

# MODERN JUSTICE

GARDNER KS'

NEW

JUSTICE

CENTER

INCLUDES PD,

MUNICIPAL

COURT

AND EOC/  
COMMUNITY

ROOM.

BY JIM STOKES

“Tumbledown” describes a starry-eyed image of classic western Kansas, replete with tumbleweed and ghost towns. However, it also speaks of decay and a great need for rebuilding. Meeting that need is a new Justice Center in Gardner KS, located in the Kansas City KS metropolitan area, where 54 years had taken their toll on the local police-department building. (Incidentally, it’s worth noting that Gardner happens to have national historic significance dating back to the wagon trails of the old west. For more on that, read the sidebar entitled, “Where the Trails Divide.”)

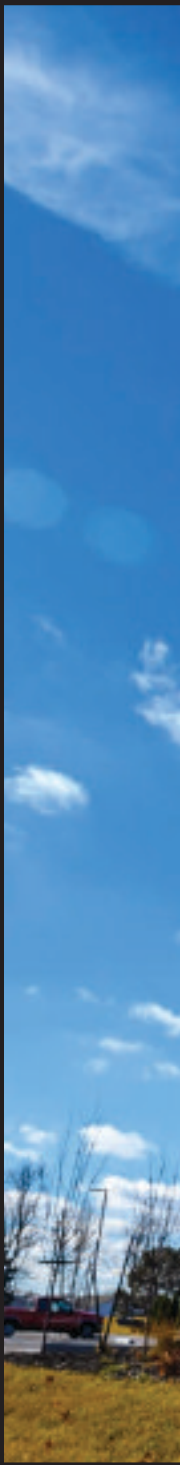
Locally, the new Gardner Justice Center is also historic. This from-the-ground-up, 33,000-square-foot, one-story facility was built in summer 2019 on seven-and-a-half acres; the construction cost was \$13.7 million. The multi-purpose Justice Center houses the police department; the emergency operations center (EOC) and community room, which are functions of the police department; and the municipal court.

We’ll be detailing audiovisual technologies installed in three major areas—the EOC, courtroom and lobby—while also looking at AV equipment supplied by the client to serve the police department and other functions. Nathan York, Director of Audio Visual Systems, Progressive Electronics, Inc. (PEI), which is located in Raytown MO, is our guide.

Credits for the integrator project team are as follows: Jack Anderson, Field Manager, oversaw the physical install and handled all construction coordination. Michael Pinckard was the programmer who wrote all the Crestron code. Eric EuDaly, Application Specialist, wrote the digital signal processing (DSP) code and handled all the commissioning, testing, training and troubleshooting. “In short,” York declared, “Eric was the brains that made everything actually work together.” Turner Construction, of Kansas City, was the general contractor. Kyle Gardner was Project Manager for Turner Construction.

Before we get neck deep in the AV technology, let’s get the back-story on the Justice Center from Captain Lee Krout, Administration Division Commander with the Gardner Police Department. According to Krout, before the new facility, the police department and courtroom were not housed together. What’s more, Gardner had never had a designated EOC area. So, this project was rather momentous in its scope. Krout was heavily involved, including in the AV design.

“Court was actually at City Hall,” Krout recalled. “They used the city council chamber for a courtroom. That building was a little newer than ours was. [But]





An exterior view of the new Gardner Justice Center, along with a plaque that marks its dedication and key project contributors.



