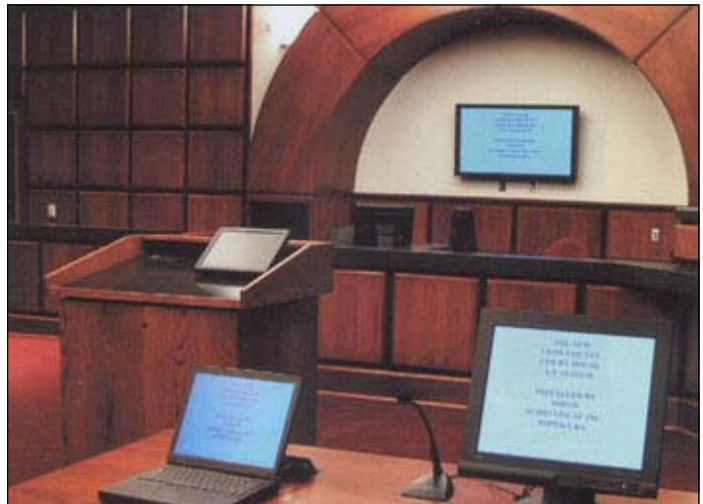


Judicial Norm: Technology Design

By Lee Cuthbert

The legal justice system of law offices, courtrooms, and corrections facilities is in the midst of a transformation - from the staid, formalistic atmosphere of the past to an efficient, high-tech present. Most notably changed are the courts, which like the Lyon County Courthouse in Emporia, Kan. have fully embraced the technologies of multimedia presentation, assisted listening, enhanced security, and information management.

Detention facilities have followed suit, adopting similar techniques such as secure, electronic visitation. Recently, the legal profession has indicated that their workplaces, too - like the law offices of Kean, Miller, Hawthorne, D'Armond, McCowan & Jarman in Baton Rouge, La. - can benefit from technological upgrading.



The Louisiana law firm, which occupies five floors of an office building in downtown Baton Rouge, wished to remodel their space in order to make an "impact statement" for the firm and adjacent attorney offices. Centerpiece of the renovation is a new, seven-room Conference Center featuring a 2,400-sq.-ft. multipurpose room designed to accommodate up to 150 people for formal gatherings, partner meetings, training, and other uses.



The multi-purpose conference room can be configured for gatherings such as banquets and dinners, or conference style. According to interior designer Deborah Steinmetz, FASID, the law office has even made the room available to local civic groups for their events. "It's a hotbed of activity up there," she exclaims.

The New Orleans office of Steinmetz & Associates designed the project, including concept development, space planning, project management, and construction management - as well as initial programming and location of personnel. The work also entailed consulting with the mechanical engineers to insure proper temperatures and comfort levels with the amount of people loads, lighting design (in conjunction with the audiovisual system), and a life safety/security program, including smoke doors and an access card-reader system separating the Conference suite from the office area.

The Conference Center was fitted with African mahogany for the custom millwork and trim. Frosted and clear glass sidelites provide privacy but allow a degree of openness and light to flow through the space. In the lobby, the existing travertine was retained, polished, and complemented with a vaulted ceiling and pendant lights with simulated alabaster. The flooring mimics the shape of the ceiling above with a golden leaf granite pattern border and carpet inset, which flows into the reception area.

The Center's rooms were designed with color themes that integrate the finishes of each room (mahogany wood trim and wall covering) with the furniture specified by the designer, including the conference table, credenza, and custom-upholstered chairs. The millwork is detailed with reveal edges to provide a contemporary aesthetic.



The decor extends to the workstations, which were custom-designed with similar frosted glass panels. Firm principal Steinmetz and her staff met with members of a building committee and a law firm administrator to plan the offices and Conference Center. Each of the law firm's practice groups provided input on their needs - a mock courtroom setup, a deposition area, and an arbitration area. The design firm then worked with audio/video contractor Jeff Edenfield of Audio Professional Services in Metairie, La., on a technology plan for the rooms.

"We consulted with Jeff and we asked him to come up with three different proposals for the client, each one having a higher degree of technology," explains project manager Irving Alicea, an associate at Steinmetz. For the main conference room, "we told the client you have three options: Level A is a basic level with a screen and a projector and some technology, up to

the highest level which is the works - automation, everything."

