

SCHOOL DISTRICT SECURITY

A CASE STUDY

General:

This is a brief overview of one school district's quest for improved security and the path that they followed to achieve a cost-effective, state-of-the-art, integrated security solution for their District.

For security reasons, the name of the particular school district has been withheld but all other factors are entirely as they happened and reflect accurately the nature and detail of the initial findings of a Vulnerability Assessment (VA); how the school district acquired funding for the project; why they elected to proceed with the security solution that they are now implementing; the basis of their security design criteria, and their expectations for the future.

Background Data:

The School District is located in a rural area of the State and comprises eleven (11) actual schools currently. These include a high school, a middle school, and nine (9) elementary schools. The total square footage for the eleven (11) schools equals 803,204 square feet. There are approximately 6,400 students with almost 2,000 at the high school, a little under 1,000 at the middle school, and an average of 400 students per elementary school.

Additional properties owned or leased by the school district include the following:

Bus Depot (2,400 sq. ft. & approximately 100 school buses)
School Administration Building (14,000 sq. ft.)

There are plans to acquire or construct additional facilities but these are in the very early stages of planning at this time but would be accommodated under the new security system..

There are also two major military bases that are very close to some of the schools and where many of the students housed at one of those bases, attends schools within this school district.

The architect (Regan Young England Butera) and administration of this school district are particularly forward thinking in their approach to security within the district and immediately after "9/11" began to evaluate security and possible threats to their schools from terrorist attack and other threat levels.

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Background Data:

In many ways it was this same forward thinking that persuaded the School District Board of Education (BOE) to move ahead with an initial Vulnerability Assessment (VA) of the entire district before putting together plans for a new security system.

Vulnerability Assessment (VA):

The school district engaged a local architect that had been instrumental in the design and development of the various schools. The Architect engaged the services of an independent Security Engineering Group (Wivenhoe Management Group) with special expertise and experience in VA's to carry out a full VA of all schools and properties within the school district.

It should be noted that the school district, despite a difficult financial period, paid for the VA itself as funding for such projects was not available through the State at that time.

After an extensive and thorough vulnerability assessment undertaken by the Security Consultant Group, the findings and recommendations were presented to the school district. The findings in particular, proved to be invaluable to the School District drawing their attention not only to known problems but surfacing many other situations including several serious matters. These included:

A. Information Kept From Administration

It was found that security incident information was not being reported to the School District Administration.

B. Poor Communications

It was found that with respect to security and other matters, communication between members of the staff at each school to the individual school administration (principal) to the District Administration was less than satisfactory.

C. Little or No Access Control

A majority of schools were found to be accessible either via the main entrance or other doors throughout normal school hours. This allowed anyone to enter the school, and although there were signs requesting visitors to report to the office first, these instructions were not always followed.

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Vulnerability Assessment (VA):

D. **Problems with the Existing Security System**

Existing security systems were found to have many problems ranging from alarm systems not working, to unsecured doors, and many issues with installed CCTV Camera Surveillance systems.

Some examples of such are as follows:

- 1). In one school, a sizeable Camera Surveillance system had been deployed together with digital video recording and monitoring equipment. Unfortunately the system had not been designed, and the installed equipment utilized was inadequate to meet the school's requirements.

The VA uncovered incorrectly positioned cameras, and poor resolution cameras that were unable to cover their viewing objectives. It is likely that the use of any video recording from such cameras would have been highly questionable in any potential legal action.

Digital video recorders were supposed to be capable of 30 days continuous recording before erasure (write-over) which means the preservation of records, documents, etc. but were found in all cases to be significantly under that period and in some cases, could only hold surveillance data for three to four days. It was also discovered that the digital video recorders had been programmed to record at the rate of 1 frame per 3 to 5 seconds and therefore critical records were missing.

Students were under the impression that they were being monitored if something in the way of a difficult situation arose when in fact, this was not the case.

- 2). In many schools, there was no method to allow staff to be aware of a student leaving a school building. Thus if a student was forcibly taken from the school, no one would be aware of such an event. Many of the elementary schools were close to fairly busy roads but if a young student left the school by accident, there was no way for staff members to be aware of such events.

