



## AN ARCHITECT'S PRIZED BUILDING MAY BE SECURITY'S NIGHTMARE

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As a museum security consultant, I find myself spending a great deal of time retrofitting existing buildings with security and fire detection equipment which might, otherwise, have been unnecessary had certain design criteria been followed. Additionally, I advise under protected museums on matters other than electronic protection methods. Far too often I have found that museum protection and operating expenses are greater than they need be due to the lack of forethought during the design of the facility. More often, I find that because museums are traditionally poor, security is inadequate. They just can't afford the improvements.

Let me first state that I recognize the importance of allowing the museum's architect to have the freedom to design structures which are fitting of the art inside. Economy and efficiency are not the end goals of museum design and, indeed, the building itself is often a work of art. The importance of providing suitable structures for our masterpieces of the present and future is not at issue, at least with me. What is at issue is the need for responsible planning and design so that basic security principles can be "built in" to the facility being planned.



Museums used to "look like museums." The exteriors were classical and the interiors decorative. They were generally built of solid masonry with windows and skylights, often protected by bars or shutters. While alarm systems were rarely installed, the world of 1890 was far different from the world of today. The lone watchman was usually a sufficient deterrent to protect the facility from all threats. There was even a phase in museum design where the museums looked like fortresses and were, indeed, quite secure. Often, museums were placed in palaces or fortresses renovated for the display of art.

But designs changed. Exteriors became "modern" and interiors "free flowing." Helen Searing wrote in "Museum" magazine (April 1987) that "with Meis Van der Rohe's New National Gallery in Berlin, 1962-68, the Curator had to be an architect" due to Meis's preoccupation with what he called "universal space." The age of the museum as a work of modern art had arrived. The Curator became architect, forced to mold the stark

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interior into a gallery, while the Architect became the artist. All too often, the architect concentrated on his work of art and failed to provide for the interior shell which had to be cleaned and protected, serviced and maintained. The building as a work of art became the goal. The building that "worked," was no longer in style in some circles.

There are, I am sure, certain design considerations which cannot be denied. Natural light is important in an art museum making vulnerable skylights inevitable. Proximity to the sea is useful in an aquarium. Open space is critical to an air and space facility. But far too often, a museum building is designed without regard for the problems that will be caused for the security manager, the building superintendent, and, not least important, the financial manager, who must find a way to heat, clean, service, and otherwise afford the grand facility.

It has been my observation that far too many museums are being designed without the advice and input from those who must protect, service, and pay for the ongoing operation.

There are various phases in the design and construction of a museum facility. Generally, the phases can be identified as follows: Schematic Design, Design Development, Construction Document, Bid, and Construction phases. It has been my experience that little effort is made to include the security manager in building or renovation plans until well into the

construction phase and long after critical decisions have been made which cannot be changed.

In fact, it has been my experience that some museums purposely exclude the security manager, regarding him as a nuisance who can raise questions he cannot answer; someone who can pose problems but not solutions.

What often happens in the real world is that the museum director and key individuals from the Board of Trustees or curatorial staff meet to discuss the building design and "program." The thoughts are transmitted to the architect, and a certain degree of freedom is granted to the architect, depending upon his prominence and reputation, to design a facility meeting the needs of the director. This initial phase often takes months--even years--and results in a concept in the minds of the director and the architect which are not likely to be changed by those with practical concerns.

As the building design takes shape, one thing universally becomes apparent. The museum director always wants more than he can afford. This is compounded by the fact that museum directors rarely have a concern for or interest in such mundane aspects of building design as plumbing, locker rooms, first aid stations, roll call training rooms, or even ticket booths.

Leaving the mundane concerns to the architect, the director concentrates on the appearance of the building exterior, and on the interior display areas including walls, moldings,



lighting, ceilings, floors, wall coverings, and casework. The result is that great sums of money are budgeted for aesthetics with an equally large sum grudgingly set aside for mechanical systems, plumbing, and other necessary evils of the building. Bet on it: if there is a choice between an attractive ceiling with less effective smoke detection or less attractive ceilings and effective smoke detection, aesthetics will win out most of the time. That is why you see so many smoke detectors in major museums mounted inside light cans or mounted sideways on walls—even though Underwriter's Laboratories refuses to provide a rating for such mounting and the detector's effectiveness is reduced four-fold.

