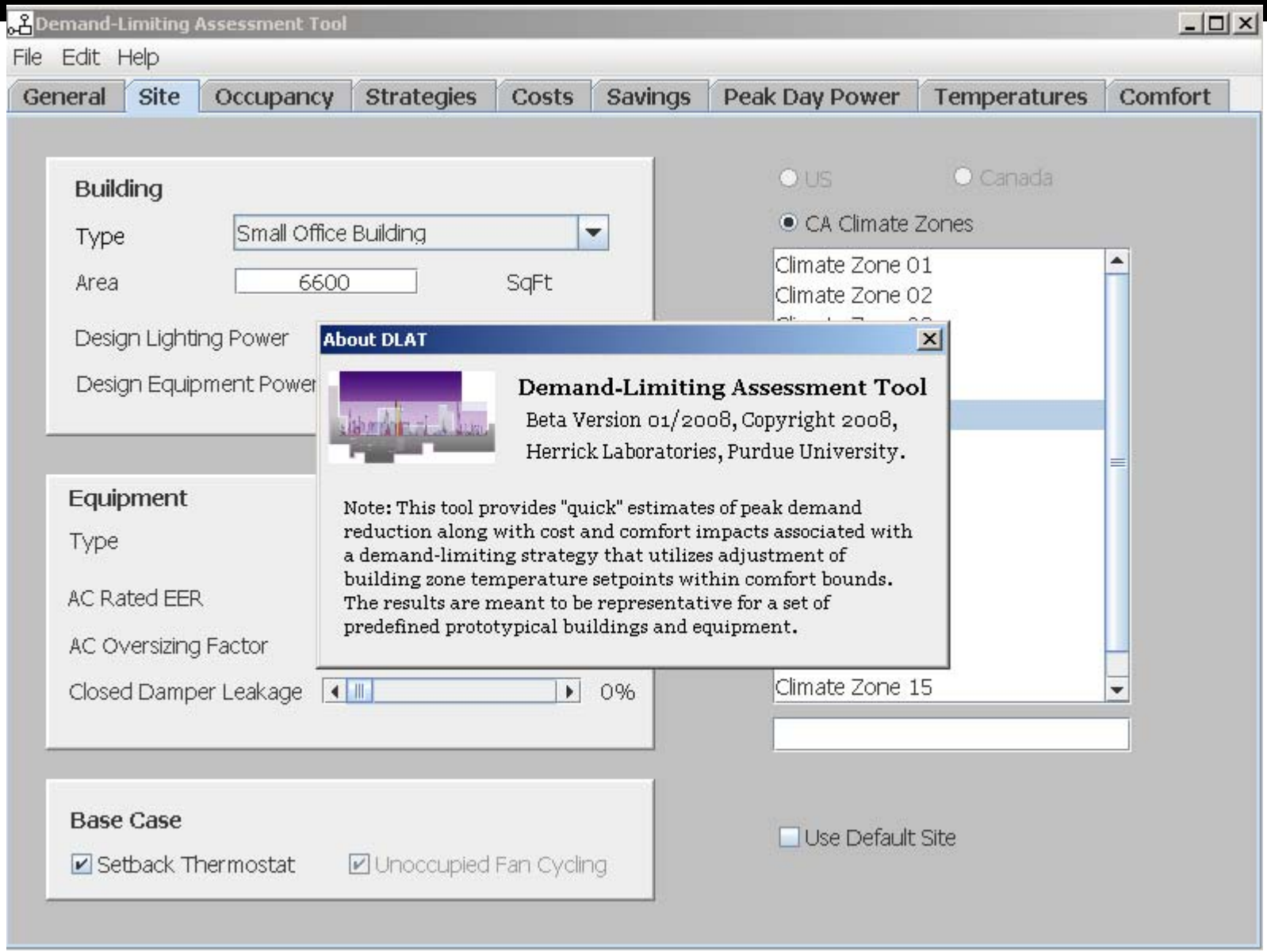
- Quick assessment tool for potential end users to evaluate
  - demand reduction
  - operating cost savings
  - occupant thermal comfort impacts
- Only allow users to change most important factors
  - Type and size of building
  - Location
  - Utility rates
  - Occupancy schedule
  - Demand-limiting parameters
  - Equipment efficiency
- Potentially useful as a tool for utilities to promote this technology