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Vulnerability Assessment (VA):

D. Problems with the Existing Security System

- 3). Many doors were found to be unlocked, and in a number of cases, propped open, thus school staff were unaware that doors providing access to the school building were being left open. The burglar alarm system was designed to be armed only after the end of the school day.
- 4). In several situations, existing security equipment was found to be either inappropriate for the function required, poorly installed, or poorly located to cover required areas, as in the case of motion detectors, in school corridors which left serious blind spots or gaps in coverage.

E. Credible Terrorist Risk

The VA report also drew attention to a possible credible terrorist risk based on circumstances existing within the School District. For security reasons further comment is not appropriate.

VA Recommendations:

The recommendations arising from the VA were many but three were significant:

The first was to recommend a new hire in the form of a Director of Security that would be on the Administration staff; would report directly to the Superintendent and Board of Education, and would be responsible for all security activities and systems at all schools in the District.

Primary Recommendations:

The second recommendation was to implement as quickly as possible, a new District-Wide Security System in keeping with the many security measures recommended under the VA report.

A third important recommendation was that there should be Central Monitoring and Control via two District Security Command Centers under the supervision of the proposed Director of Security with one Command Center at the Middle School location and one Command Center at the High School location.

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VA Recommendations:

The reasoning for the two Command Centers, which would mean two Central Head End System requirements, was to provide independent Control points, particularly effective in the event of an emergency situation at either or both location (the two locations had lockdowns or emergency evacuations in the past).

Where there had been somewhat chaotic situations before, involving local law enforcement and security the proposed District Security Command Centers would bring an orderly and appropriate control to such situations.

More Specific Recommendations:

1. Access to a school building for parents, visitors, and contractors should be without exception via the Main Entrance only. Prior to this recommendation, various non-school staff individuals had gained access to a school building via unsecured doors, knocking on secured doors for access, or tapping on classroom windows for entry.
2. The new security system would include a Door Alert sub-system that would operate via the main office of each school whereby every exterior door would be alarmed, and if opened from the inside of the school, would cause a door alert signal to appear on a computer screen in conjunction with a video monitor showing a camera view of that same door area.
3. All school main office areas would have video security intercom apparatus to allow office staff to identify and ascertain why an individual was requesting access into the school. Individuals would only be allowed through the main entrance if their reason for requesting entry was legitimate.
4. CCTV Camera Surveillance would be installed at all schools to provide perimeter coverage both during normal school hours and during evening hours. Interior fixed cameras would cover corridors in the Middle School and High School where incidents had occurred. There would also be fixed interior cameras covering the main entrance of each school to allow office staff a means of monitoring visitors who did not report to the main office after being given access to the school building.

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VA Recommendations:

More Specific Recommendations:

These and many other recommendations were accepted and approved by the District Administration and by the Board of Education.

Note:

To support the District's request for capital expenditure to cover the cost of the new District Security System, a copy of the Vulnerability Assessment was attached to the District's application. Approval and funding (approximately \$ 1.3 million) was approved by the State of New Jersey, Department of Education within thirty (30) days of being received.

Quote by School District Superintendent:

The School District Superintendent made the following statement:

"In the light of various incidents following the terrible events of "9/11", it was felt that this school district should move forward with a major upgrade to its existing security. We were advised to commence with a Vulnerability Assessment (VA) that would, if nothing else, identify our strengths and weaknesses in security from all angles. It was good advice, as the results of the VA provided exceptional insight and important data that has allowed the school district to identify major issues on a priority basis, select systems that will be both cost/effective and functional, and which now provides a Basis of Design for all future school construction. There is no question that knowing the relevant threat level, understanding exactly what your critical assets are, assessing the likely risk and consequences, and making intelligent choices based on such information, provides far more effective security than if we had simply relied on a local contractor to install a security system"

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VA Recommendations:

Quote by the Managing Partner of the Architects:

The following statement was made by Mr. Regan G. Young, Managing Partner of

Regan Young England Butera

www.ryebread.com

“Every decade, the architecture profession takes on a new responsibility. In the 1960s, it was urban planning. During the ‘Seventies we took on environmental design, and the ‘Eighties were all about development and design/build. We had to fully integrate computers and the web into our practices in the ‘Nineties.

In whatever we’re calling this current decade, architects (and their consultants) are now being asked to consider the security of the areas in and around their buildings.

