

## The First Step Toward Smart Buildings

*InfoComm's Integrated Building Technologies task force takes on the challenge of creating better buildings.*

The growth of integrated building technologies (IBT), and the increasing role of sustainable practices in construction projects, has created a major market opportunity for the AV industry. The IBT task force, chaired by David Wilts from Crestron Electronics, was created by the InfoComm Board of Directors to identify how the AV industry can establish a role in the growing area of IBT. The task force quickly discovered there are multiple definitions of IBT created by other associations and IBT stakeholders. To further clarify the term the task force developed this definition:

*"A process of conceiving, designing, constructing, commissioning, and operating buildings, which leverages technology to optimize the goals and objectives of the built environment."*

The task force recognized that building owners need some way to measure the performance of their buildings. Among the list of benefits would be a more enjoyable, efficient, and sustainable work environment. One major challenge is that buildings contain many systems that do not interact as well as they could. If the systems were linked together, the data could be applied to effectively manage the entire building. The AV industry, consisting partially of manufacturers of control systems, programmers, and integrators with a wide breadth of technical knowledge, provides a unique opportunity for it to take a leading role in IBT in creating a smarter building.

### **Who will provide the coordination?**

The existing systems within a building (e.g., lighting, HVAC/AirCon, security) tend to be installed and maintained by individual companies; someone is needed to bring the systems together to coordinate data solutions for the entire building. The task force believes that the AV industry could evolve to integrate and offer consulting, or management of complex systems. Here are three reasons why the AV industry makes a good choice:

- They tend to be quick adopters of new technologies.
- They design friendly tools which allow people to use complex systems with multiple protocols.
- They respect other trades by learning their terminologies and phrases.

In addition to offering a role as coordinator or liaison, a cultural change will need to take place. To make it all happen will require a new method of systems management.

### **Restructuring for success**

In order for IBT and the smart building concept to be successful, involved parties will need to create an effective, collaborative, integrated environment. In such an environment, the personnel who specialize in all of the mechanical and electrical components of a building work together, rather than separately, to achieve a more efficiently run building. Such restructuring will no doubt raise more concerns that will need to be addressed during the transition in order to realize a truly integrated building.

## “Here’s our ideas, what do you think?”

In July, the task force expanded their membership to include individuals from the architectural and construction industry to help determine how to overcome the obstacles and concerns that have become barriers to IBT adoption. In August, the task force took their ideas to the National Conference on Building Commissioning (NCBC) in Cincinnati, Ohio, to create awareness within the building facility manager community that the AV industry is at the forefront of developing a process for coordinating all low voltage systems in a building. After the conference, the task force met and agreed that everyone involved wants to realize not only the financial benefits of an efficiently managed and sustainable building, but also the benefits of documenting the process together for better coordination and efficiency. They also confirmed that a profession with the necessary skill sets does not exist, nor is there currently a professional development body to create that profession.

### Information, Reaction, Prediction

With developments like the imminent arrival of the Smart Grid and the Architecture 2030 Challenge which is a non-profit organization seeking to minimize the way buildings impact the environment, there’s a new generation of building owners who want sustainable spaces geared toward people and interaction. With this idea in mind, imagine a building in the future -- designed using building information modeling (BIM) software, executed using Integrated Project Delivery (IPD), with disparate building systems sharing data and communicating cost effectively, and energy efficiently -- all made possible by the leadership and expertise of AV professionals. What would the building be like? Here’s a scenario to ponder:

*On a cold Saturday morning, you drive to work. The building where you work knows you are on your way via GPS/cell phone technologies. As you enter the parking garage, your garage tag is automatically read, and the garage lights turn on. The building dispatches the nearest elevator to you, and when you step into the elevator, you notice the garage lights turn off. When you arrive on your floor, you notice that the HVAC/AirCon system has already begun to warm up your work area. Your office lights are already on and they have been set to the correct dimming level.*

When a “smart building” is invested with integrated technologies, the whole building could gather **information** on the tenants’ habits and **react** to their movements. Given time, the building could **predict** energy use and reduce maintenance costs. Benefits include tenants who are more comfortable while they work and building owners who enjoy a significant reduction in property management issues and costs. The IBT task force’s AV members and their partners in the building design and construction industry all agree that the future is looking very automated.