Recent Updates

- Added additional user changeable parameters
  - Design lighting and equipment power
  - AC rated EER and oversizing
- Added demand-limiting strategies
  - Limit peak AC demand to % of normal peak day value
  - Lighting control
  - Shading control
  - Alternative setpoint adjustment strategies, including minimum demand strategy
- Added library of electric utility rates for California utilities
- Added both AC and total building power and costs
- Updated help feature

Small Building Assessment Tool

Demo

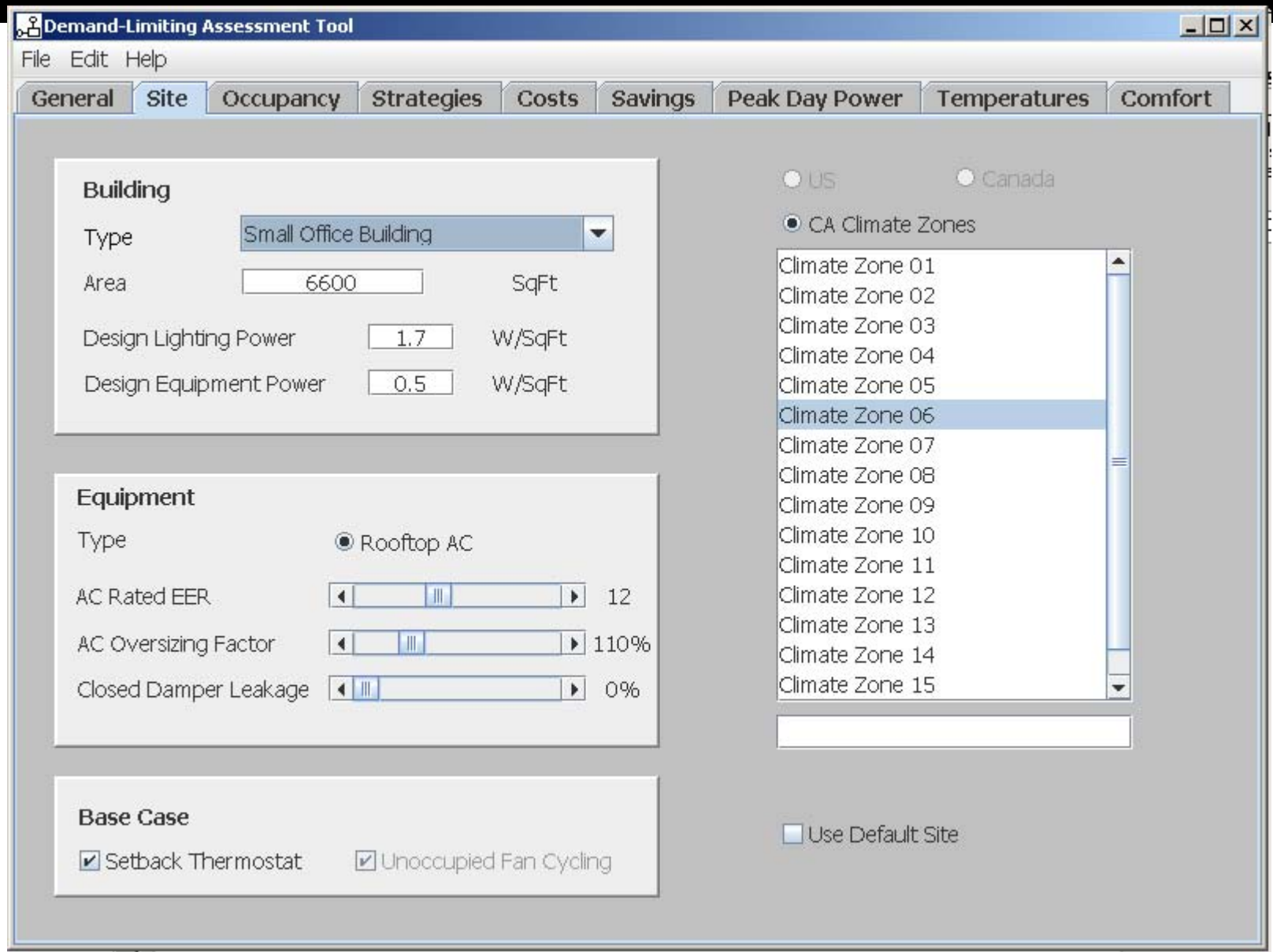