## ‘Where The Trails Divide’

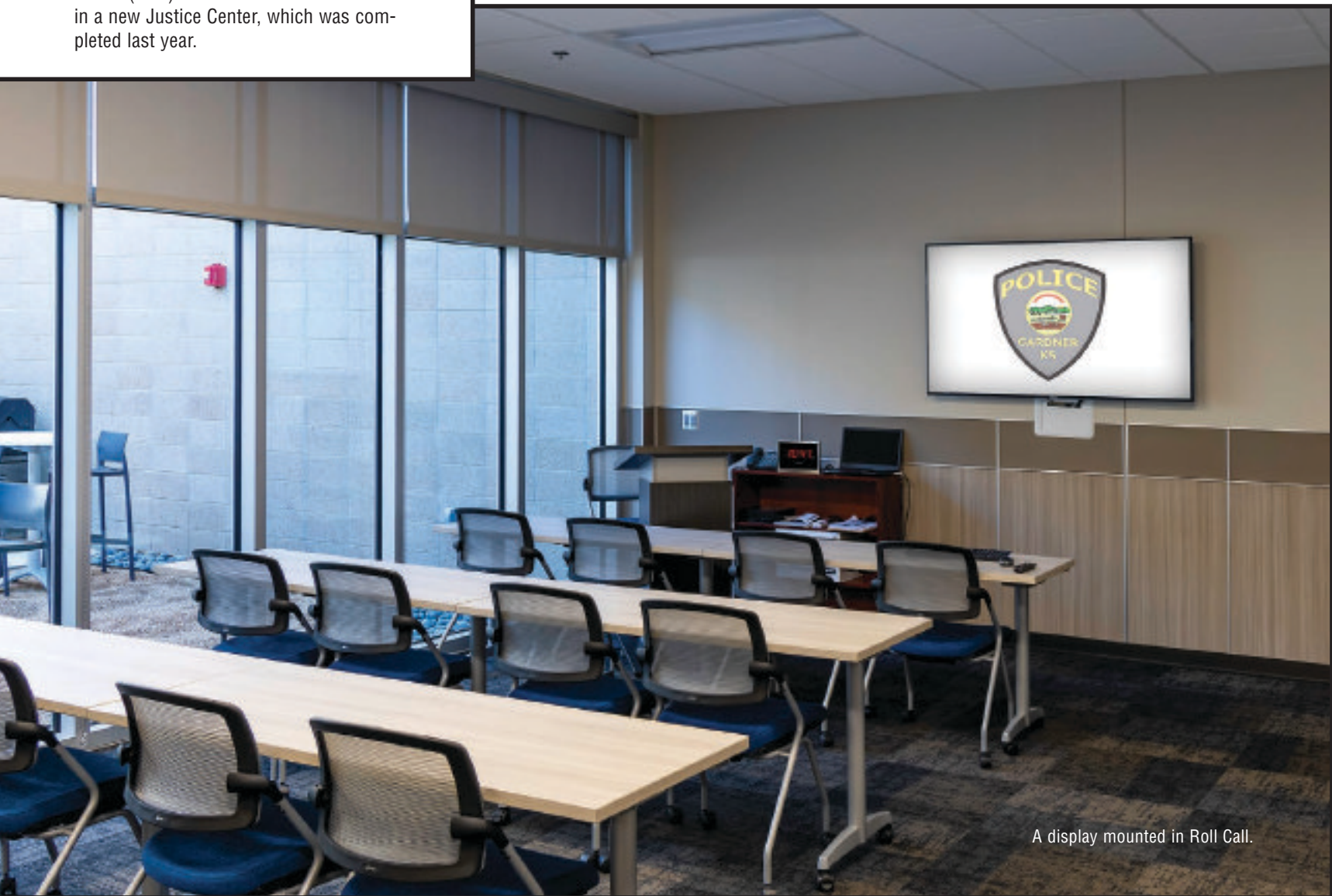
Located in Kansas’ Johnson County, Gardner KS was founded in 1857 where the Santa Fe Trail and the California/Oregon Trails divided. The Santa Fe Trail takes a south-westerly route; meanwhile, a sign tacked to a tree, which simply reads, “To Oregon,” allows those going to the Beaver State to head in a northwesterly direction. Hence, the town nickname, “Where the Trails Divide.” The combined Oregon/California Trails wend their way over prairie, valleys and waterways until ultimately splitting in the present-day Mountain West. The trails’ division is of national historic significance, and it’s honored at the Gardner Junction Park site, which was dedicated in 2008. It’s located just west of the city, along US Highway 36. Today, Gardner has a population that exceeds 19,000. It was originally settled primarily by those emigrating from Massachusetts. Relevant to this article, it took 54 years for the police department, emergency operations center (EOC) and courtroom to be combined in a new Justice Center, which was completed last year.

they had to share space with somebody else, [and] so, the design of the room was not functional for what they needed.”