"Based on that, the committee elected to go with the medium proposal," Alicea said. The decision eliminated videoconferencing, though Edenfield claims the audio/video system can easily accommodate it when the firm makes the decision to proceed. "We tried to anticipate the client's present needs and leave room for future expansion," he said.

"Our primary goal was to provide a flexible, integrated system that was highly intuitive and easy to use," Edenfield explains. "We wanted a system that could be operated by anyone with only minimal training. This allows the presenter to concentrate on the presentation without the distraction of a complicated presentation system."



"We have two interchangeable locations for the podium," notes Alicea. "One obviously for a presentation-type scenario where the presenter wants to be in the front of the room next to the screen, and the other location places the podium in the front middle." The A/V control unit box was recessed into the floor slab.

Lighting for the room consists of incandescent downlights, a fluorescent light cove system, and linear indirect/direct pendant fixtures - all tied to a dimming system for each of five "scenes" programmed by Audio Professional Services for various types of presentations. These settings were then integrated with the room's fully recessed 132-inch projection screen and drop-down, front-screen projector, operated by a wireless touchpanel control.

Eight overhead speakers anchor a theater-quality sound system, with two inputs for wired microphones and four

wireless mics. "The volume of all mics may be raised or lowered in relation to the level of other sources, or individual mic levels may be changed or muted," notes Edenfield. "The system provides for presentations using computer, document camera, DVD, VCR, CD, or other devices that may be connected. Lighting automatically changes according to the current activity, but also may be changed to any of the presets.

"Of course, the real power of the Crestron control system lies in the ability to perform complicated tasks with the touch of a single button," he says. "If, for example, you select the DVD button on the main page of the touchpad, it automatically dims the lights, lowers the screen, lowers the projector, turns on the DVD player, sets the audio levels, and starts it playing. From just about any screen on the touchpad you can raise the lights, for example in the center section only, so people can make notes without washing out the image on the screen."

"There was a lot of detail requirement that we had to add as we were finishing the design process - it got to be a pretty complicated system," says Alicea. "The room was designed for multimedia - everything from PowerPoint to watching the LSU game on Sunday."

Kansas County Courthouse

The new Lyon County Courthouse in Kansas contains county offices and judicial spaces for the Fifth District court, where a historical trial occurred to inspire the 1987 movie "Murder Ordained." The new courthouse, designed by Treanor Architects, is outfitted with audio/video, communications, and security equipment to facilitate legal proceedings and the presentation of evidence.



Architect Dan Rowe worked closely with Chief Judge Merlin Wheeler and audio/video consultants Theer & Associates of Omaha, Neb., in designing technology for six rooms - five courtrooms on the third floor and the county commissioner's chambers on the main level - as well as building-wide alarm/security and media access systems.

Communications and information flow were paramount," said Larry Heilman, president of Smith Audio Visual, which was the contractor on the project.

"To speed the legal process, modern-day presentation systems are needed to distribute visual evidence throughout the courtroom," he declares. "Distributed sound must remain intelligible, and video sharp and clear. The flow of information via electronic means must be exact and accurate to avoid misunderstanding."

Smith Audio Visual provided identical multimedia distribution systems for all five courtrooms, including a document camera, plasma screen, assisted listening system, touchscreen control, five microphones, eleven 18-inch LCD screens, and twenty-four loudspeakers. For security, the firm installed twenty-four CCTV cameras and fifty-five panic alarms throughout the building.

Heilman describes several of the project's "numerous advances in technology that make it the courtroom of the future:

- A swiveling podium with an on-camera video annotation system and built-in document camera.
- Automatic microphone handling and zoned sound reinforcement, so that any unused mic is switched off and no mic feeds sound to any nearby speakers, thus eliminating feedback.
- The judge's touchpanel acts as master remote control for distribution of all video and sound, as well as a "pink noise" channel to facilitate private conversations at the bench.
- Attorneys can "link in" to the video system from the laptops at their desks, and this video can be shown on any screen in the room."

Physical evidence introduced at the podium can be digitally photographed by the document camera, then circulated electronically. Unlike traditional courtrooms where evidence is circulated from juror to juror - each of them studying it and passing it on - the same note or photograph can be instantaneously viewed. "When the number of pieces of evidence climbs, the time savings is tangible," says Heilman.



The judge, using his touchpad, can see and approve a piece of evidence and then "show" it to the jury with a press of a button. Graphic tablets placed at the swiveling lawyer's podium, the judge's bench, and in the witness stand allow the judge, attorneys, or a witness to make annotations over video on the screen (like drawing on the screen during Monday Night Football).

