

University of Rochester Rochester, NY

The University of Rochester is comprised of a cross-section of buildings that were designed and built between the 1920s and today. In order to meet its presentation needs for classes, meetings, film screenings and conferences, Mat Felthousen, Assistant Director, University Information Technology, had the challenge of developing a system that would ensure a consistent user experience campus-wide.



Felthousen, a gifted programmer in his own right, initially created "Central Monitor," a QM-RMC based control system to manage over 80 rooms from one touchpanel. The QM-RMC is a very compact Crestron 2-Series Ethernet control system, which may be used standalone for small or specialized IP-based control applications, or as an expansion module for larger systems. The QM-RMC provides a very cost-effective solution for controlling and monitoring any number of classroom video projectors, public display devices, centralized AV matrix routers, codecs, lighting systems, or remote motorized cameras over an IP network.

The Crestron XPanel provides Web browser-based control with true touchpanel behavior, and enables "Central Monitor" to select rooms and monitor, control, and configure equipment remotely. Functions like turning on a projector, adjusting volume, or taking control of a DVD/VCR can be performed from anywhere on the network. XPanel video sensing information and additional controls (where applicable), such as lighting, extra projectors, document cameras, microphones, and built-in computing equipment can also be accessed. Crestron RoomView® Express software functions as a high level dashboard that tracks how each room and the associated systems and hardware are being used.

The Crestron QM-RMC/XPanel combination that helps make up Central Monitor can also reconfigure the programming of both the touchpanel and control system in order to facilitate the swapping out of equipment — a projector in a classroom from a Panasonic to a Sharp, for example. Any change made via the Central Monitor takes effect in the remote room

immediately and transparently to the user. The only time there is a noticeable change is when equipment is added, in which case new buttons appear on the touchpanel. If an in-room controller loses its configuration, it will connect to the Central Monitor, and reconfigure itself based on a stored string that is generated as a part of the configuration process.

The "Universal Program" was developed next, and is currently in use in 50 rooms. A QM-RMCRX-BA processor-based control system, Universal Program can sync up with Central Monitor for an additional level of control, or it can stand-alone, to support rooms lacking a network connection. When the program is loaded for the first time in a room without a network connection, the system will ask for some basic configuration settings via the touchpanel. Once the room is set up, the configuration is stored in NVRAM (non-volatile random access memory, which does not lose data when power is turned off), and the information is sent to Central Monitor when a network connection is established.

Universal Program is used in rooms equipped as simply as having just a QM-FTMCSC FlipTop and a display, or as elaborately as having podiums with any combination of equipment or systems, including a PC, document camera, laptop connection, DVD/VCR, closed-caption decoder, switches, lighting controls, touchpanels, microphones, projectors, motorized screens, and more. The Universal Program simplifies equipment installation, configuration and



replacement, whether in combination with Central Monitor or by itself. When factoring in the pre-programming of the wide variety of equipment and systems available, there are literally millions of combinations the system can configure from any network connection.

A student staff member can swap a faulty DVD/VCR with a unit from school reserves, and a single touchpanel selection by the help desk via Central Monitor and XPanel will change the remote system programming. This also enables repairs to be conducted in the 10-minute gap between classes, with no reprogramming via SIMPL. The end result has been a vastly reduced response time even though staffing levels have proportionally decreased. Additionally, many problems can be solved by support personnel via remote diagnosis.

The Universal Program also has several built-in safeguards to help preserve the long-term functionality of equipment. The video sensing capabilities of QuickMedia™ enables timers to automatically shut off a projector after a prescribed amount of time. Likewise, triggers such as extended periods during which the video is muted without interruption will also cause a projector to shut off, thereby avoiding damage to the LCD grid. The Central Monitor also limits the maximum volume of the audio - in real time — so that users cannot cause damage to the equipment or disrupt adjoining classrooms. QuickMedia skew settings are stored in the Central Monitor system along with the configuration of each room, in case a power outage causes the in-room controller to lose these settings.

Gleason Library

The Gleason Library is the first 24/7 facility on the University of Rochester campus dedicated to study activities. It was renovated in 2007, and part of the renovation included a distributed and collaborative AV system, for use by both students and the general public. The design is intuitive and enables remote and local control of the displays. The space functions in a similar manner to technology-enhanced classrooms, yet blends in with the overall aesthetics of the facility.



Eleven displays are distributed across two floors and eight rooms. Four of the rooms are collaborative cubicles equipped with 42" LCD panels, QM-WMCs, and QM-RXs. The QuickMedia cabling from each room is fed to a QM-MD8X8 that also receives feeds from both floors. With this design, each room is capable of displaying local signals (from a laptop or AV device) or remote signals fed from two head-end locations in other parts of the library. One room is a self-service, student-only theater, furnished with audio-visual equipment, touchpanel, speakers, projector, and furniture that can be easily rearranged for a variety of uses. Two 65" LCD panels are located in an information lounge and receive remote feeds, and will soon be used as part of a digital signage initiative at the University, still fed by QuickMedia technology.

QuickMedia technology with matrix switching allows all displays to receive remote AV signals when not in use locally. Rather than use a touchpanel to control most of the display devices, the video sensing ability of the QM-WMC connection plates is used to trigger events such as turning on the display.

The response from students has been overwhelmingly positive, and the equipment has been in nearly constant use since the opening. There are also discussions underway of expanding the capabilities of the system to include more sources, including HD devices.