



## Extron Technology Enables Education and Collaboration at Cal Poly's Collins College

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Christina De Bono  
Principal and President at ClearTech Media

Cal Poly University's Collins College of Hospitality Management – CCHM was founded in 1973 as the first such institution in California, and is the largest in the state. Their Master of Science degree program is ranked as one of the top 10 hospitality and tourism graduate programs in the country. To support its burgeoning enrollment, CCHM built the LEED Gold-certified Building 80, named the Marriott Learning Center, on their campus in Pomona, California. It is an embodiment of the college's dedication to advancing the field of hospitality management through their collaborative approach, appreciation of diversity, and strategic blending of instruction and active learning using technology. Expert integration firm, ClearTech Media of Altadena, CA, was brought in to actualize their vision.

“When we were considering what to put into this state-of-the-art facility, we already knew we wanted the latest technology in a very collaborative and flexible environment,” says Lea Dopson, Dean at Collins College. “The AV systems in the Marriott Learning Center offer a lot of options and opportunities for faculty and students to interact in the classroom.”

ClearTech worked closely with the college, integrating a wide variety of AV systems that used solutions from Extron, including DTP® and XTP Systems®, ShareLink™ wireless collaboration gateways, DMP Series audio processors, and TouchLink® Pro control systems. “The Collins College of Hospitality Management expansion project is a consummate example of how AV systems can transform collaboration in today's learning environments,” says Christina De Bono, Principal and President at ClearTech Media. “We equipped Cal Poly's Marriott Learning Center with Extron



**Extron Electronics**  
INTERFACING, SWITCHING AND CONTROL

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The XTP CrossPoint 1600 matrix switcher provides flexible signal routing to support the divisible space when configured as a single auditorium or as two independent lecture halls.

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### The Marriot Learning Center

According to Chi Kwan Fong, Facilities Management Project Manager at Cal Poly Pomona, Building 80 is designed to be a supportive learning environment in hospitality management through the use of natural lighting, open spaces, and advanced technologies. The new 12,100 square foot facility provides a variety of technology-rich teaching rooms along with comfortable open spaces. It includes two lecture halls, a videoconferencing suite, graduate and group study rooms, and a variety of meeting rooms. For social gatherings, courtyards offer vistas of the surrounding rolling hills while the grab 'n' go café, Student Commons, and various lounges feature campus-related content and entertainment on flat panel displays. Each area has a dedicated AV system with distinctive capabilities.

### XTP System Supports Divisible Lecture Halls

The Freeberg Foundation lecture area consists of one large room, which can be separated by an air wall. It can be configured as an auditorium seating 96 or as two independent lecture halls.

For proof of AV design concept, ClearTech set up field trips to see a variety of AV systems in similar environments and real-world applications, as well as arranged conversations with other administrators who had AV technology designed into their spaces. This helped the decision makers choose an Extron XTP® system for their divisible space.

Each lecture hall includes a two-bay multimedia credenza. The unit in Room 73-1202 houses an Extron XTP CrossPoint 1600 matrix switcher, a resident computer, and a Sony® Blu-ray® player, while the credenza in Room 73-1212 holds another resident computer and Blu-ray player, plus the sound system. The modular XTP CrossPoint® matrix switcher is populated with a combination of XTP HDMI and twisted pair input and output boards for local and remote signal extension in any room configuration. "Everyone was impressed with all that can be accomplished with the XTP CrossPoint matrix switcher," says De Bono.



The display system includes six Epson short-throw projectors paired with panoramic IDEA interactive whiteboards that also serve as screens. ClearTech specified Extron XTP R HDMI receivers to support the six projectors. In addition to AV signals, these receivers accept RS-232 signals from the control system, enabling remote control of the projectors from within a lecture hall or from the control room. The ability to send control over the same twisted pair cable as video and audio greatly minimized cabling throughout the space.