Our designs, and more importantly, their occupants, are vulnerable to not just terrorism, but also crime, and civic/natural disasters. The public is looking to the government and other institutions to assure their safety in the built environment. These entities are turning to their professionals. This is the new imperative for our practices.”

Security System Requirements:

A number of factors dictated the nature and design of the new District Security System not least of which was the need for an Integrated System that would incorporate not only several security components working in harmony but would also allow a certain methodology in the operation of the system. These included:

1). Security Management System:

The selected Security Management system would be the “Hub” of the new system, would provide the flexibility of central and remote independent control via a network arrangement. This would also include close integration of critical CCTV elements, standard electronic access control features, and intrusion detection.

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Security System Requirements:

2). **Video Surveillance System:**

Video Surveillance plays an important role in the new security system and would have to be capable of accommodating several different types of cameras with both high resolution and low light sensitivity as well as affording a degree of standardization to the School District.

The digital video recorder equipment and video monitors also play key roles in the new security system and had their own selection criteria including cost-effectiveness, able to record for a minimum period of 30 days at a moderate frames per second (fps recording rate, and with very specific features such as video motion detection, interfacing with the Security Management System, and providing an exceptional level of reliability.

3). **Security Intercom System:**

The requirements for this security intercom system, were simplicity, reliability, and flexibility that met specific design criteria for all schools.

4). **Central Command:**

The total integrated system also had to meet the requirement of operating from a central command at two different locations but able to monitor all schools from either command position. Further it had to meet the requirement for limited individual control at all schools for the purpose of allowing individual schools to set deactivation periods for certain doors.

5). **Objectives for Security Design Criteria:**

Most important was the necessity for the new Security System to meet all design criteria. This is an essential factor to provide a successful security system that would provide the necessary level of protection to meet the identified threat level to the school district.

The major elements for objectives of design criteria were identified as follows:

a). **Control Access to All Schools**

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Security System Requirements:

5). Security Design Criteria:

- b). Provide Necessary Surveillance**
- c). Allow School Staff to be Aware of Students Leaving a School Facility**
- d). Meet Normal School Environment**
- e). Meet Cost Considerations**
- f). Provide Single Central Operator Control**
- g). Be Acceptable to All Levels of Staff**

New Security System:

Based on all of the above objectives, extensive discussions with the School District, and considerable school environment experience, the consultant team designed the system around the AMAG Enterprise Security Management System, Panasonic CCTV Video Surveillance Equipment and Aiphone Security Intercom Equipment.

A. Main Reasons for AMAG:

- Ability to operate in a Dual Head End Central Command Situation
- Non-Proprietary Equipment
- Microsoft Windows Based System
- Ability to Operate in a Network Communication Within the School District and Provide Required Security
- Provide Considerable Flexibility for extensive programming parameters “Tweaking of the New System, Future Expansion and Changes to the System, and Manufacturer Commitment to Compatibility Requirements Both in the Present and in the Future
- Proven Reliability in Hardware, Software, and Firmware
- Proven Cost-Effectiveness Now and in the Future

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New Security System:

B. Main Reasons for Panasonic:

- Manufacturer Offered Full Line of Necessary Fixed Interior and Exterior Cameras as well as Necessary Pan, Tilt, Zoom, High Speed Dome Cameras
- Cameras met Specific Requirements for High Resolution, Low Light Sensitivity, and Camera Operation that includes Color and Monochrome.
- As a Result, It was Possible to Provide the Level of Standardization that would limit Operating Costs
- Cost-Effective Value
- Proven Reliability

C. Main Reasons for Aiphone:

- Capable of Meeting Custom Application for School District – extensive equipment options
- Exceptional Reliability
- Ease of Use Both at Master Station and at Individual Unit
- Capable of Video Intercom and Non-Video Intercom Operation
- Cost-Effective Value

System Integration:

A further reason for selecting the various manufacturers involved in the new School District Security system relates to System Integration in that the system was required to meet two different forms of integration as follows:

1). Specific Alarm Integration:

A major requirement was for specific integration of the security management system, particularly at elementary schools where any exterior door opening would trigger the nearest programmed exterior camera to immediately display that door area on a video monitor within the main office of the school. It also had to be achieved in such a manner that it would not constantly interfere with the duties of the main office staff but prevent, wherever possible, a student leaving the school building either by accident or intentionally. A further requirement was to minimize training for the main office staff.

