

The Top 10 List for Successfully Integrating Building Systems

1. Understand the Building Owner's Business

Integrating building systems is not a "one size fits all" deal. There are different facility types and widely varying business objectives for private and public sector building owners. Integrated systems for a mixed use project for a developer or owner is significantly different than a 500-bed government hospital.

Since technology is simply used to further business objectives, it is the business drivers of the building owner that shape the approach for successfully integrating building technology systems. The discussion with an owner at this point has to do with how building technology systems can affect capital and operational costs, generate revenue, improve the experience or operation of building occupants, enhance building operation and possibly differentiate the facility. Such a discussion is the programming or foundation on which to move forward.

2. Get Early Participation in the Project

The discussion with and buy-in of the owner has to be early on in the project. The later it is in the project schedule, the less likely it is to be adopted and if so, to be successful. Later in the process also means its more "disruptive". It's disruptive because some decisions have already been made and designs developed by the rest of the project team, specifically the architect and civil and MEP engineers. It's also disruptive if it has budget implications that were not initially planned for. Chances for success depend on getting in early in the project.

3. Set Realistic Expectations with the Owner

Under promise the owner. Steer clear of technology "futures" or "trends" and deal with what can be accomplished as of today. Identify to the owner any potential implementation issues and changes needed in the management of the building. Set an expectation with the owner that can be met or exceeded, and you'll have a successful project.

4. Clearly Define the Roles of "Traditional" Project Designers That Are Involved In the Project

The conventional way of designing building technology systems is to do it in "design silos". The legacy design and contracting methods do not work for integrated or converged systems. Success means an effort with the owner, the owner's facility or property manager, the architect, the mechanical engineer, the electrical engineer, the project team's consultants for IT, security and audio visual, the construction manager and the contractors to "tweak" the design and installation process. Realize that some may resist doing things differently. Clearly identify who is designing and installing what, and who will ultimately be responsible for the integrated system design and installation.

5. Detail the Scope - Clearly Identify the Systems Involved

Specify what systems will be involved in the effort. Better yet, develop a matrix of all systems involved, and determine what systems are to be integrated. Identify which systems will integrate on a physical level (cable, equipment rooms, etc.), a logical level (i.e. similar protocols), and a functional level. For example, the fire alarm will be integrated into access control and video surveillance. Or, the audio visual system will integrate with lighting controls and HVAC management. Or all the systems will be integrated on a backbone cable system. Move from the platitudes of "integrated systems" and "open" to the expected reality.

6. Establish the Technical Foundations and Operational Functions of the Systems to Guide Their Design

Identify the common elements of the systems that are either necessary for their integration, could result in cost savings or improve the operation of the building. These may be common cable types, a reduced set of communications protocols allowed, open system databases, web-browser management tools, common equipment labeling schemes, software integration, etc. Standardize, simplify and find the commonality between the systems. Establish the technical foundations to guide the contractors.

7. Bridge Any Gaps between Persons Involved In Facility Management, Life Safety And Information Technology

Integrated systems effect the organizations that support and are responsible for those systems. The organizations' roles change slightly, the skills sets of the required personnel may change, and there may be budget implications. Assist the owner in responding to these changes in order to identify improved operational efficiencies and cost effectiveness in the organizations.

8. Provide Cost Estimates for the Project and Update the Cost Estimates on a Regular Basis

After you provide an initial probable cost of the integrated systems, continue to update the cost based on market conditions or design changes. Avoid any surprises for the owner. Also, prioritize the items included in the installation in preparation for the "value engineering" discussion that will come at some point in the project.

9. Understand and Adhere to the Overall Project Schedule and Its Sequencing of Activities

There are large teams of people involved in designing and constructing a building. The building systems are one small part of that effort, albeit critical to the operation and occupancy of the building. The design and installation of the building systems has to follow an overall schedule and is dependent on several activities performed by others outside of the smaller integrated building system group. Here are a few things that will be specified and installed by others that the integrated building systems may be dependent on: space, conduit, cable trays, power, grounding, air conditioning, door hardware and furniture. Coordinate and sequence the schedule for integrated systems with the items needed for their proper installation.

10. Deliver the Plan - Diligently Manage the Details of the System's Installation and Operation

The best systems design plans and specifications are diminished if the systems are not properly installed or not installed to specs. Manage the details. Continuously observe the installation. Inspect, inspect and inspect. Again, work with others on the team to ensure success.