Future Work

- Add average kW reduction as an output
- Hold a user workshop
- Modify program structure to allow libraries of building materials, constructions, and buildings
  - enable easier implementation of new building types
- Develop building libraries
- Develop user and reference manuals
- Add variable-air-volume (VAV) capabilities
- Improve in response to user feedback

Small Building Assessment Tool

Demo



Small Building Assessment Tool

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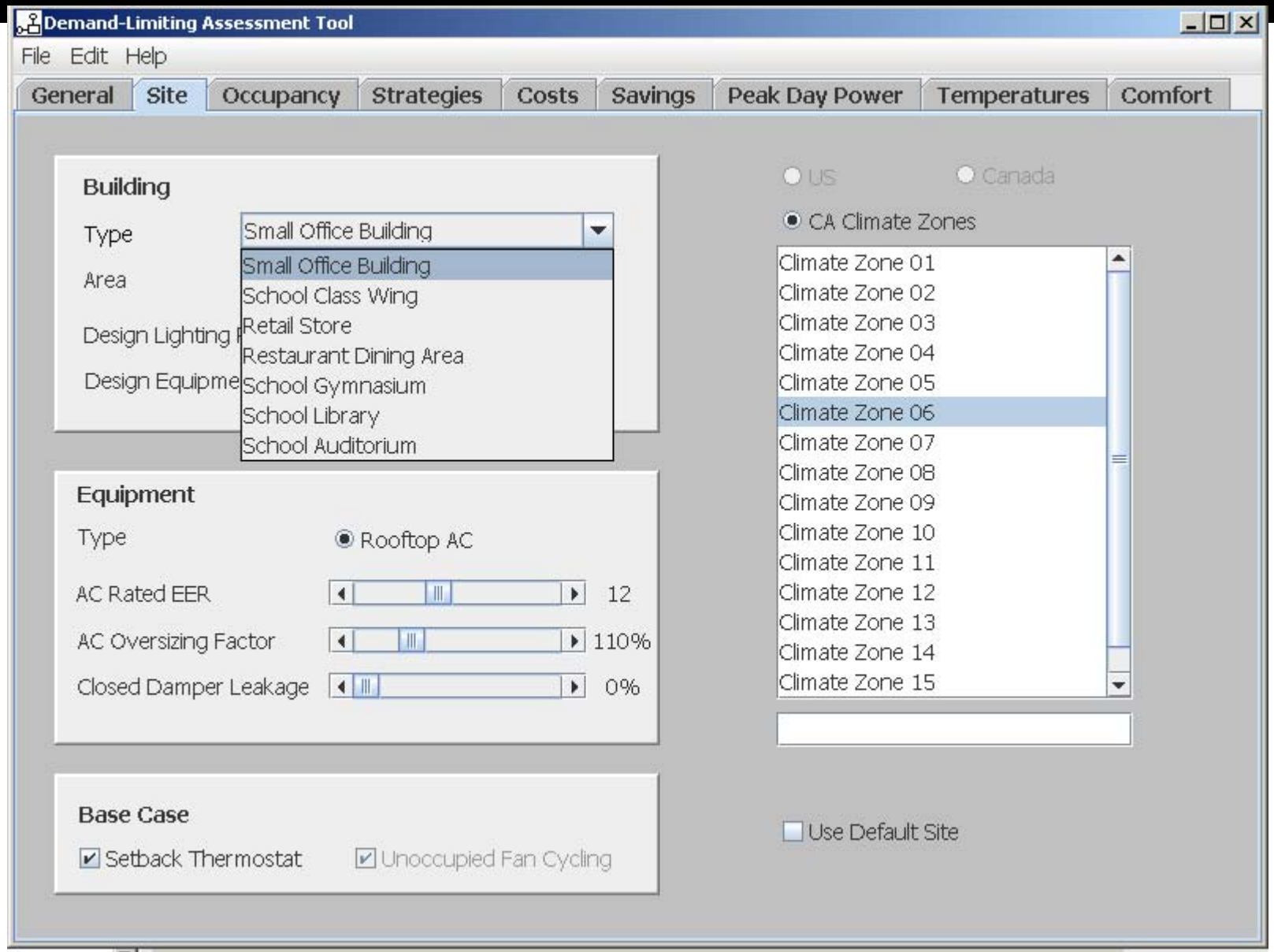

