

CAMPUS PUBLIC ADDRESS

Public address, a method of broadcasting one-way, voice announcements via loudspeakers, is not something typically considered when designing a communication system for campuses. It is a very useful tool for providing general announcements or for providing information during emergency situations, yet it is often overlooked. Although many institutions are currently considering adding public address to their facilities, they are faced with a self-imposed dilemma; how do they install a public address system infrastructure in a cost-effective manner? The answer is simple, **the infrastructure more than likely already exists.**

When considering campus communications, all institutions have something in common. They utilize either a telephone system or radio system for two-way communications, and most have both. Most campuses use telephone as a communication medium between offices, buildings, dorms, and remotely installed emergency call box telephones. Typically, the cabling used for the telephone system has been in place for many years and the cost of installing new cable for new systems is a very strong deterrent when considering upgrades.

Some campuses elect to use RF (radio frequency) communications between their emergency call boxes and campus security, but the telephone system infrastructure still exists at all other locations. Similarly, most (if not all) campuses utilize a radio system for security communications. This system typically includes a security office base radio, mobile radios in vehicles, and portable radios carried by security guards.

The existing telephone system and its associated cabling and the existing radio system can both be used as a backbone or infrastructure for installing a campus public address system.

Siren System to Distributed Voice/Audio System Comparison

In light of recent events involving campus communications, an unusually large number of emergency warning system specifications have surfaced. Most of these specifications are written without the input from anyone familiar with communications and/or public address systems and many are written around a “siren” system. A siren system is exactly what it states, a loud siren typically generating a sound output level of 150 dB SPL or higher (jet engine noise level). These types of systems are typically viewed as a “quick fix” approach to public address because they require relatively little investment in system design. Many of these systems are actually laid out using Google Earth®, due to the lack of detail required. Simply plant a pole with a speaker cluster at 1, 2, or 3 different locations on the campus and the campus is covered. Or is it?

These siren speaker clusters are intended to be heard for long distances but provide no means of instruction to those intended to hear it. Since the siren “horns” are typically clustered on top of poles (usually 30 feet high) and placed in a few strategic locations, the intended method of penetrating buildings and structures is to simply try and generate a loud enough audible signal to do so. This type of system usually includes a general plan for all personnel to move to a pre-designated gathering point upon hearing the siren or, as of recent technology, check their voice or email. Specific live instructions

are intended to be provided at the gathering location. If the person providing those instructions is not present, campus personnel have no idea of what they are to do next. If the siren is intended to signal students to check voice or email, it may require them to first turn on their cellular telephones, possibly costing valuable time. If a student is in an area that can not receive the cellular signal or if the signal towers are down or non-functional, then there is even more reason for concern. Additionally, visitors to the campus would need specific training to understand the warning signals.

Another type of system uses the same horn clusters and extremely loud outputs to broadcast voice messages and tones. Although specific instructions can be broadcast from the speakers, the approach here is to also set the outputs loud enough to penetrate structures. This is not as easy as simply hearing a loud siren and the ability to understand the broadcast while inside buildings is liable to be lost. Again, the sound level directly beneath the speaker clusters is somewhat deafening and the audio could carry for quite a distance in the open air. Voice audio broadcasted at this volume level is often difficult to understand due to wind currents and audio distortion.

Both of these types of siren systems are typically used in and around chemical and nuclear facilities to warn surrounding communities in an emergency. They serve a very useful purpose at these locations, intended to reach communities at long distances, but we are discussing a college campus. Thirty foot poles with speaker clusters do not naturally fit into a campus setting and could raise a few interesting questions from visiting parents and students alike.

GAI-Tronics' experience in the design of public address and paging systems spans many decades. Our approach with the Addressable Amplified Speaker, the Stanchion Broadcast Assembly, and the Stanchion Broadcast Module is to distribute the speakers, indoors and outdoors, providing intelligible voice instructions to the masses. A distributed speaker system will require a greater design effort and more individual speakers than will a centralized speaker location system (as described above) but the speakers, and their associated volume, are more discrete and the level of reliability is extremely high. Additionally, most campuses exist within established private communities. Existing sound ordinances may already prevent systems with extremely high sound levels from being installed.

GAI-Tronics' Public Address broadcast products; the Addressable Amplified Speaker (AAS), Stanchion Broadcast Assembly (SBA), and Stanchion Broadcast Module (SBM), are designed to provide public address announcements from inputs provided by our head-end equipment, existing telephone, or existing radio systems. All products are designed to provide clear, voice and tone audio to the areas where personnel and foot traffic exist. Being able to operate a public address system at reasonable volume levels, while still getting the message across loud and clear, will definitely help keep the peace.