What is a Smart Building?

A Smart Building has the “ability” to dynamically manage its own energy demand and energy generation. In other words, it will consume, shift, store and generate energy when appropriate — allowing you to minimize your total energy spending and carbon footprint without compromising comfort and safety.

Smart Grid is Still Emerging

In the not too distant future, energy management will become much more sophisticated through the increased use of (and competition for) resources, the addition of distributed renewable energy-generation assets such as wind, biogas and solar photovoltaics, and the potential for real-time pricing. To compete effectively, facility owners and managers will be challenged with efficiently balancing their energy supply and demand resources without negatively impacting the comfort, safety and productivity of the people in their buildings.

Smart Buildings Work For You

A smart building helps you balance your facility's needs with sustainability goals. By creating a bi-directional energy flow between its on-site generation and storage systems and the outside electrical grid, a smart building can manage energy supply and demand to help eliminate energy waste and reduce greenhouse gas emissions.

Smart Grids Need Smart Buildings

Answers for infrastructure.
Siemens Can Help

**Evaluate and Plan**
- Identify where, when and how much energy your facility consumes
- Know your local utility environment
- Identify infrastructure gaps
- Develop a strategic energy management plan

**Build the Infrastructure**
- Become a smart energy consumer
- Build a transparent energy infrastructure
- Identify and execute based on demand response signals

**Continually Improve Your Operations**
- Monitor your consumption and demand response signals (in real time)
- Measure results and look for additional efficiencies
- Manage your carbon footprint
- Drive occupant behavior

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**How Your Organization Benefits**

Overall, a Smart Building will provide your organization with increased transparency and the ability to more closely manage your facility's resources. A comprehensive action plan will prepare your facility to interact with a future Smart Grid, but also produces immediate benefits. Siemens smart building plans consist of four basic components, which are tailored to your needs:

- Maximize your building’s efficiencies through **smart strategies**
- **Reduce energy spend** via continuous monitoring and improvement actions
- **Dynamically manage** demand and supply side resources (including demand response events)
- Work toward your organization’s **sustainability goals**

**Smarter Building Automation is Key**

Your building’s automation system can be used to establish an energy-efficient infrastructure — one that allows your organization to use Smart Grid to your advantage. Through an evaluation of facility energy and consumption patterns and operations, a sound energy infrastructure (like the Siemens APOGEE® building automation system) can be enhanced with specific energy management applications, such as time-of-day scheduling, economizers and chilled water reset. In addition to the automation system, a host of facility improvement measures, such as lighting retrofits, steam trap replacements or variable frequency drives, can further increase efficiency. Furthermore, a continuous commissioning program will keep your building up-to-date on an ongoing basis.

By focusing on dollars and cents, we help our customers procure energy through a competitive process. Siemens can also work with utilities on your behalf to negotiate your rates and leverage your facility improvements. Smart energy management includes the continuous monitoring of energy costs versus the budget.

**Can You Manage Energy Demand Instantaneously?**

Yes, and in the future, you can have even more control. By dynamically managing your building’s energy use based on predicted demand, and in response to real-time market pricing and demand response signals, you can optimally balance your supply and demand — giving you more control over your costs.

Finally, through the installation of onsite renewables, you are adding an additional power (and potential revenue) source, strengthening your ability to reduce greenhouse gas emissions and working toward your organization’s sustainability goals.