“On the police side,” Krout continued, “our old, standalone building was built in 1965 as a ConTel [phone company] building. It was never designed to be a police station. It had been retrofitted numerous times with walls either [being] put up or [being] taken down to make offices come and go. We had no secure detention facility. We were sharing a great number of spaces. As an example, our detention center, roll call and report taking were all in the same room. So, if you had a prisoner who was being processed, you couldn’t do roll call at the same time because we were all in the same room!”

Limited desk space also put officers in a tough spot. The six road (patrol) supervisors—a group composed of three corporals and three sergeants—shared one small office with two desks. It was also close quarters for three detectives in another small office. “They literally couldn’t slide their chairs back at the same time without running into each other,” Krout recounted. Meanwhile, the city of Gardner had a growth spurt 10 to 15 years ago, because of which there was nowhere left to park in the parking lot. In fact, police officers had to park across the highway that ran in front of the old building just to get to work!

The old police station had only a wire cage in one of the rooms for a jail. As a municipal agency, the police department did not hold anyone overnight. (Johnson County has two other jails for longer-term incarceration.) According to Krout, “We designed three holding cells in the new building, [and they] are more secure and safe.”



A display mounted in Roll Call.

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THE VISIONARIES CHOICE  
Top image courtesy Ron Baker Photography

## Progressive Electronics, Inc.

Established in 1978, Progressive Electronics, Inc. (PEI), based in Raytown MO, is the work of Founder Craig Metzler and his son, Chris. While in the US Navy, Metzler served as an electronic technician aboard a nuclear submarine. Once back in civilian life, he founded PEI and put his experience to work. Today, PEI delivers advanced audiovisual, security and life-safety systems for both private-sector and public-sector entities, spanning from education facilities to corporations, and from military installations to entertainment venues. In its 40 years, PEI has maintained a family-run culture, employing more than 60 people, many of whom have been with the company for a decade or more. Chris Metzler has worked alongside his dad for much of the company's history and, now, he serves as President.

### Ground-Up Design

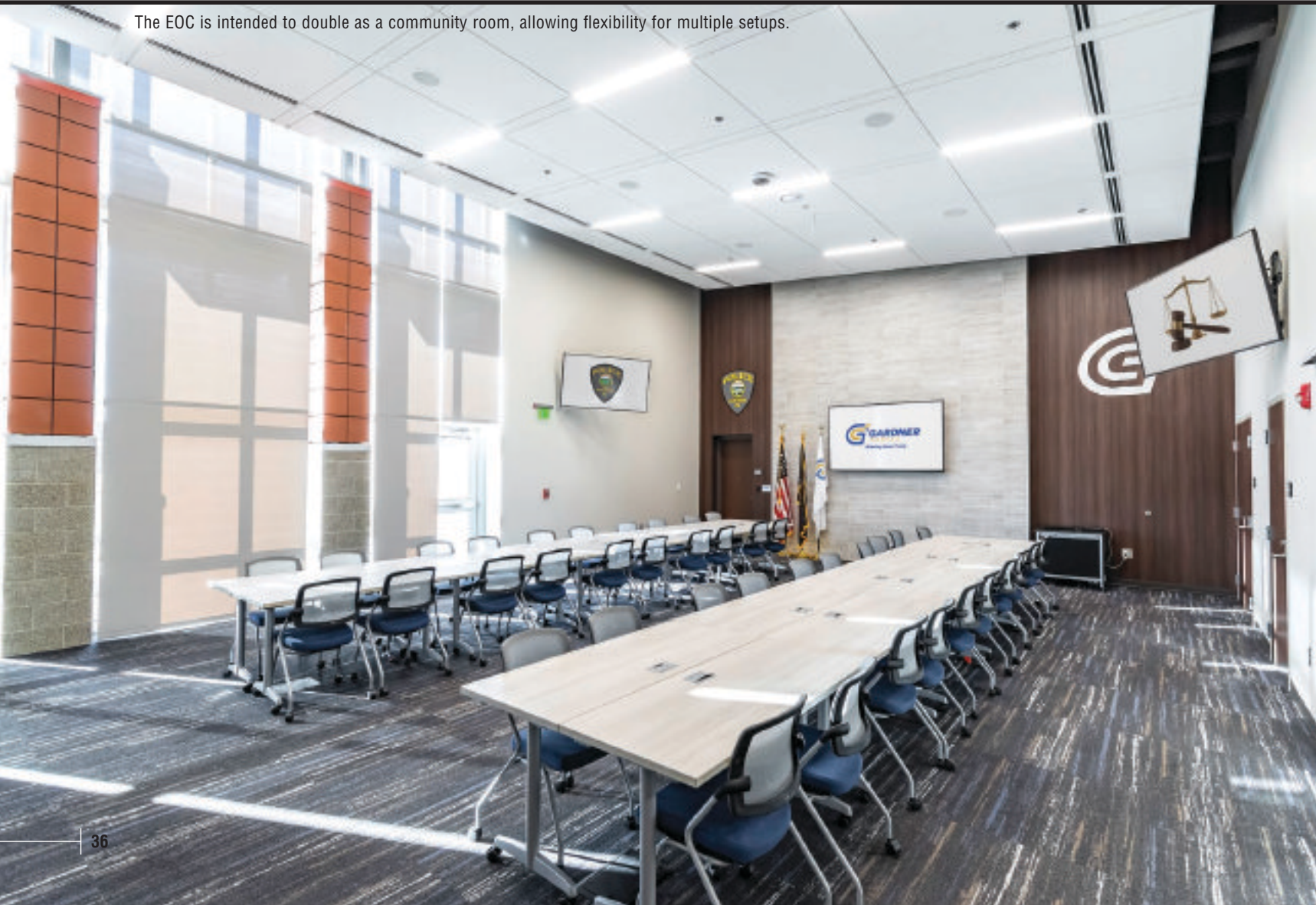
"We were asked to design the building from the ground up," Krout explained. "The emergency operations center is a hardened room with concrete block walls and a rebar roof. So, it's not just for us. If we have a severe-weather event here in Kansas, which is part of tornado alley, it's a designated shelter for civilians and citizens to be able to come to." The project team designed the building so that everything is on one level in various discrete suites.

