



## Extron AV Switching, Sound, and Control Systems Empower Collaborative Learning at Flintridge Prep

“The Bachmann Collaboration Building is a laboratory for experimentation, but its technology needed to be vetted, reliable, and proven practical, so we went with products and solutions from Extron.”

**Christina De Bono**  
Principal and President  
ClearTech Media

### Challenges

Flintridge Preparatory School in Southern California is recognized as one of the top 25 private preparatory schools in the US. Serving grade levels 7-12, the school instills leadership skills and deeper understanding across multiple disciplines. Their classrooms, labs, studios, workshops, and study spaces are enhanced with professional-grade AV systems and students use their personal mobile devices for interactive cooperation. The new Bachmann Collaboration Building is modeled on this concept.

To facilitate creativity and team-based problem solving, each learning and meeting space in the new building needed a reliable, high-performance yet economical AV presentation system with intuitive system control. The administration brought in ClearTech Media to deploy AV switching, audio, and control products from Extron.

### Design Solution

The new three-story building adds 17,500 square feet of instructional space to the Flintridge Prep campus with a concentration on science, technology, engineering, the arts, and mathematics, collectively known as STEAM. Smart technologies support the school's emphasis on collaboration with peers and tie together the many resources into complete AV presentation systems.



To facilitate collaboration within each classroom as well as the meeting rooms, the design team chose Extron scaling presentation switchers, DTP extenders, SoundField speakers, and Pro Series or MediaLink Plus control products.

One or more large screen displays are installed to match the size and function of each space. These include an Epson® BrightLink® interactive projector with a Da-Lite® IDEA™ whiteboard screen and one or more Samsung® Flip 2 65" interactive 4K LCD displays. Source signals originate from computers, Apple® TV, campus-standard media products, and connected HDMI, USB, and network devices. Sources and AV equipment are rack-mounted within the room. They occupy less than half of the wood-finished 20 RU rack, providing open shelving as landing space for a laptop, mobile devices, and hardcopy reference materials.

To enable flexible AV capability within each room, the design team chose Extron scaling presentation switchers, DTP® Series transmitters and receivers, SoundField® speakers, and Pro Series or MediaLink® Plus control products.

### Extron High Performance AV Switching & Distribution over Economical CATx Cable

The Extron presentation switchers distribute the desired signals to each display and scale the images to match the native resolution of each display device. The integrated Vector™ 4K scaling engine plus EDID management and HDCP-compliant technologies provide the essential

fast switching and optimal display of source content required in the Bachman Collaboration Building.

Rooms such as Maker Space 102, Meeting Room 202, and Classroom 306 have an AV system built around the IN1806 4K/60 presentation switcher. The switcher's two DTP inputs and the DTP2 output provide location flexibility for source and display devices, extending HDMI, audio, and control signals over one CATx cable. In addition to the DTP2 output, two HDMI outputs support the Miracast™ and lecture capture systems simultaneously.

Teachers and students alike are able to create polished presentations with animated slides, logo keying, and stylized transitions between slides to hone their professional skills. Content is sent to a DTP receiver mounted with each display device. This Extron receiver had already proven reliable across campus, and its sturdy 1" high enclosure fit easily above projectors and behind displays. A DTP four-input HDMI switcher with integrated DTP transmitter is mounted under or within the furniture to provide local switching at tables, lecterns, and workstations. It is mounted discreetly beneath the table surface or within the furniture. Automatic switching among the active sources streamlines operation.





For AV system control, an Extron TLP Pro 725C TouchLink Pro Touchpanel with a custom GUI is mounted on the surface of the lectern or table.

Within the larger spaces such as the Student Leadership Meeting Room and Global Research Classroom 207, the Extron IN1808 eight-input scaling presentation switcher with a DTP2 output provides routing of AV and control signals. Ethernet ports enable comprehensive control of the endpoints and attached devices without needing additional equipment. It provides analog inputs for legacy devices. It also includes two mic/line inputs with mixing, built-in audio switching, and other audio processing features. Microphone ducking is automatic, which further streamlined AV system operation.