A scaler/switcher scales up all video images from every input source to a resolution of 1024 x 768 for easy viewing around the courtroom. Members of the media can monitor proceedings from one of four color monitors in a media room, and the signals can be fed to television trucks outside the building. "We're also taking all that information, including the audio and the video (which is converted to S-video), and recording all the court proceedings at the same time," adds consultant Lonnie Theer of Theer & Associates.

"In a courtroom everyone needs to see - and there are so many people involved," exclaims Heilman. "Your witness is in one place, your court reporter in another, the judge, the jury. The jury is the absolute - they have to be able to see the visuals. So we put seven 18-inch screens in the jury box, one in the witness stand, one at the podium, one at the defendant's table, one at the plaintiffs table, and one for the judge." In addition, there is a 50-inch plasma screen for the gallery between the witness box and the court reporter.

"Talk about architectural issues," adds Heilman, "they located the court reporter between the judge and the witness, which is a great place for that person to see everything. This architect did a very good job with the layout because in many cases the court reporter can't see the witness or the judge or the attorneys."

Numerous microphones and speakers are interspersed throughout the room (including sixteen speakers in the ceiling). Digital processing enables the microphones not in use to be automatically muted (as well as the speakers above the person talking into the microphone) "so you get a lot more gain before feedback," Heilman explains. "It works flawlessly. You can barely talk through the microphone and it will mute the speaker and it pulls your volume to a maximum preset level."

Using an optimal number of speakers, Smith Audio Visual was able to program the equalization and delay levels of the audio so everyone in the room hears the dialog clearly and at the same time (without echo effect). Conversely, the judge has a "sidebar" button on his touchscreen that automatically broadcasts "pink noise" throughout the system - except for the headphones of the court reporter - to prevent conversations at the bench from being overheard.

Heilman is especially pleased with the way his team was able to seize on "an untapped potential" in the form of camera feeds from the courtroom to the building's media room. "Video-streaming the signal from each media camera, we were able to deliver these images over the office computer network in the building," he explains. Thus the staff can check to see whether a courtroom is in use, see if the room is ready for jury assembly, or ascertain whether a judge is in chambers. "Being able to 'look around' like this saves time and legwork," says Heilman, adding, "The clients tell me that's the best feature of the new courtroom."

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Electronic Equipment

Baton Rouge Law Office

ATLAS SOUND	MIC STANDS
AUDIO-TECHNICA	PODIUM MIC, ETC.
BEHRINGER	FEEDBACK CONTROLLER
CRESTRON	CONTROLS
CROWN	MIXER/PROCESSOR
DRAPER	SCREEN
ELMO	DOCUMENT CAMERA
EXTRON	MATRIX SWITCHER, ETC.
FURMAN	POWER CONDITIONER, ETC.
INTEGRA	CD, DVD CHANGERS
LUTRON	LIGHTING CONTROLS
MIDDLE ATLANTIC	RACKS
MITSUBISHI	PROJECTOR
PANASONIC	VCR
POSH	CEILING SPEAKERS
SENNHEISER	MICROPHONES
SVS	MOUNT, LIFT
TOA	AMPLIFIER, ETC.

Lyon County Courthouse

AIPHONE	INTERCOM, ETC.
AKG	MICROPHONES, ETC.
ALTINEX	PODIUMS, ETC.
AMX	CONTROLS
ASHLY	AMPLIFIERS, ETC.
ATLAS SOUND	TRANSFORMERS
AUDIO-TECHNICA	WIND SCREENS, ETC.
BOECKELER	DIGITAL TABLES, ETC.
CROWN	MICROPHONES
EXTRON	INTERFACES, ETC.
INLINE	SCALER/SWITCHERS
JBL	CEILING SPEAKERS
LOWELL	RACKS
MACKENZIE LABS	ANNOTATION SYSTEM
MARANTZ	VCR's
MIDDLE ATLANTIC	RACKS
NEC	LCD SCREENS, ETC.
PANASONIC	CAMERAS, ETC.
PEAVEY/MEDIAMATRIX PIONEER	PROCESSORS, ETC.
PROCO	PLASMA SCREENS, ETC.
RENKUS-HEINZ	FLOOR BOXES, SPEAKERS
SENNHEISER	MICROPHONES, ETC.
SHURE	DESK STANDS, ETC.