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General Information

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Getting It Right, Brick By Brick

Involve IT In Building Design & Construction To Save Time & Money

Constructing a new building for a company, or even renovating a new building to accommodate the company's needs, is a big affair that requires lots of planning. Of course, you will need some sort of architect and/or engineer to design the structure or modifications, and you will need various contractors (plumbers, electricians, carpenters, etc.) to do the actual work.

The question becomes, "Who from within the company needs to be involved?" Well, executive management will need to approve of the design and layout. The accounting department will need to cut the checks to pay the people doing the work. Human resources may need to be involved to ensure the new design and layout meets with OSHA and ADA requirements. Did we leave any departments out?

How about the IT department? No, you probably won't need any input on what OS or software application to use to design the new layout, and you won't need them to set up a dedicated server for the Human Resources department to research OSHA and ADA standards. But involving the IT department in the planning and design phases of constructing or modifying a building can save the company lots of money and lost man-hours down the road.

■ An Ounce Of Prevention

IT should be involved in a variety of factors when planning and designing a new facility. Christopher Davis, co-author of "Hacking Exposed: Computer Forensics," says, "The IT department is a critical stakeholder in the process, now more so than ever. Manufacturing and order fulfillment systems today are heavily networked. Thinking through potential issues up front alleviates time and money spent down the line."

Power is a major consideration. If a server room or data center is part of the plans, the IT department should be included to determine what the power requirements are for that room. Other considerations might include whether the data center should be powered on a separate circuit from the rest of the building and what sort of UPS or backup generator will be necessary to ensure continued operation of mission-critical equipment.

Another primary consideration involving the IT department is the cooling and ventilation of the server or data center. Computers and networking equipment generate a tremendous amount of heat. To ensure the continued operation and long life of the equipment, it is important to maintain adequate airflow and compensate for the heat output with an appropriate level of cooling to keep the room within the



recommended operating temperatures for the equipment.

Outside the data center, the IT department may have input on the amount of power required for the workstations, other networking equipment throughout the facility, and where to place outlets. Planners should consider the number and location of workstations currently, as well as room for growth in the future, so network cabling can be routed and network jacks installed.

■ The Right Person For The Job

When you involve the IT department in design and construction decisions, you are ostensibly getting an expert opinion regarding how things should be or what will work best for the current and future interests of the company, at least as it relates to the computer or network infrastructure. But that assumes that the IT department has the knowledge necessary to make those decisions.

Harlan Carvey, author of "Windows Forensics and Incident Recovery," warns that companies need to have enough respect and appreciation for the value of the IT department to hire the right people in the first place.

Carvey explains, "Well, say a company hires newly minted paper MCSEs (just as an example; this could apply to RHCEs too) [because] they felt that they saved money in doing so (i.e., fill five slots with folks at \$40,000 a year, rather than \$75,000). How qualified are those folks going to be when it comes to making recommendations regarding the new move? How interested are they going to be in putting in the time to learn the information they need to know . . . if they know that there won't be any material benefit . . . in it for them?"

Even if the personnel in the IT department are knowledgeable and qualified, they still may not have all of the knowledge necessary to provide the input needed for building construction or modification. You should assess the qualifications of the IT department and possibly consider hiring an outside consultant to assist with building design and planning.

■ The More The Merrier

Ideally, the more departments you can involve up front for input on the planning and design phase, the fewer issues you'll have to handle down the road. Davis says, "If a company is large enough to have an audits department, and they want to be proactive, then they should involve their IT audits team. It's much easier to design a system up front that conforms to expectations than to fix it later."

In a nutshell, seeking the input and advice of the IT department early on and letting them guide the construction in a way that makes maintaining and administering the network infrastructure easier will pay big dividends down the road. ■

by Tony Bradley

IT Considerations

Assuming that the decision has been made to include the IT department in building planning and design meetings, what sort of things does IT need to consider in providing that input?

- **Physical security.** Will the data center or primary location housing confidential or mission-critical data be secured to restrict access?

- **Power.** The IT department needs to ensure that the various computer equipment has been factored into the decisions for where to place outlets and what the overall power capacity of the new building will be, as well as making sure that the critical equipment has some sort of UPS and/or backup generator in case of an outage.
- **Ventilation.** Does the data center location have adequate ventilation and empty space around the computer equipment for adequate airflow to keep the equipment from overheating?
- **Cooling.** Make sure that the building in general and the data center in particular has adequate cooling to keep the equipment and the employees at a comfortable temperature.
- **Fire suppression.** Water might be fine for the rest of the building, but it would be a bad choice for putting out a fire in the computer room. IT needs to ensure that the data center has adequate fire suppression that won't cause more harm than good.
- **Network topography.** Consider the design and layout of network resources and ensure that the building design is adequate to accommodate the network cabling. Additionally, for future upgrades and maintenance, the network wiring should be easily accessible for the IT department.

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