At about the end of the Design Development and Construction Document phase, the architect begins in earnest to develop budgets for the "necessary evils." One of these is a security and fire protection system. How does an architect develop a budget for security? The process is interesting. First, he is rarely, if ever, concerned with how many guards will be required to staff the building. The museum director or administrator, working with the financial managers of the facility, determine that the endowment or other funds available will permit the addition of "X" number of additional guards, "X" number of additional custodians, etc. This number is hardly ever, based upon anything other than subjective guesses by non-security people. Logic would tell you that a study should be

conducted to determine how many guards are needed to provide coverage of the space. But this process is rare. Usually, the reverse is true. It is determined how much money exists and the security manager is told to "make it stretch."

Meanwhile, the architect is using equally unscientific means in developing a budget for security and fire protection equipment. Often, he follows one of two courses of action. Sometimes he calls the electrical engineer and asks him to develop a system budget. He communicates the information that the building is already over budget and that the engineer had better find the least expensive means of alarming the space. The engineer almost always calls the local vendor for one of the less expensive security and fire alarm systems, discusses with him the building design, and asks the vendor to design a system which is as inexpensive as possible. From this very basic design, a budget is estimated.

This process has many flaws. First, it is assumed that electrical engineers know and understand alarm systems. I know for a fact that this is not the case. If you don't believe me, try hiring one to provide a stamp and seal on a system blueprint and specification. It is not easy. They don't do alarms unless alarms are their specialty. Second, it is assumed that electrical engineers or architects understand physical security requirements. Too many times I have seen glass doors protected only by magnetic contacts



and entire buildings containing 20 or more detectors all on one alarm zone. How easy it is to defeat such a system. Tamper with one device and the entire system is out of commission until the alarm vendor can respond to repair it.

The other method used to establish your security equipment budget is for the architect to contact the vendor and do the same thing that the engineer normally does. What I'm saying is that regardless of who estimates the security and fire detection system cost, every effort is made to budget as little as possible for the system. After all, every cent spent on security and fire protection cannot be spent on the really important things like ceiling appearance, wall coverings, or moldings.

What is the impact of this on you as the security or building manager? Well, from that exercise, a budget number is carved into stone. Once that number is established, you have essentially lost the battle for funds because you must then take money from another sacred cow if you are to regain funds for security and fire protection. It is always easier to get funds before they are "given" to someone else than it is to take them away after the fact, regardless of how valid your need is.

The most dangerous phase in the process is the Construction Document phase. During this phase, someone prepares a written design of your security and fire detection system. Usually, that person has little

experience in security or fire systems and almost no experience in museums.

Once those documents are bid, you have little opportunity to make any changes other than the most minor ones. In many cases, the electrical engineer selects an alarm system according to which company sent him the prettiest literature and the nicest notebook binder. He tells the local manufacturer's rep for the security equipment that he will specify their product if they will write the specs for him. It should be noted that some security consultants do this as well, specifying the same alarm systems over and over for every institution they work in, getting paid as though they were doing original work.

It is often during the final phase--Construction--that you, the security manager, is finally made aware of the project. Employees at your level are often briefed on the project and told what they can expect. As the building nears completion, the security manager traditionally begins to plan the realities of implementation of his program in the new facility. It is usually during the last three months of this phase that I get the calls from the security manager pleading for me to do something. It is at this time that he has discovered the inadequacies of his electronic system, the need for many additional guards due to the unacceptable building design, and other serious design problems.

I might note that it is also at this time that the superintendent discovers he



cannot clean and service the building without added staff and that his budget for preventive maintenance and system service is far too small.

We have always experienced problems of this type. Traditionally, the security manager is the stepchild in such matters as providing input for practical building design and rarely has a voice in selecting the building alarm system components or vendor. Public institutions face a separate problem--the low bid. Since old technology almost always costs less than new technology, the public institution usually buys equipment which is closer to obsolescence.

I recently visited Corpus Christi, Texas, and had the opportunity to stop by the new Corpus Christi Art Museum. This modern structure is located on the bay in a redevelopment area of Corpus Christi. To say that it is located on the bay is an understatement since only about 15 feet separate the exterior wall of the building, just outside the major art storage room, from the water.

Is this really that critical? Five times this century, Corpus Christi has been devastated by major hurricanes. Corpus Christi is to hurricanes as mobile home parks are to tornadoes! To protect the city, Corpus Christi built a fifteen-foot-high sea wall. Where did the city locate its art museum? They located it on the water side of the seawall. It is, in fact, THE seawall. The nearly windowless building has some glass. Where? Almost all is on the windward, water

side of the building, unequipped with storm shutters. In the bay, the city built a breakwater to stop large waves and surge tides from covering the city as it had in the past. But by locating the art museum at the mouth of the river as it enters the bay, this is the one area in downtown that is not protected by a breakwater.