An Extron Hideaway HSA 300 enclosure mounted into the top of each credenza provides convenient network connectivity along with access ports for HDMI, VGA, and stereo audio source devices. It also offers USB and AC power for portable devices brought in by staff members or students. The HSA 300 on the credenza is closed when not in use, presenting a flat surface for the instructor. The Hideaway enclosure in Room 73-1202 is connected directly to the matrix switcher, and the HSA 300 in the other room is supported over XTP.

The XTP T USW 103 reduced the number of products needed in the credenza by accommodating up to three different sources at a time. Two Extron XTP T UWP 202 wallplate transmitters were used to enable convenient placement of source devices and enhance the flexibility of the space. Together, the credenza-mounted and wallplate transmitters



TLP Pro 1020M 10" TouchLink Pro touchpanels are mounted on the front and back walls of each lecture hall, allowing the instructor to move about the room.



An Extron IN1608 scaling switcher in each Instructional Support room enables easy signal routing from a wide variety of sources.



provide automatic unmanaged switching between connected HDMI and VGA sources. To further simplify integration, the XTP CrossPoint matrix switcher provides remote power to the twisted pair XTP extenders over the same CATx cable.

An Extron DisplayPort output adapter enables connection of each room's resident computer to the matrix switcher, and the same XTP CP 4i HDMI input board accepts the computer's analog audio signals for independent switching to the sound system. The sound system consists of an Extron DMP 128 audio processor, two Extron amplifiers, and twelve ceiling speakers. The processor provides key audio functions, including mixing of wired and wireless microphones along with program audio, equalization, and tone control. The DMP 128 feeds both Extron XPA 2001-70 amplifiers, with one unit dedicated to each room's six speakers. It also provides complete audio processing and distribution when the space is configured as an auditorium.

Four Extron TLP Pro 1020M 10" Wall Mount TouchLink Pro touchpanels enable AV system control in any room configuration. They are positioned so that when the space is divided into separate lecture facilities, a touchpanel is available at the front of the room and another is at the back. This design allows the instructor the freedom to move around the room while maintaining presentation control. Each TouchLink Pro touchpanel is configured to operate the local AV sources and display devices, as well as access shared resources. A built-in light sensor adjusts screen brightness as the ambient room lighting changes. To conserve power, the touchpanel's adjustable sleep timer puts the unit to sleep when not in operation, which fits well with the college's energy saving goals.

The design team chose the Extron IPCP Pro 550 control processor for its versatility and suitability to support large divisible spaces. Aside from being more powerful than its predecessors, the IPCP Pro Series features advanced security standards, Gigabit Ethernet, and a variety and quantity of connectors that ensure the control system can expand as needed. The control processor includes Extron LinkLicense®, which enables AV system control using a mobile device loaded with the Extron Control app. "The flexibility of the Extron control system is

fabulous; the instructor can use the touchpanel, or their iPad or Android tablet or phone, to turn on and off any combination of projectors and the Blu-ray player, as well as control the presentation, without needing assistance," says Andrew Naranjo, Project Manager at CCHM.

### IN1608 Provides Right-sized Switching and Scaling for Instructional Support Rooms

The Instructional Support rooms are designed for graduate studies, and called for a switcher that could support fast and reliable source switching of various video formats from local and portable sources. The Extron IN1608 scaling presentation switcher with DTP® extension provided this, as well as offered a high-performance scaling engine, two mic/line inputs with phantom power for the microphone system, and an Ethernet port for access to the LAN. An Extron TLP Pro 1020M TouchLink Pro touchpanel mounted near the door is supported from the IP Link® control processor built into the IN1608.

"We're well versed in the capabilities built into the IN1608 switcher, and we knew it would be a great fit for the graduate rooms at Collins College," says De Bono. "The IN1608 has everything we needed for video signal scaling and routing, and even provided the necessary audio processing. The built-in audio processor gave us complete control of audio adjustments, without having to use any additional products."

Signal transmission within these smaller rooms is similar to that of the lecture halls, using the Extron DTP T UWP 232 D two-input decorator-style wallplate transmitter to extend AV and control signals 230 feet (70 meters) over the twisted pair infrastructure. A DTP HDMI 4K 230 Rx receiver mounted above the Epson BrightLink interactive projectors accepts video signals for projection onto a Da-Lite IDEA panoramic whiteboard presentation screen. The IN1608 in each room is used to send power to each of the DTP transmitters and receivers over the same shielded CATx cable used to transmit video and audio signals.