### Extron Ceiling & Sound Bar Speakers Enhance Communication and Collaboration

The sound reinforcement system consists of Extron speakers in a variety of form factors to suit the different environments. The speaker type and quantity depended on ceiling construction, room size, and usage. ClearTech integrated Extron SF 26PT pendant speakers in rooms with tall ceilings, such as Maker Space 102, Art Studio 104, and Classroom 306. This unobtrusive speaker that resembles a modern light fixture has 92° conical dispersion and a two-way design. It ensures exceptional audio quality throughout the room and without beaming. Extron SF 228T speakers that resemble a ceiling tile vent were installed in rooms with suspended ceilings. Its 8" woofer and 1" silk dome tweeter ensure high quality reproduction for speech and program audio. To ease tense group dynamics, the teacher can play high fidelity music as a momentary distraction and calming tool.

In meeting spaces such as Meeting Room 203 and Teacher Meeting Room 303, an Extron SB 33 A sound bar speaker designed specifically for collaboration spaces supports audio, and its center panel accommodates the videoconferencing camera. The integrated ENERGY STAR®-qualified Class D amplifier reduced system complexity. The sound bar is mounted under the main display, and the speaker's adjustable width is set to match the width of the display for a custom look.



The TLP Pro 725C Cable Cubby enclosure has a 7" TouchLink Pro touchpanel on the underside of its lid. ClearTech installed modules for AV connectivity and power.

### Extron Control Products Provide User-Friendly System Operation for Teachers and Students

Flintridge Prep required intuitive, responsive AV system control so as not to stymie student creativity or bog down interactions. The design team chose the Extron IPCP Pro 350 xi control processor that works in conjunction with an Extron TouchLink® Pro touchpanel and MediaLink Plus controllers. This combination of products enables easy management of system power, source selection, and volume. The multiple serial ports on the processor provide interfacing with the other devices, and the four relays facilitate operation of the motorized projection screen. AV connectivity is available with AAP™ modules that also offer AC and USB power.

For touch control of a room's AV system, an Extron TLP Pro 725C is mounted at the instructor lectern or embedded into the top surface of the equipment rack. A 7" touchscreen integrated into its Cable Cubby® enclosure lid provides convenient access to an intuitive AV system control user interface, ensuring easy operation for all users. The enclosure also provides convenient AV and power connectivity for BYOD devices. Each student workstation includes an Extron MLC Plus 200 controller that facilitates source selection and operation of the associated display.

### Results

Flintridge Prep's new \$14.2 m Bachmann Collaboration Building with learning and meeting spaces outfitted with high-performance AV systems have proven to be quite successful. The environments not only facilitate collaboration but stimulate innovation among the students. The rooms with Extron products and technologies empower students to learn and combine their skills, talents, ideas, and resourcefulness as a team. This facility ensures that Flintridge Prep graduates are well prepared for leadership roles across a vast array of STEAM-related fields and organizations.



The new Bachmann Collaboration Building at Flintridge Preparatory School is a landmark edifice that facilitates learning using technology to instill leadership skills and deeper understanding across multiple disciplines.

Extron Equipment - Partial List

Model	Description
IN1608 xi	Eight Input HDCP-Compliant Scaling Presentation Switcher with DTP® Extension
IN1806	Six Input 4K/60 Seamless Presentation Switcher
DTP T SW4 HD 4K	Four Input HDMI Switcher with Integrated DTP Transmitter
DTP HDMI 4K 230 Rx	HDMI Twisted Pair Receiver
SF 26PT	SoundField® 6.5" Two-Way Pendant Speaker
SF 228T Plus	Two-Way SoundField Ceiling Tile Speakers with 8" Woofer and 70/100 V Transformer
SB 33 A	Adjustable Width Sound Bar for 55" to 65" Displays
TLP Pro 725C	Cable Cubby® with 7" TouchLink® Pro Touchpanel
MLC Plus 200	MediaLink® Plus Controller
IPCP Pro 350 xi	IPCP Pro xi Control Processor
AC+USB 224	Cable Cubby Power Module with AC and USB Outlets