So Corpus Christi's beautiful new museum will take the direct impact of the next hurricane to hit the city. It will take on water not only in its galleries and mechanical areas, but in its art storage rooms as well. The Corpus Christi Art Museum is a primary example of how museum management--and taxpayers--will have to live with the building design for years to come. In the case of the Corpus Christi Museum of Art, the building may not last the expected 100 years. It may last considerably fewer years depending upon when the next major storm hits.

What can be done? There are several things which can be done to ease or eliminate this burden placed upon us in similar positions.

The selection of the architect is very important. Until museum Boards of Trustees and museum directors recognize that architects must not be permitted to build a monument to themselves, we will have a problem. Architects should not be limited in developing a creative design for your facility, but they should not be allowed to experiment on you. The Illinois Center in Chicago, which houses the state government center as well as



the State of Illinois Museum, is a fine example of a building which simply does not work. It can't be cooled in summer, it can't be heated in winter, and it can't be economically secured in any season. But it will go down in history as a great design by a great architect--I believe, only because it is flamboyant. In fact, too many buildings are being designed flamboyantly for the sake of flamboyance, rather than artistically for the sake of art. Another example is the High Museum of Art in Atlanta. I recall the pleas for help that Bob Burke and I received from the security manager, asking if we could come to Atlanta to look at the building only weeks before it was to open. The wrong alarm system was selected using the wrong detection devices. Too few devices were provided for too many exit doors which could not be adequately protected with too few guards. This great glass structure by this great museum designer was the talk of the Nation. Art critics loved it, but those of us in the security profession saw it for what it was. Now this great architect, whose firm has designed at least one building that didn't "work" as a museum, has been selected to design the proposed J. Paul Getty Museum in Brentwood, Los Angeles, California. I sincerely hope that he includes the thoughts of the security staff this time, for he does not have budget as his excuse.

Lest I sound too harsh on architects, I am not. I feel comfortable working with them and I work with them a lot. The vast majority of the museum designers I have come to know welcome security advice and

expertise. The smaller the firm, the easier it is to work with. The larger the firm, the less likely it is to spend the time on details--details that are important to you. A good architect can be the security manager's best friend and ally. An architect who sees himself as "great" and designs a monument to himself can be the security manager's greatest headache. The building he creates can be a headache everyday for the next hundred years. But the architect who is eager to relate the structure to the infrastructure will truly create a monument to himself. Museum management must understand that they should not bite off more than they can chew. They must learn that everything costs more than estimated. And above all, they must understand that architects will inevitably underestimate the cost of those systems seen as "necessary evils." After all, they report to the museum director and if he doesn't want to hear bad news, they won't give him bad news.

Architects must learn to include the security manager and his security consultant at the earliest stages of design. A good security manager and security consultant will never tell the architect that he cannot do something. They will suggest alternatives and offer a list of consequences if the architect's course of action is followed. But never should they interfere with the creative process. They should help the architect and exhibit designer get what they want while getting what they need to do their job.



A good architect will listen to the input of the security manager. He will offer designs which allow the building to be protected day and night with minimal manpower. He will locate exits in such a way as to minimize the ability of employees and visitors to exit without passing security. He will locate the building where it can be protected and secured. And above all, the good architect will never, ever allow an alarm vendor to design an alarm system.

While I am a firm believer that there are honest alarm vendors in this world, I am also a firm believer that the alarm vendor will always do what is in his own best interest, given a conflict between your interest and his. Vendors will always under design--except when they overdesign. They will always sell you the best possible detector--when they can get it at a good price from their supplier. If they can't, they will sell you whatever they can get at the best discount from their supplier.

From the earliest phase, the security manager and his advisors must be involved. A realistic budget for protection must be established and protected. Every effort must be given to preparing specifications which insure a competitive bid process, so that the museum receives as much value as possible for its dollar. This is critical in public museums where specifications are necessary to spell out exactly what is needed and to prevent old technology from winning out over new technology.

Every effort must be made to design the building so that it can be protected with minimal manpower. Mixed use of space should be avoided, for museums sharing space with theaters and art centers rarely have good security at a good price. Windows and penetrations into the building should be avoided when possible. Skylights and other roof penetrations must be protected. The building should be compartmented to reduce fire spread and to allow staff to remain in their own areas, without disturbing other areas when possible. Storage should be decentralized, isolated, and away from offices.