An Extron DMP 64 audio DSP processor provides the same high-performance signal processing for program audio and microphone feeds as the larger model used in the lecture halls. It feeds four Extron

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SI 26CT two-way ceiling speakers with a built-in transformer. ClearTech and the college concluded that the compact audio processor met all their needs and was the right size for the very busy Instructional Support rooms. The scaling switcher, local resources, and sound system are housed within an enclosed AV rack in the corner. Conference rooms have a similar design to the Instructional Support rooms, using the same selection of AV equipment with the addition of Extron USB PowerPlate 200 Series two-outlet USB chargers.

### ShareLink Empowers Collaborative Group Studies

Group Study rooms are available to staff, graduates, and undergraduates. The requirements for these spaces were unique in the building, and included support of 4K video signal input and distribution, wireless collaboration, and an interactive flat panel display that could slide vertically on the wall to allow a student in a wheelchair to annotate displayed material. The need to support video input and output resolutions up to 4K was easily solved with the integration of Extron DTP HDMI 4K 230 extenders, and a MantelMount® bracket allowed vertical movement of the Sharp® interactive flat panel display.

For group project development and other collaborative efforts between locations, the design team chose Extron's ShareLink 200 Wireless Collaboration Gateway. It supports content from a Windows® or OS X® computer as well as Apple® and Android® smartphones and tablets. The technology provides simultaneous display of presentations, images, documents, and other content from up to four different personal devices in four windows, simultaneously. This capability eliminated the need for a student to constantly change sources during a group session. Content from a single device shows full screen by default. If an instructor is using the room, a moderator mode locks out other devices until they grant access on an individual basis. The videoconferencing room also includes a ShareLink 200 for collaboration between faculty and the college's industry partners.

For system control, an Extron MLC 62 MediaLink® wallplate controller is mounted close to the display. Control options include powering and operating the display, setting the presentation volume, and triggering the room's Williams Sound assistive listening system. To ensure students with limited English language skills can easily operate the AV system, Extron decorator-style wallplate controllers are also used in the Student Commons and lounge areas. Either an MLC 64 RS VC D model with volume control knob or the VCM 200 D with volume and muting control enables operation of the local Sharp full HD display with built-in tuner, and include controls for changing channels, adjusting the volume, and activating closed captioning. The function of the space determined which controller model was installed.



Group Study rooms provide a sliding display and a ShareLink 200 collaboration gateway to create a truly flexible environment.

### Collaborative Success

Project Managers, Chi Kwan Fong and Andrew Naranjo, originally identified five major project areas: technology, schedule, coordination, support, and cost. Time turned out to be a top challenge, an accelerated schedule that required that all phases from design through commissioning needed to be accomplished in only seven months. "This \$10 million campus addition, funded entirely by private donations, fosters the success of our students and serves as a center of excellence that houses the college's top-ranking master's program. We are extremely pleased that ClearTech Media was able to complete the AV in this state-of-the-art facility on budget and on time," says Dean Dopson.

Extron engineers worked hand-in-hand with ClearTech to ensure that everything was functioning properly for the grand opening and ribbon-cutting ceremony in November, 2015. According to Christine De Bono of ClearTech Media, Extron's support team and the cooperation between all parties involved in the project resulted in a very successful collaboration at Cal Poly Pomona's Collins College.

The new Building 80 enabled Collins College to increase its capacity to educate a diverse ethnic and economic cross section of the population, allowing students to learn to apply hospitality management theories and concepts to research and real-world applications. The Marriott Learning Center is helping the college meet the growing employment demands of the multibillion-dollar hospitality industry. "If our graduates are to continue to be in high demand as they are now, they need to have access to the best learning environment we can offer," summarizes Soraya M. Coley, University President at Collins College. "The Marriott Learning Center with its high-performance AV systems is that environment."

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