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System Integration:

2). **District Integration:**

The new system had to also integrate successfully at the District level whereby an operator at either District Security Command Center would be aware of a door alarm situation at an individual school simultaneous with the alarm identified at the school. Also the District Security Command Center operator could access the AMAG security management system at the school as well as view camera scenes at that school door alarm.

It was also a requirement that that same operator be able to assist the particular school by taking over control of the Perimeter Cameras in order to track the whereabouts of the student upon leaving the school building.

The new District Security System meets all of these requirements.

Non-Electronic System Aspects of the New Security System:

It is important to remember that electronic security systems alone do not provide a complete security system. In conjunction with the new electronic aspects of the District Security System, the School District is also paying attention to the following:

A. **Physical Security:**

Numerous recommendations in the VA related to better organization of the **security monitors** (staff) employed at the high school and clearer responsibilities under the new Director of Security.

It was recommended that there be close ties between local law enforcement, the school resource officers employed at both the middle school and at the high school (resource officers are full-time local police officers stationed at each school during normal school hours), the District Administration staff, and individual school staff.

B. **Training:**

Different training programs were recommended for different levels of staff with an emphasis on security awareness and crisis response training. In addition, the security technical specifications spelled-out training for staff that would be operating and utilizing the new security system.

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Non-Electronic System Aspects of the New Security System:

C. Response Drills:

For any new security system to be effective, it is necessary for all security staff, local teaching staff, students, and District Administration staff together with local law enforcement to continuously rehearse procedures concerning emergency events, and exactly what procedures should be followed in evacuations and other measures designed to minimize particular types of crisis situations.

D. Use of District Security Command Centers:

It is also important for the School District to understand the full value of having dual, independent District Security Command Centers, and to learn how to utilize such centers to their maximum.

E. Monitoring of the New Security System:

From many years of experience one learns that there is effective security monitoring and there is poor security monitoring. The difference can be critical in modern school operations where a serious situation can arise very quickly. Sound monitoring techniques coupled with proper system design can often uncover incidents and situations before they become serious events.

Co-operation between all levels of school staff, security staff, resource officers, security monitors, security management, administration staff, and local law enforcement is essential to successfully minimizing incidents and potentially major events.

Continuous Evaluation:

The value of continuously evaluating any installed security system cannot be stressed enough in today's security climate. The following should be considered on an on-going basis:

- The "Post 9/11" Security Climate Changes Virtually Daily. It is unwise with any installed security system to consider everything is now taken care of!

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Continuous Evaluation:

- Security Technology is Always “A Work In Progress”. It is important to stay abreast of new Technology. This requirement was built-in to the new Security System Design
- The School District itself is constantly changing and as it changes, the new Security System design criteria should be frequently compared to current practice and evolvement of the District operation and requirements
- How well is the installed Security System doing? A facility operation should be constantly monitored for changes that would affect a security system.

Phased Security Plan:

For many of the reasons given above, the School District has adopted a **Phased Security Plan** with further phases to follow as more funding becomes available. As a result, the School District has prioritized its requirements and goals related to security that also allows it to take full advantage of new technology, and to meet it in an orderly and cost-effective manner, and future infrastructure requirements within the District.

Summary of Primary Benefits of the New Security System:

- 1). Meets all Current Operational and Protection Requirements
- 2). The New System is Based on Design Criteria that is in Keeping with Sound Security Industry Standards and Guidelines which in turn, will Likely Avoid Possible Negligence in the Event of any Incident
- 3). The New System is Cost-Effective and Utilizes State-of-the-Art Technology. (Based on Experience with Typical Lowest Bid Procurement Practices in New Jersey which often Results in Less Than Adequate Equipment and Installation)
- 4). Flexibility is designed-in to the new Security System and will allow the security system to Expand and Change with the School District

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Summary of Primary Benefits of the New Security System:

- 5). Perhaps the real benefit to the School District is that the new Security System following the Design Criteria established at the start of the development of this system, provides the necessary Level of Protection that will protect all persons involved.

This includes:

Students

Staff

Parents & Visitors

Contractors

**FOR FURTHER INFORMATION OR QUESTIONS, PLEASE CONTACT
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