For example, court business is handled in one area of the building. Police administration is the bailiwick of Krout and another captain. Then, there are suites for police investigators, records, patrol officers, detention and more. No more desk-sharing in cramped rooms! Moreover, the suites are interconnected for easy traveling throughout the Justice Center.

In the old building, AV consisted of several TVs in the back rooms for in-house training. "We could cram a few of us into a room," Krout recalled. There was no real, extensive audiovisual implementation, though. He continued, "We could use a laptop for a Power-Point. If we needed a network connection, we ran some wire and stapled it to the wall. We just didn't have any other way of doing it." Krout noted that, when you're dealing with older buildings, it can be sad to bid them farewell. However, practical needs relating to functionality and efficiency outweigh any pangs of nostalgia. What's more, it was essential that Gardner be able to connect with databases such as the National Crime Information Center (NCIC).

The EOC, which is administered by the police department, has a dedicated room that will hold 40 people comfortably across five rows of tables. Nathan York of PEI explained, "The scope of this system was to be able to view the courtroom; provide local reinforcement for events such as training; and have the ability to view multiple sources, including live TV, during emergencies. This also included recording/streaming." He continued, "It

The EOC is intended to double as a community room, allowing flexibility for multiple setups.



made sense to put it all on one big matrix—a Crestron 32x32 matrix switcher/router. The Crestron CP3 control processor is the core ‘brain’ of the networked system.”

### Keep Things Similar

PEI’s operative concept was to keep things similar between rooms, adding and dropping a few features to make it easier for users. Consequently, there are similarities (and a few differences) in equipment and its use between the courtroom and the EOC systems. A Middle Atlantic equipment rack is housed in the server/IT room, which is located halfway between the EOC and the courtroom, marking a metaphorical bridge between the spaces.

Regarding AV in the EOC, the room has multiple inputs. Three Contemporary Research TV tuners in the rack serve the rest of the Justice Center, as well. “They have an over-the-air antenna on top of the building,” York remarked. “The Justice Center wanted to display multiple channels of local news for emergency purposes. [It’s not] only to route to multiple displays, but also

to a multi-window processor so they can have multiple channels on one display for a grid view.”