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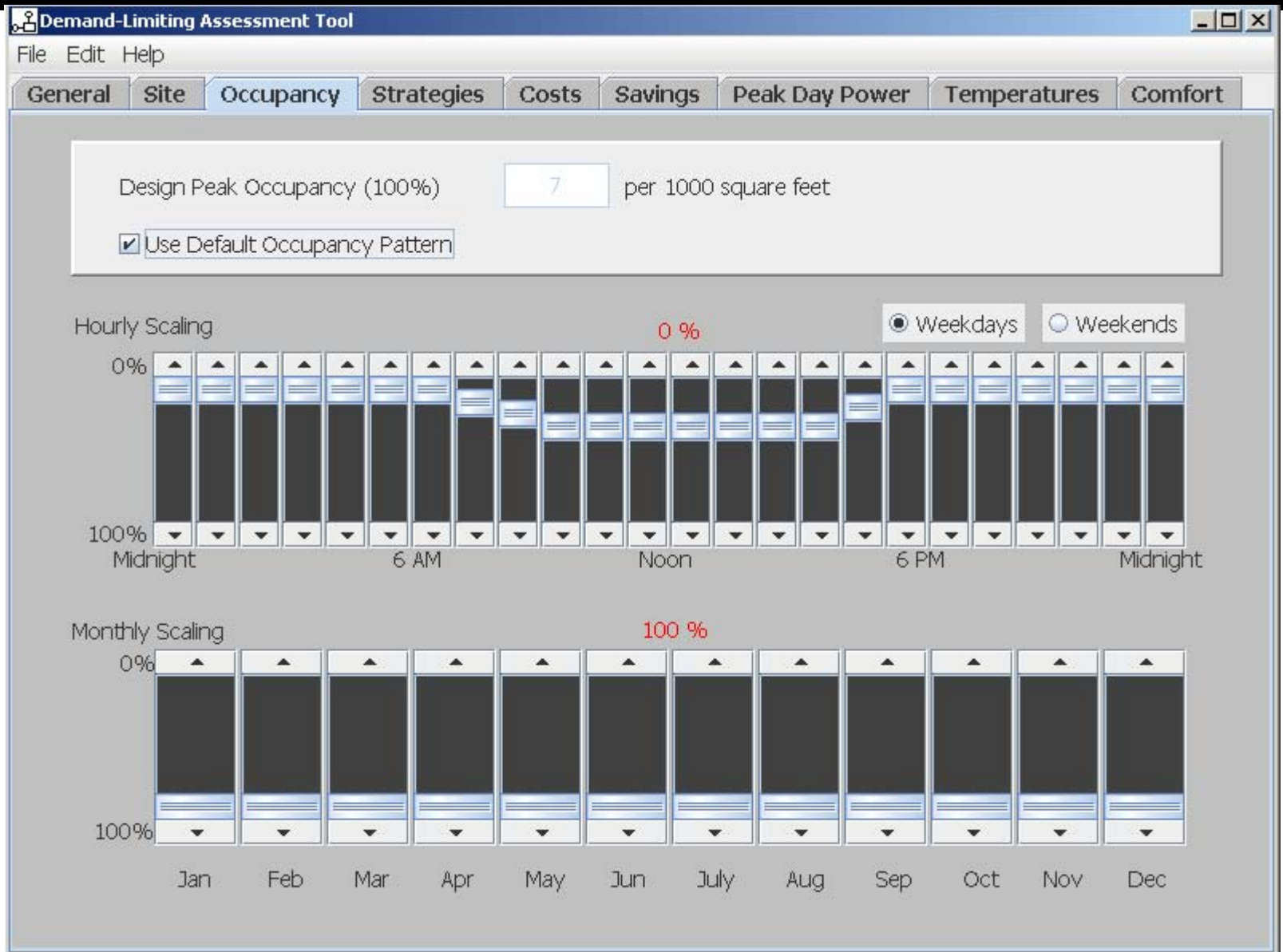

