

## ENERGY SERVICES

Glumac Energy Services provides consulting on optimizing building energy performance, including energy modeling for LEED, State and/or utility programs, incentive documentation, life-cycle analysis and code compliance. Glumac Energy Services is a distinct department within Glumac. Glumac Energy Analysts have mechanical engineering backgrounds and are knowledgeable in all areas of the built environment, providing consulting to other MEP engineers and architects on all building energy systems.

### INTEGRATED, SUSTAINABLE DESIGN & RENEWABLE RESOURCES

Our integrated design teams look at the synergistic effects of all building energy systems, as well as renewable energy systems. Our energy analyses include:

- Natural ventilation
- Daylighting
- Efficient lighting and controls
- Passive solar architecture
- Thermal energy storage (TES)
- Ground source heat pumps
- Evaporative cooling
- Heat reclaim/ heat recovery
- Under Floor Air Distribution (UFAD)
- Radiant heating and cooling
- Controls and operations
- Efficient motor and drive applications
- Solar hot water
- Photovoltaics
- Fuel cells
- Distributed/ dispatchable power
- Microturbines
- Cogeneration
- Wind turbines
- Optimum glazing and insulation



### LEED AND OTHER SUSTAINABLE BUILDING PROGRAMS

Glumac provides sustainable design support with:

- LEED certification: energy analysis, documentation, and process leadership
- Calculations and documentation to satisfy LEED requirements in the categories of:
  - Water use reduction
  - Reduced CFCs in HVAC equipment
  - Prerequisite for optimized energy efficiency
  - Renewable energy
  - Green power
  - CO<sub>2</sub> monitoring
  - Controllability of systems, and thermal comfort
  - Oregon State Energy-Efficient Design (SEED)
  - Washington State Energy Life-Cycle Cost Analysis (ELCCA)
  - Green Guide for Health Care™ for hospital projects

## RETROFITS, REMODELS AND ENERGY MANAGEMENT STRATEGIES

Once a building is in operation, there are tried-and-true strategies to manage energy use:

- Energy analysis and computer modeling of specific system operations
- Commissioning for new construction, re-commissioning and retro-commissioning of existing buildings
- Energy forecasting and planning to review historic usage and project future energy costs
- Retrofit designs to improve existing systems
- Energy management reporting systems, including metering systems and integration with security and digital controls
- Meter mapping to distribute metered gas and electricity to various zones and end users



## ENERGY CODE COMPLIANCE

Energy codes across the United States have several common requirements, but there are variations among the states and municipalities. Our energy services team offers these code compliance services:

- Comparing ASHRAE 90.1 with LEED requirements to determine which code is more stringent
- Consolidating energy analysis results to comply with both local/state energy codes and LEED requirements
- Completing elevation takes-offs for compliance forms and recommending wall/window assembly details for architects
- Documenting prescriptive compliance for lighting, envelope, and HVAC systems
- Performing trade-off analysis of envelope components to identify best compliance options
- Analyzing whole building performance to meet energy code



## TAX CREDITS AND UTILITY INCENTIVES

Glumac assists owners and architects in navigating the rules and requirements to access cash incentives for energy efficient designs. We offer support for:

- Utility incentives for new and retrofit construction projects
- Federal tax deductions under the 2005 Energy Policy Act
- State tax credits