Ably serving the Justice Center is Crestron’s HD-WP-4K-401-C multi-window video processor. In the EOC, there are three Crestron DM-RMC-SCALER-C receivers and display controllers for viewing content on three Panasonic commercial displays held in place by Chief tilting and articulating mounts. Turning to the displays, there’s a large 84-inch screen for grid views. For flexibility, that screen, along with the two additional (65-inch) screens, can be switched to view the same source or to draw from separate inputs (*e.g.*, courtroom feed, laptop output). Access is via a wall-mounted Crestron seven-inch touchpanel. There’s iPad control, too, and that can be used throughout the EOC.

The Justice Center is well equipped to handle streaming content. A pair of Extron SMP 351 streaming media processors in the rack serves those needs. Using the rack’s 10-inch Crestron touchpanel, video can be routed to either the

courtroom or the EOC. There’s also the option to stream to a website. “Those units will do picture-in-picture (PiP), as well,” York affirmed. “Using the Extron unit’s two inputs, one could have the courtroom camera on the main display and the other input would have PiP showing the evidence on a laptop.” There is one streamer for the EOC and one for the courtroom, and they run independently.

A Panasonic pan-tilt-zoom (PTZ) camera with a Vaddio wall-mount bracket can be used during training sessions. The presenter has a choice of Audio-Technica lavalier, headset or handheld wireless microphones, which terminate in the Audio-Technica antenna distribution system in the rack and which are dispersed via a Shure UA8 omnidirectional antenna. York noted that PEI is a partner of QSC’s and enjoys working with the company. Therefore, the rack is populated with a Q-SYS Core 110f processor, I/O-8 Flex channel expander and SPA4-100 four-channel amplifier, along with 12 six-inch QSC ceiling speakers in the courtroom. For additional

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## Multi-Faceted EOC For Training & Community Use

The EOC is used by the police department for training, and it functions as a communal gathering place and shelter during emergencies like tornadoes. However, the EOC is also used extensively for a variety of community activities.

According to Krout, in addition to the police department's internal training initiatives, other agencies are coming to the EOC. "We've already begun hosting training classes where we're bringing in people from other agencies all over the state," he said. "They come to our building to be trained, instead of our officers going out [to them]. We've hosted, most recently, some training classes that were sponsored by the Federal Law Enforcement Training Center (FLETC), based in Glynco GA. Their instructors come to our building and utilize our facility because it's laid out so nicely." Krout continued, "Quite honestly, we're very proud of this building. We're more than happy to share information because we're happy with [our space]."

Non-law-enforcement personnel using the facility include the Boy Scouts of America, the Girl Scouts of America and senior citizens groups; in addition, numerous city meetings occur there.

In summary, Krout pointed out that the EOC was designed so that there would be more places in Gardner for events and meetings to be held. Sounds like the designers got their wish!

connectivity, both the EOC and the courtroom boast RDL D-CIJ3 consumer input jacks.

### Smart Displays Throughout

Client-furnished 55-inch Samsung Smart TVs, which are mounted on low-profile, fixed, Americans with Disabilities Act (ADA)-compliant Chief mounts, are located in other areas throughout the Justice Center. Regarding the ancillary areas, PEI installed and provided TV feeds to the owner-furnished displays. Offices getting the displays include those of the chief and Krout, as well as the other captain's office. All the conference rooms have them, as well.

"They're all set up to run off a laptop to [populate content onto] the display," Krout said. "We purposely went with a TV monitor, instead of projectors, mainly due to display quality." He explained that, when project leaders did research, they determined that ceiling-mounted projectors and those set on desks that project onto the wall often end up with brightness difficulties or impaired image quality. "So," Krout continued, "we purposely went with good-quality 4K Smart TVs...."

Krout noted that the police department primarily uses the EOC for training purposes. "We've had numerous officers in our department sent to be trainers," he stated. "They're capable of teaching different things to people. Before, at the old station, we weren't able to do that because we didn't have the space or the equipment."