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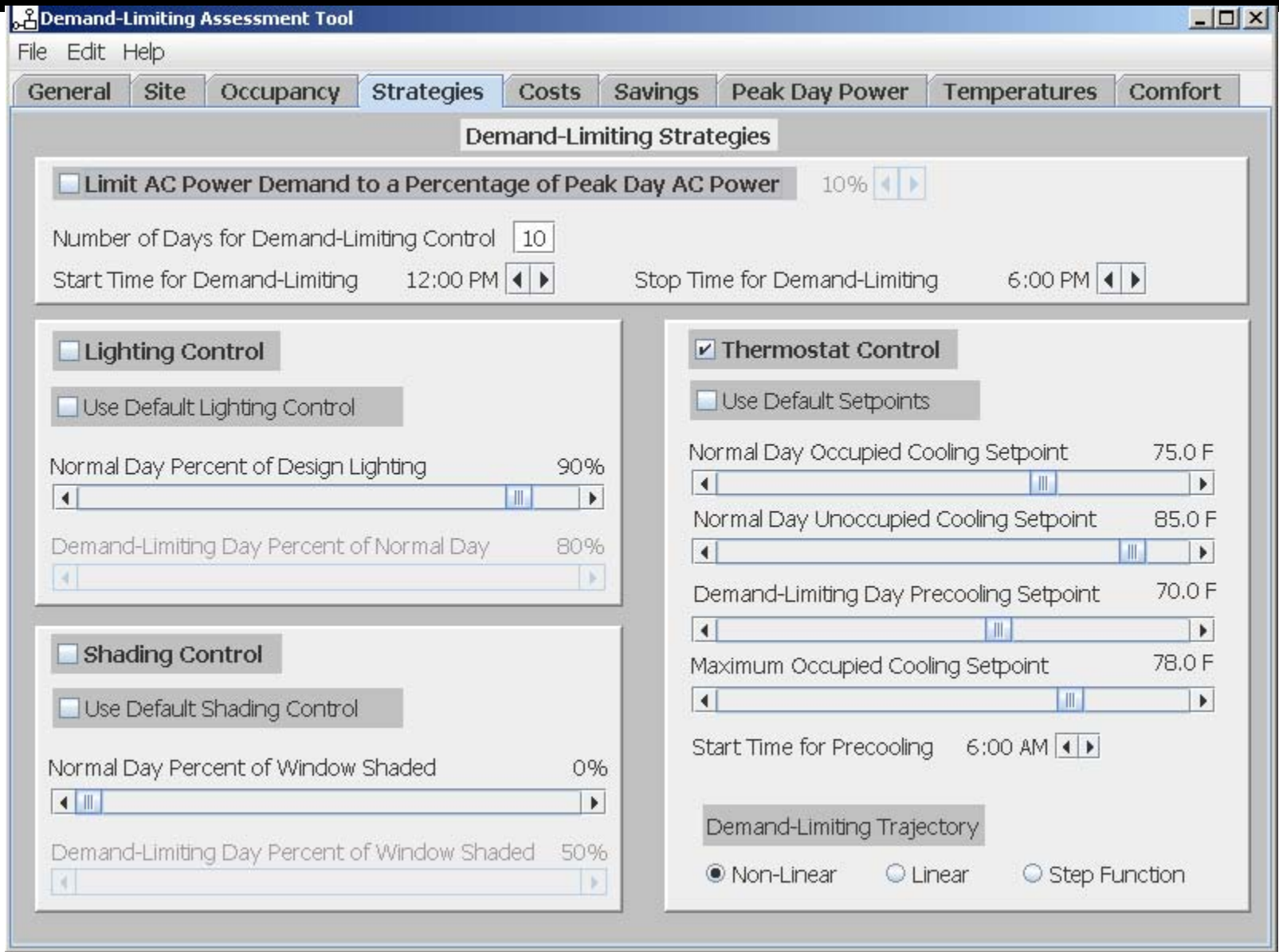

