

'Smart' buildings perish but office automation survives

By RANDY YOUNG

Once a buzzword in office building design, the concept of a "smart building" no longer is the hot fad it was touted to be.

The "smart building" was a somewhat hazy merger of office automation and extended infrastructure. In its conceived form, a "smart" office would recognize and admit an arriving tenant through a magnetically striped pass key. The admission would activate an entire chain of events.

A computer system — part of the building infrastructure — would turn on lighting, air conditioning and background music in the appropriate office. A video terminal, linked to the building's core computer and offering electronic mail, word processing and other software, would be booted. And, finally, the tenant's telephone would be returned to service from an automated answering machine.

In a nutshell, the "smart" office provided security, environmental management, data processing and virtually all forms of communication that a tenant could possibly want for a single monthly payment. But today, the concept is generally recognized as either impractical or unmarketable.

While not a success in its own right, the "smart" building concept has given rise to a new generation of office automation and new thinking in infrastructure. This time, the concept is working. It's affordable and definitely marketable.

Where the "smart" building of the 1980s often intruded on the tenants by forcing them to accept the services the building provided, the sophisticated building of the 1990s will be more adaptable to the tenants' needs. With the recognition that tenants want to have their own telephone systems and data processing equipment, designers are taking new approaches.

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Architects are now leaning toward creating vertical communications "masts" and spacious horizontal "chases" for wiring purposes, said Roy Lowey-Ball, a principal with Ford Powell & Carson Inc., a local architectural firm. The communications masts are like elevator shafts without elevators. Tenants can run power and data lines throughout their spaces for any systems they desire.

"The name of the game is flexibility," Lowey-Ball said. "(Builders) can't predict from client to client what the needs will be. The biggest thing is to make it adaptable."

Flexibility has been enhanced through modular office furniture and new types of flat wiring that can run under carpet squares. The modular offices include partitions and work areas.

Beyond wiring flexibility, Lowey-Ball said that the trend includes new heating and air-conditioning systems. More buildings are designed with multizone air-conditioning and variable air volume (VAV) distribution boxes. VAV systems provide even greater flexibility than just "running ducts everywhere," he said.

The concept of a central computer trying to provide all services to all tenants

also has encouraged the development of integrated building management systems. Usually based on a single, "off-the-shelf" personal computer, the new systems control basic lighting, air conditioning, fire alarm/management and security, said Jasmine Azima, president of Jasmine Engineering in San Antonio. The approach is to manage the building rather than the tenants.

The new, integrated systems are designed to reduce energy and labor costs and maintain uniform comfort levels, Azima said. Through a continuous monitoring of interior and exterior conditions, every facet of the air-conditioning system is controlled for minimum energy consumption. Lighting, environment and security all can be managed at one location by one person.

Through the use of a modem, a building's energy and security management can be handled remotely. Azima's firm recently has completed the engineering work on a number of U.S. Border Patrol stations using such computer systems. A single, centralized personal computer controls security and environment in all the stations, resulting in significant manpower savings, Azima said. Until recently, this centralized approach had only been available in large university or hospital complex settings.

While a number of building developers or renovators aren't prepared to make the investment of the fully integrated systems, many are laying the groundwork today for future automation. By installing electronically activated controls rather than the traditional pneumatic mechanisms in their air-conditioning systems, the property owner is taking the first step toward automation.

The cost of digital controls has dropped considerably in the last couple of years but still cost more than the older-style systems, said Hector Carrisalez, project manager for Jasmine Engineering.

Azima pointed out that engineering costs, however, were no higher for the new generation of devices than for the older systems. A fully automated energy management system typically reduced energy costs by 15 percent in an office building, she added.

Manufacturers of automated, integrated control systems have taken a modular approach in developing their equipment. Johnson Controls, one of the country's two largest manufacturers of building control systems, recently introduced a new line of controls which could be operated initially as "stand-alones," but later interfaced with a computer.

An intermediate step is to tie the individual controllers to microprocessor panels, said Gene Bohne, San Antonio sales engineer for the company. This modular approach allowed the building owner to upgrade easily as energy prices or needs dictated. This line of Johnson controls is used in Rivercenter mall, although a minicomputer is used rather than a personal computer, Bohne said.

Through the use of a modem, Johnson periodically can monitor the Rivercenter mall system and trouble-shoot problems from his office rather than send out a technician. Johnson also has the capability of continuously monitoring integrated systems for customers.

Honeywell's building automation group reports that digital control systems now outsell the traditional mechanical controls by a ratio of 60 percent to 40 percent in this region. Honeywell is the other major supplier of these control sys-

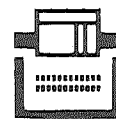
tems. At least 80 percent of the digital installations are connected to personal computers, said Paul Haushill, account executive for the company.

While the integrated concept is still new, Haushill said that already 20 percent of the digital systems were fully integrated with security and fire protection. The fire emergency management control system has been receiving strong endorsement from the fire departments. In the event of a fire, the system isolates the specific location, reports it to the fire department, unlocks emergency exits, and turns on smoke evacuation fans and emergency lighting. Fire officials actually can use the personal computer to direct the evacuation of the building.

Randy Young is a San Antonio free-lance reporter.



Jasmine Azima



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