### Common Equipment

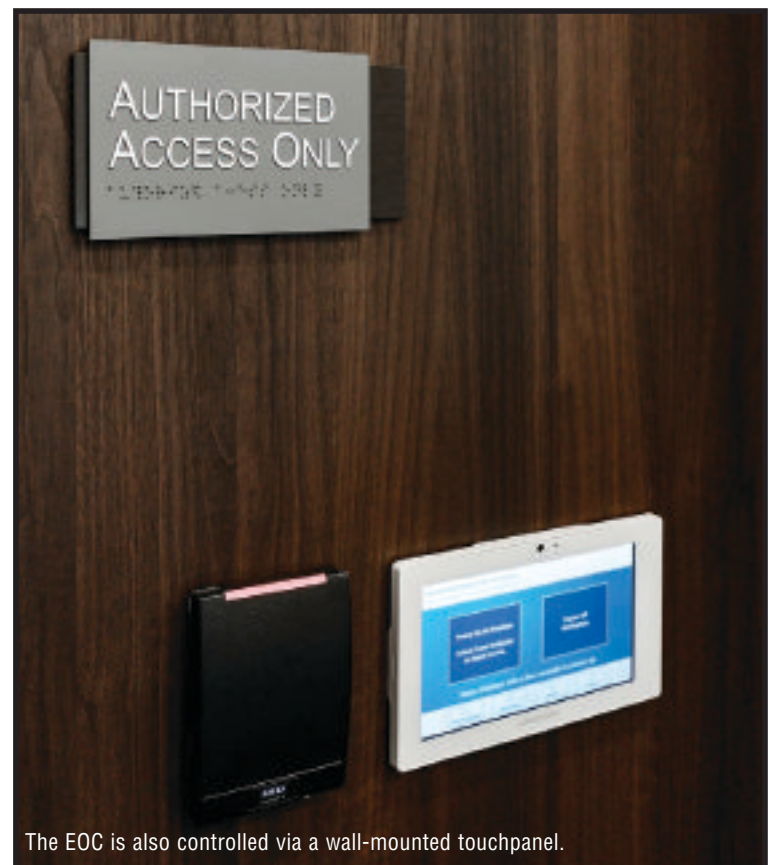
The courtroom and the EOC have common equipment, such as matrix routing/switching to deliver 4K resolution over Cat6 cabling, wireless systems, DSP, speakers, amplifiers, monitors



Wireless system control can be achieved via the Crestron iPad app.



The lobby is controlled via a wall-mounted Crestron touchpanel.



The EOC is also controlled via a wall-mounted touchpanel.

# EQUIPMENT

## CLERK

- 1 Crestron DM-TX-4K-100-C-1G wallplate 4K DigitalMedia 8G+ transmitter
- 1 Crestron TSW-760 7" touchscreen

## COURTROOM

- 1 Audio-Technica AT831cH cardioid condenser lavalier mic
- 1 Audio-Technica AT8631 joining plate
- 1 Audio-Technica ATW-3211/892 3000 Series bodypack system w/BP892cH
- 1 Audio-Technica ATW-3212/C510 3000 Series handheld system w/ATW-C510
- 4 Audio-Technica ES915C12 cardioid condenser gooseneck mics
- 4 Audio-Technica ES933C cardioid condenser hanging mics
- 4 Chief FSB018BLK small flatpanel table stands
- 1 Chief RXT2 x-large FIT tilt wall mount
- 2 Chief TS325TU medium THINSTALL dual swing arm wall display mounts
- 7 Crestron DM-DGE-200-C digital graphics engines w/4K DM 8G+ inputs
- 1 Crestron DM-RMC-4K-100-C-1G wallplate 4K DigitalMedia 8G+ receiver and room controller
- 6 Crestron DM-TX-4K-100-C-1G wallplate 4K DigitalMedia 8G+ transmitters
- 4 Crestron TSD-2220 21.5" HD touchscreen displays
- 1 Panasonic AW-HE40H HD professional PTZ camera (HDMI)
- 3 Panasonic TH-65EF1U 65"-class full HD LCD displays
- 12 QSC AD-C6T AcousticDesign 6.5" 2-way ceiling speakers
- 1 RDL D-A2 line output assembly (white)
- 2 RDL D-CIJ3 consumer input jacks (mono, white/gray)
- 2 Shure UA8 1/2 wave dipole antennas
- 1 Vaddio 535-2000-243 thin-profile wall-mount bracket