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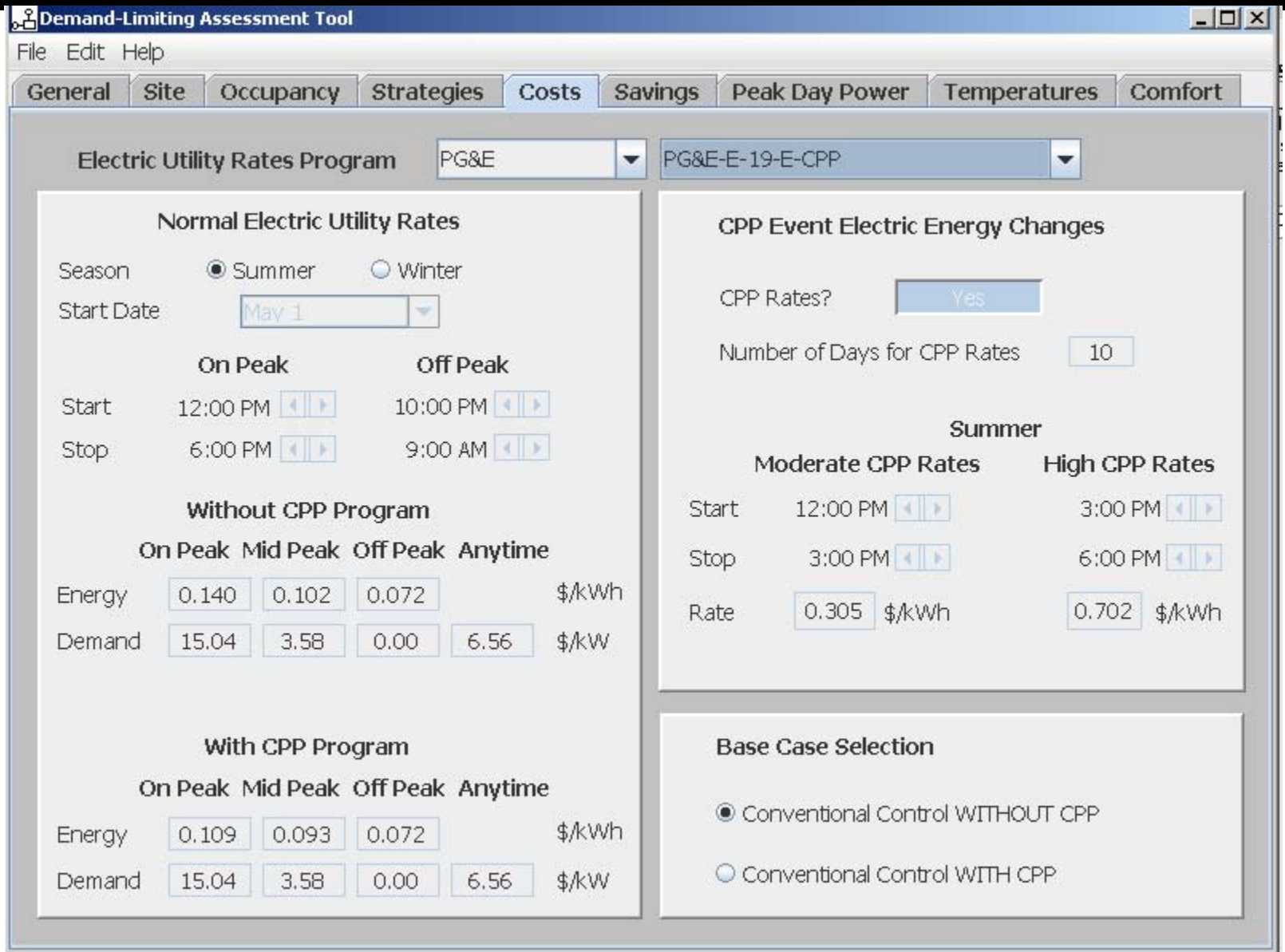