In my travels, I see many problems with museum design. I see hanging walls located adjacent to windows, allowing a smash and grab theft to occur almost before it can be detected and certainly without any chance of a realistic response time. I see glass walls unsuitable for hanging pictures (you can't nail into glass), so "temporary" walls are placed against the glass. This is almost impossible to alarm, in most cases making major collections vulnerable. I see storage rooms combined with offices, and mechanical and electrical equipment inside art storage, making it necessary for nearly everyone on staff to have a key to storage.

A frequent problem I see is the selection of incorrect alarm detection devices, smoke detectors covering far too much square footage, and detection equipment--both security and fire--placed as though the museum will never change. In art



museums in particular, walls change constantly and when they change, they block detection patterns. Museum gallery protection must be oversized to allow maximum flexibility to curators in exhibit design.

Another frequent problem I see is alarm systems so competitively bid that they do not include back-up power, phone line supervision, or supervision of detection devices from tampering. Most lack even a residential UL rating, yet they protect hundreds of millions of dollars in art. Still another flaw in design that I see is the failure of gallery and exhibit designers to adequately design special exhibition spaces, holding areas, and other essential elements of the special exhibit. Poor planning leads to overcrowding and overcrowding leads to reduced security, poor life safety, and lost income.

If I had a dollar for every smoke and security detector I've seen that cannot be serviced due to its precarious position on a high ceiling in a "free flowing" gallery, I could retire. Little effort is given to reducing ongoing alarm system service costs by designing economy into the system design.

Last week I hired a young man to work in my office and do some computer programming for me. When he learned what I did for a living, he told me how he worked in three central Florida museums as a guard or attendant. This college

sophomore proceeded to tell me how it was common knowledge that the "such and such" museum could be burglarized simply by cutting power to the phone, since the line was not monitored against tampering. He noted that when the museum changed from the ATT phone system to their own phones, the new phones were powered by building power rather than ATT power. He pointed out how easily he could knock out the phones--including the alarm phone line--if he wanted to break in! How ironic that the 19-year-old student employee could see this when the building architect, electrical engineer, and alarm vendor couldn't.

So who is to blame for this state of affairs? Who is to blame for the fact that the museum security manager is not included in the earliest phases of design and planning?

First, the security manager is to blame. Unless he makes his desire to participate, his expertise on the subject, and his concerns known to his superiors in an articulate way, he will never be included. Far too few security managers are conversant on the topic to be useful. And far too many are so beaten down by their museum management, so convinced that there is no money for security, that they fail to take decisive action and a leadership role in insisting that a competent security advisor be hired.

Second to be blamed, is the museum director who spends hundreds of



thousands of dollars hiring the prestigious architectural firms but cuts corners on protection. It is not unusual for a major museum to spend thousands of dollars on safety, code compliance, fumigation, gallery design, lighting, HVAC, storage design, and other consultants. But they insist upon allowing the vendor to design the alarm system. Museum directors must look more closely at the realities of the building operation. They must think like business people. They must design buildings as though they had to work in them.

Third to be blamed, is the architect who assumes that his firm can handle the security system design and specification. Unfortunately, the bigger the firm, the more arrogant it becomes. It refuses to recognize the importance of getting outside advice. I am amazed at how ignorant some of the larger architectural firms are on the subject of protection. As a rule of thumb, the "artsy" designers who specialize in museum work are most likely to be "difficult."

Fourth to blame, is the museum security community, the consultants, engineers, security managers, technicians, and others, who have developed a reputation of telling architects and museum directors that they cannot do something. It is not the role of the security manager to say, "No." My attitude is that anything can be done if you are willing to pay for it. Tell me what you want to accomplish. I will tell you what has to be done to provide protection. I will tell you the initial cost and the annual

continuing cost of protection. If you still want to do what you want to do, then do it. You have now made an intelligent decision. Learn the skills needed to do what is expected of you.

Fifth to blame, is the conservator. The individual charged with the care and physical protection of the works in your collection, the conservator should be your ally in demanding protection. Develop a rapport with him and educate him to his role.

Sixth to blame, are the museum trustees who must recognize that if it is worth keeping in a museum, it is worth protecting. Much of the artistic and historic heritage of this civilization is wasting away, rotting, being stolen piece by piece, when it is supposed to be entrusted to our care. Millions for acquisitions, they say, but not one cent for preservation and protection! Build a monument to our wisdom and generosity even though we do little to protect the collection housed in that monument.

When you, as security manager, are finally recognized by your superiors as being capable of doing the job that they need done, you will be in a better position to be a confidant and advisor. You will not be offered this role--you must seize it. You will not be given this role -you must earn it. If you fail to earn the role of advocate for security in your institution, you will fail to leave your mark on your institution and that failure will be felt for generations.