## EOC

- 1 Audio-Technica AT831cH cardioid condenser lavalier mic
- 1 Audio-Technica AT8631 joining plate
- 1 Audio-Technica ATW-3211/892-TH 3000 Series bodypack system w/BP892cH-TH
- 1 Audio-Technica ATW-3212/C510 3000 Series handheld system w/ATW-C510
- 1 Chief RXT2 x-large FIT tilt wall mount
- 2 Chief TS325TU medium THINSTALL dual swing arm wall display mounts
- 3 Crestron DM-RMC-SCALER-C DigitalMedia 8G+ receivers and room controllers w/scalers
- 6 Crestron DM-TX-4K-100-C-1G wallplate 4K DigitalMedia 8G+ transmitters
- 1 Crestron TSW-760 7" touchscreen
- 1 Panasonic AW-HE40H HD professional PTZ camera (HDMI)
- 2 Panasonic TH-65EF1U 65"-class full-HD LCD displays
- 1 Panasonic TH-84EF1U 84"-class full-HD LCD display
- 8 QSC AD-C6T AcousticDesign 6.5" 2-way ceiling speakers
- 2 RDL D-CIJ3 consumer input jacks (mono, white/gray)
- 2 Shure UA8 1/2 wave dipole antennas
- 1 Vaddio 535-2000-243 thin-profile wall-mount bracket

## LOBBY

- 1 Chief TS325TU medium THINSTALL dual swing arm wall display mount
- 1 Crestron DM-RMC-SCALER-C DigitalMedia 8G+ receiver and room controller w/scaler
- 1 Leon Speakers side-mount speaker pair
- 1 Leon Speakers side-mount bracket pair
- 1 Panasonic TH-65EF1U 65"-class full HD LCD display
- 1 SoundTube SA502 50W per channel at 8Ω class-D amp

## MISCELLANEOUS

- 1 Belden 2413 Cat6+ cabling
- 4 Belden 2413F Cat6+ cabling
- 2 Belden 6200UE security and commercial audio cabling





- 1 Belden 9451P audio cabling
- 1 ProCo Sound custom plates
- 1 West Penn Wire 25812 plenum RG58/U coaxial 50Ω cabling
- 2 West Penn Wire 25841 plenum RG6/U type CATV coaxial cabling

**RACK**

- 2 Audio-Technica ATW-DA49 UHF antenna distribution systems
- 3 Contemporary Research 232-ATSC 4K HDTV tuners
- 1 Crestron CP3 3-Series control system
- 12 Crestron DMC-4KZ-C DigitalMedia 8G+ 4K60 4:4:4 HDR input cards for DM switchers (HDBaseT compatible)
- 6 Crestron DMC-4KZ-CO-HD 2-channel DigitalMedia 8G+ 4K60 4:4:4 HDR output cards for DM switchers
- 8 Crestron DMC-4KZ-HD HDMI 4K60 4:4:4 HDR input cards for DM switchers
- 5 Crestron DMC-HDO 2-channel HDMI output cards for DM switchers
- 1 Crestron DM-MD32x32 32x32 DigitalMedia switcher
- 1 Crestron DM-PSU-16-PLUS 16-port PoDM+ power supply for DM 8G+ I/O cards
- 1 Crestron HD-WP-4K-401-C 4K multi-window video processor w/HDBaseT and HDMI outputs
- 3 Crestron IRP2 IR emitter probes w/terminal block connectors
- 1 Crestron TSW-1060 10.1" touchscreen
- 1 Crestron TSW-1060-RMK-2 rackmount kit for TSW-1060
- 2 Extron SMP 351 H.264 streaming media processors
- 1 Middle Atlantic BR1 brush grommet panel (1RU)
- 1 Middle Atlantic PD-920R rackmount power (9 outlet, 20A)
- 1 Middle Atlantic U4V utility rackshelf (4RU, 15.5"D, vented)
- 1 NETGEAR GS728TPP-200NAS 28-port gigabit Ethernet smart managed pro PoE switch
- 1 QSC Q-SYS Core 110f processor
- 1 QSC Q-SYS I/O-8 Flex channel expander
- 1 QSC SPA4-100 4-channel amp
- 2 RDL TX-J2 unbalanced input transformers
- 1 RDL TX-RA5 TX Series racking system

**VARIOUS ROOMS**

(120, 121, 122, 123, 124, 125, 156, 171, 176)

- 4 Chief RMF2 medium FIT fixed wall display mounts
- 5 Chief RLT2 large FIT tilt wall mounts

List is edited from information supplied by Progressive Electronics, Inc.

and video cameras. Naturally, though, the courtroom does have unique and distinguishing uses. Thus, PEI made sure the courtroom had an annotation system and remote video arraignment cart. (Just imagine what Perry Mason could have done with this modern AV technology!)