Small Building Assessment Tool

Demo

Demand-Limiting Assessment Tool

File Edit Help

General | Site | Occupancy | Strategies | Costs | Savings | Peak Day Power | Temperatures | Comfort

Calculate

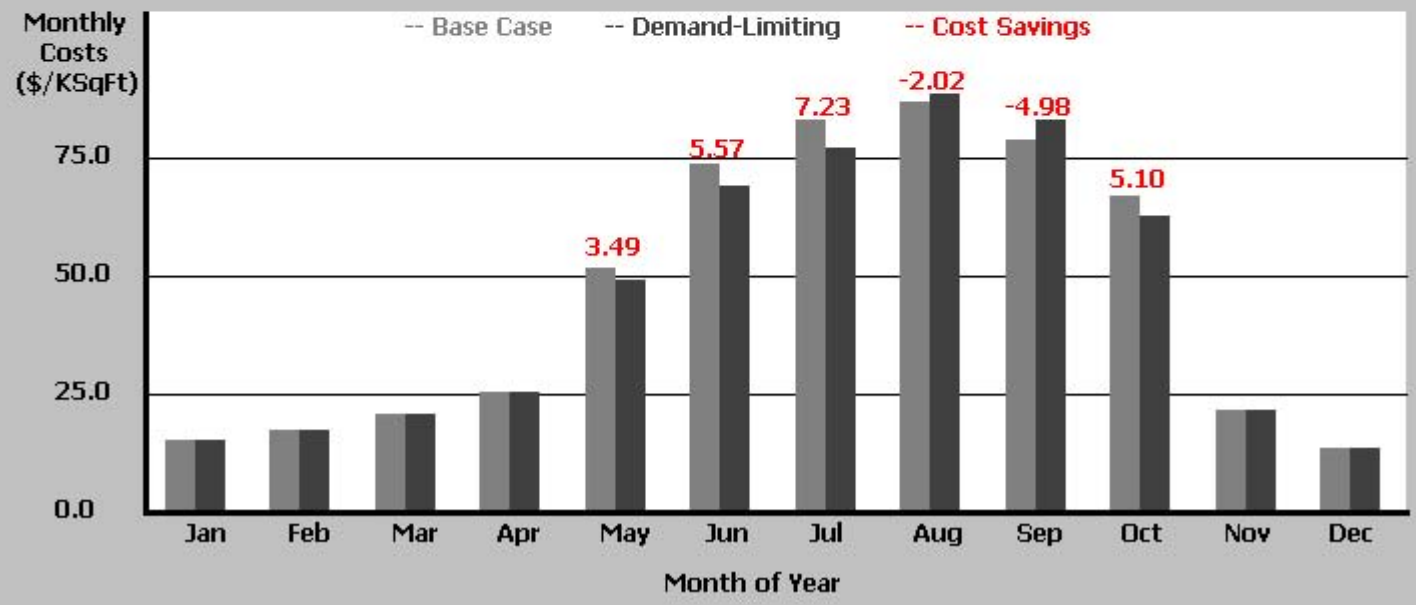
Base Case: Conventional Control WITHOUT CPP

(•) AC Electrical Costs ( ) Total Building Electrical Costs

Annual AC Electrical Cost and Peak Savings

Strategy	AC Costs($/kSqFt)	Savings (%)	Peak AC Power (W/SqFt)	Peak Dm. Rdct. (W/SqFt)
Base Case	664.83	0.00	2.35	0.00
Demand Limiting	650.45	2.16	1.72	0.63

