Too Much Reheat?
Just Add Computers

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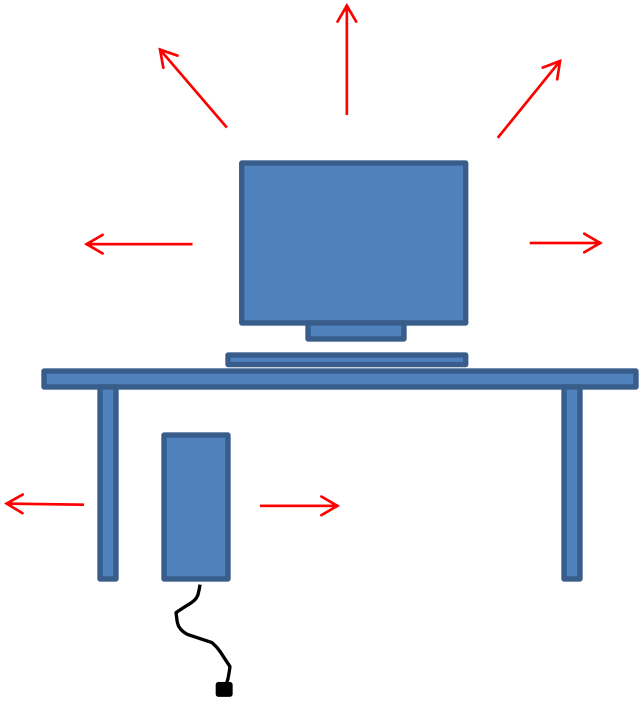
Energy Modeling Can Help

- Make Better Informed Choices
- Establish Potential Energy Performance
- Support Applications for Grants & Incentives
- Identify Critical Inputs to Existing Systems
- Performance Verification

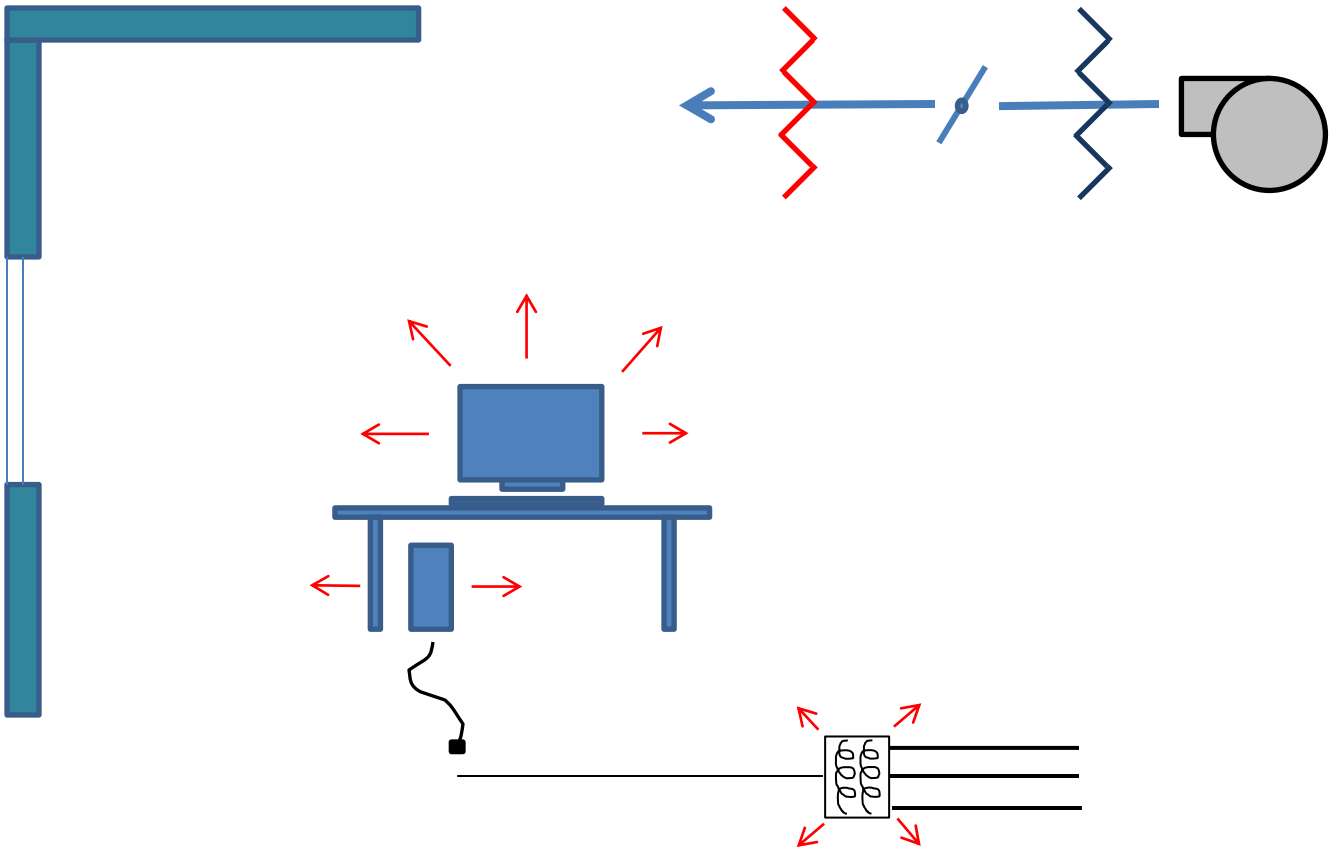
The Soft Underbelly

1. HVAC Scheduling
2. Equipment & User Choices
3. Occupancy
4. Weather
5. Operations & Maintenance

Here is a Computer



In A Typical Office



Too Many Computers

- Over-estimate Airflow Rates
- Over-estimate Cooling Loads
- Over-estimate Power Distribution Losses
- Under-estimate Reheat
- Dilutes LEED Savings
- Over- and Under-estimates ECM Savings

Impact on Recommendations

- Over-estimates Savings for:
  - Efficient Cooling System Components
  - Improved Glazing SHGC
- Under-estimates Savings for:
  - Efficient Heating System Components
  - Envelope Improvements
  - Optimized Fan Control
  - Chilled Beams
  - EC Motors in Fan-powered Terminal Units
  - “Right-Sizing” Central Equipment
  - Airside Economizer

Too Many People

- Can Over-estimate Ventilation Rates
- Slightly over-estimates Cooling Loads
- Under-estimate Reheat
- Can reduce LEED Savings
- Over- and Under-estimates ECM Savings

Impact on Recommendations

- Over-estimates Savings for:
  - Efficient Cooling System Components
- Under-estimates Savings for:
  - Efficient Heating System Components
  - Optimized Fan Controls
  - Demand Controlled Ventilation
  - Efficient Humidification Systems

The Take Home Message

- The accuracy of plug and occupancy assumptions is very important in energy models used for verification.
- Accuracy is somewhat important in LEED modeling.
- Accuracy can impact recommendations when evaluating specific technologies.

How do YOU generate your plug load and occupancy assumptions?

What information resources should be developed to support the energy modeling community?