



Systems of sustainability

November 21, 2011 - Green Buildings

Paul Meyer is a Vice President and Director of Commissioning Services at WSP Flack + Kurtz ("WFK" for short), a standard bearer for delivering innovative engineering solutions across the globe. Propelled by its work in energy-efficiency and green architecture, WFK worked on some of the biggest and most intricate buildings in the world, such as the 18 million sq. ft. Petronas Towers in Malaysia.

Along with his colleagues in WFK's seven offices across the country, Paul commissions clients and provides energy audits in the local area, meaning Long Island, New York City and New Jersey for Paul.

Auditing may not sound as grandiose as erecting a 1,483 foot tower half way around the world. But with Americans finally joining the sustainability movement some 25 years later than the Europeans, and still behind China in many ways, these audits represent a great national effort. As the land of plenty turns to conservation, we optimize our resources while cutting costs.

Arriving on site, Paul's primary interest is what the owner wants. If the owner doesn't know, Paul explains the options and helps the owner make decisions. Once they are established, Paul can find the most effective method to reach the goal.

As Paul explains, "With existing buildings. . . you don't have a clean piece of paper to start with." This leads Paul to fit new, contemporary pieces of equipment that may not match the existing old structure. As Paul continues, "You have a building that started out as a factory, and now they want to turn it into apartments. . . So that creates a little wrinkle, and I have to learn that these things are fixed, and these things are variable, because I already have a problem. I may need to knock out a wall here."

Regarding sustainability, the tenets of green promote saving as much material as possible. So, rather than dumping discarded elements, Paul might find a beautiful door that was thrown out and turn it into a table, an artwork or something that won't just be thrown away. Meanwhile, dumping bricks at a landfill wastes resources that could be used to build a new wall.

Auditors generally start with the five basic systems as determined by LEED. These include Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources and Indoor Environmental Quality. More recently, LEED added an additional category, Innovation in Design.

Beyond the fundamental systems, there are many factors large and small to deal with. Paul laments the fact that not all auditors and contractors follow the LEED guidelines to build accurate models to determine what the building should find "right size" the equipment for utilities.

According to Paul, "You have to determine what you will need on your worst day, and find systems that may not fit the exactness of the necessity. Of course, for 364 days this won't be necessary, but engineers want to be conservative and make sure the systems and utilities are "right sized." Many auditors and contractors do not follow this protocol.

A green building is a collection of five major systems, as mentioned above. But even with the modeling, occupants should know that maintaining there in-door habitat can be tricky. If the building has a lot of glass, natural light and lovely views can be nice. But it's terrible for heat retention. But as the systems are working in concert, reducing the amount of glass may require a change to other systems until achieving and overall balance.

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