According to York, "Our scope for this space was to provide local AV reinforcement, as well as recording/streaming [capability]. The Justice Center wanted the ability to share sources throughout the facility; provide digital annotation for the

judge, prosecutor and defense team; and integrate with their portable arraignment system."

To ensure clear audio through the courtroom, there are various Audio-Technica microphones; options include lavalier, wireless headset and handheld models. Four 12-inch goosenecks with shock mounts are allocated for the prosecution and defense desks, as well as the judge and the witness being questioned. Then, four ceiling mics pick up comments from seated observers. Four Crestron 21.5-inch touchpanels for



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court personnel are mounted on Chief desk stands. In addition to the large touchpanels, three 65-inch Panasonic commercial monitors are integrated. Finally, a Panasonic PTZ camera (on a Vaddio wall mount) helps to capture the proceedings.

According to York, the courtroom's seven DM-DGE-200-C digital graphics engines from Crestron not only drive the touchpanel control panels, but also work as DigitalMedia receivers for the TVs. He explained, "That's how the [monitors] are able to show annotations in the courtroom." The courtroom is also equipped with DigitalMedia transmitters and receivers.

### Annotation & Arraignment

"[Digital annotation] was something the client wanted to be able to do," York emphasized. "They wanted the prosecutor, the judge and the defense to be able to plug in their laptop and pull up whatever photo evidence they had, display it and make a circle noting, 'Exhibit A.'" Indeed, there can be little doubt that seeing evidence presented onscreen is more powerful than any rhetoric alone could be.

Traditionally, exhibits might be projected onto a screen, without much interaction from key courtroom presenters—just evidence in, evidence out. The aforementioned Crestron digital graphics engines, however, enable collaborative annotation. "For example," York explained, "I'm using the Crestron digital graphics engine. It works as a receiver for the DigitalMedia systems. It allows any system used with the digital graphics engine to view the annotations of other people. Any of the touchpanels on the desks or any of the wall-mounted displays in the courtroom [reflect] the annotations."

Furthermore, each touchpanel user annotates in a different color, for identification purposes. For instance, the screen might reflect the prosecutor discussing something and circling it in


yellow. Then, the defense might offer a rebuttal using red.

Speaking of touchpanel capabilities, the judge and the clerk have full control of video routing and audio levels. The prosecution and the defense, by contrast, are limited to local control (for instance, muting).

The existing portable video arraignment system was retained in the new Justice Center. The videoconferencing cart can be taken to incarcerated prisoners, with testimony transmitted via IP to the court. "Microphones and scanners can be used to arraign someone without [having to] physically bring them into the courtroom," York remarked.

### Lobby AV

The Justice Center lobby clerk controls AV feeds to the lobby display. The clerk has a seven-inch touchpanel that allows him or her to route any video source, including courtroom camera, EOC camera and live TV, to a 65-inch Panasonic display affixed to a Chief articulating mount. A Crestron DM-RMC-SCALER-C receiver and room controller interfaces with the Justice Center's DigitalMedia deployment. With regard to audio, horizontally attached left/right Leon soundbar speakers maintain a nice aesthetic, matching the Panasonic enclosure's décor. A SoundTube amp behind the display drives the speakers.

One challenge that PEI faced, York noted, was a very compressed timeline after the integrator was brought into the fold by Turner Construction. "We got the contract, and we were onsite the next week pulling cable!" he said. "So, our biggest challenge was meeting the schedule by coming into the project late." Every cloud has a silver lining, though—and this one has two. Not only did PEI do an outstanding job, pleasing the client in the process, but it also was able to avoid the typical red tape that can slow down projects. Not a bad trade off! 



A display mounted in the break room.