New Developments in Architectural Technology

Satisfying Client Requirements with Efficient Design Techniques

Like many fields, architecture is continually evolving. These changes are keeping pace with the advent of new technologies. Architects are continually searching for methods by which to create harmony between the fundamentals of the trade and the needs and desires of the modern world.

Efficient architectural design takes into consideration both the aesthetic potential of the buildings and structures being built, as well as the needs and desires of the people who will be living and working inside of them.

Lighting: a True Energy Hog

For instance, the U.S. Department of Energy says lighting accounts for more energy usage than heating or cooling combined. This presents an opportunity for designers to foster viable energy-saving solutions, while still offering modern and pleasing structures. In the case of lighting, strategies such as daylighting, automated shading, and other tools contribute toward a long-term solution, but there are also other methods that could be considered.

As an example, the Times building in New York City utilizes technology that monitors the amount of available daylight at any given time. Dynamic shades are able to dim interior lighting to make the most use of the natural light available. As a result, the building's owners have reported a nearly 60 percent savings by using this system!

Wind Power to the Rescue?

Another consideration for today's architects is harnessing the power of the wind. While this may seem like a purely energy-saving technique, it also has other value, as well.

It's no secret that people — from environmentalists to investors — have noticed the potential in wind power. At the moment, however, the only way to truly harness this energy has been through tall structures with turbines attached. This method would not work in a city for many reasons. But architects have been developing means by which to design buildings and structures to work in concert with nature — thus simultaneously utilizing the power of the wind and cutting down on energy costs.

This "urban-wind-as-renewable-resource" phenomenon has prompted the concept of building-integrated wind power (BIWP). Though certainly not on the scale of the wind turbines seen in fields across the country, BIWP still contribute to the overall energy savings for individuals and cities.

There has, however, been some hesitation to implement BIWP on a large scale. This may be due in part to the fact that building-integrated wind power systems are very heavy, and also generate vibration and sometimes loud noises that could prove distracting to neighboring homes and businesses. This may be why many remain hesitant about implementing BIWP, and skeptical about its benefits.

The Future of Green Building

Proponents of architecture focused on energy-efficiency and harmony with nature contend that it is only a matter of time that the general population will embrace these ideals. Some say the change will initially come when clients are able to see the potential cost savings in such measures, while others believe these clients may only be enthusiastic about these measures once it becomes clear the positive environmental and social impacts they can bring about. ■

What is your business doing to maximize energy efficiency?