Monthly AC Electrical Cost and Peak Savings



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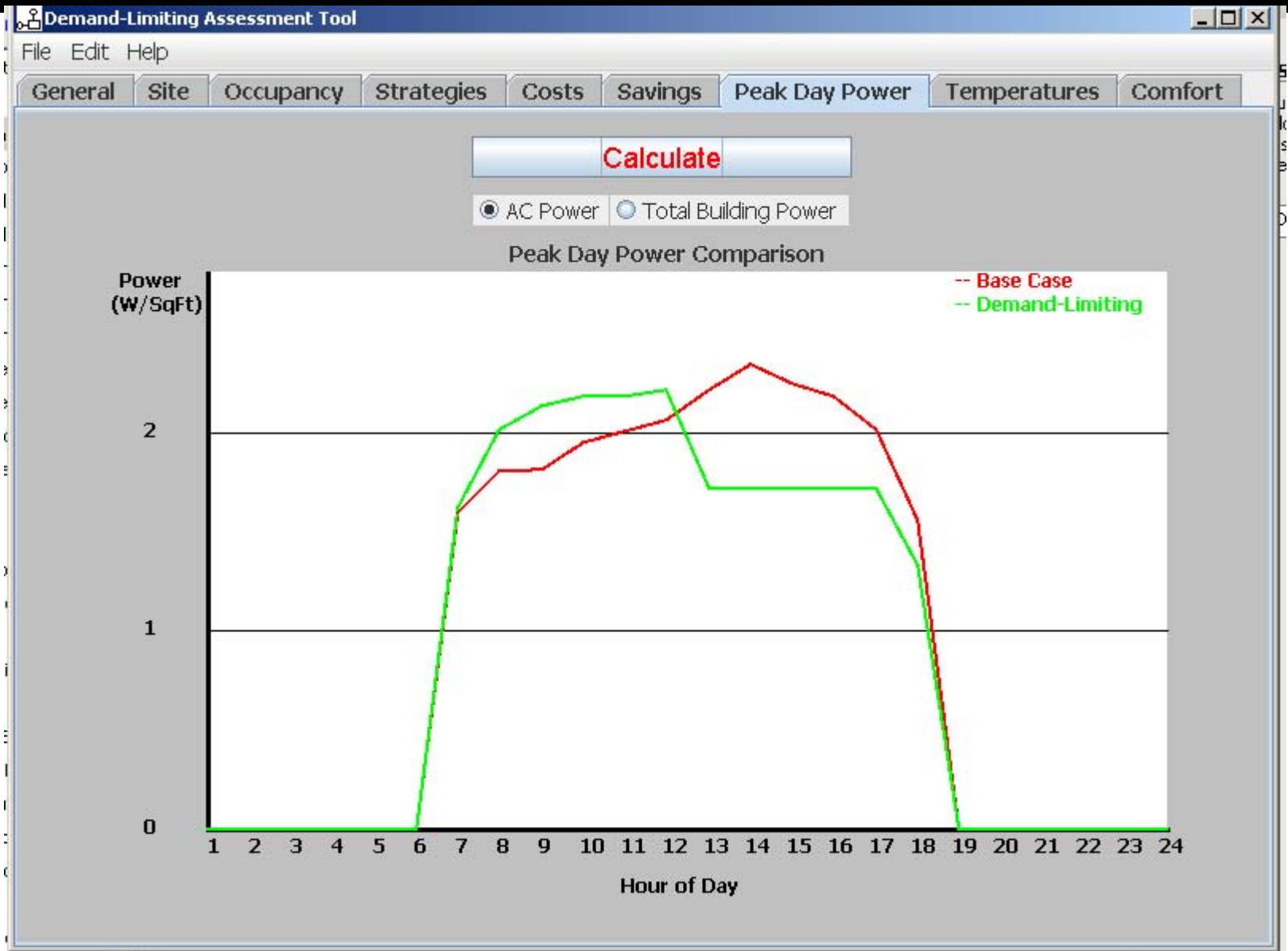

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