

# Ada County Courthouse

## Technology and Consistency Advances Justice

BY RICH WILLIAMS, SEPTEMBER 2002

**Boise, Idaho's new 340,000-square foot Ada County Courthouse represents one of the most technologically advanced court facilities in the United States. Highly advanced audio, video conferencing and multi-channel digital audio recording capabilities put the Ada County Courthouse at the forefront of law enforcement.**

Two highly advanced systems integration firms worked together over eight months to design and install the innovative, yet brilliantly uncomplicated audio, video and digital recording systems.

CCI Audio Visual Design, founded in 1990 in Boise, Idaho, specializes in a broad range of design/build 'low-voltage' projects, such as briefing and command conference rooms, as well as training facilities, for state and local governments and the military. Private sector projects include corporate boardrooms, and entertainment facilities, such as the 12,000-capacity Idaho Center, in Nampa, Idaho. Video systems integration has grown significantly over the past three years to become a major aspect of CCI's business. Forty percent of the firm's business is derived from video, while the balance accounts for audio and control systems.

From its humble beginnings, Aatronics, founded in 1971, by Paul Orlovich, also based in Boise, Idaho, has grown to become one of the preeminent systems integration firms in the Pacific Northwest. Now with 45 full-time employees, the company specializes in limited energy and projection systems for conference and boardrooms, as well as churches. Large-scale systems include the installation of the



audio and television distribution systems in Oregon's Portland Rose Garden, home of the Trail Blazers. From the firm's two Idaho offices, they service clients in Idaho, Montana, Oregon, Washington and Wyoming. The company is still run by Paul, who sits on the NSCA Board of Directors, and his two sons, John and Brian.

Over the course of four months and 50 meetings, CCI's design consultant, Rick Stanley was able to clearly determine the exact systems requirements for the Ada County Courthouse. Having put together the design proposal, CCI partnered with Aatronics on the project execution, and Aatronics completed final engineering of the audio and video systems.

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Rick Stanley points out, "The driving criteria for the overall courthouse design is that every courtroom's technology is identical. Because the judges and clerks need to frequently alternate between courtrooms, you would never want a situation where one courtroom's technology was different



**The Advanced Courtroom in the Ada County Courthouse**

from the others or would delay and hamper the legal process. The client wanted 'zero-learning-curve-courtrooms,' plus with the design of every courtroom the same, maintenance costs are kept low."

All 25 of the courtrooms share the same base audio system design, which includes Bose Loudspeakers for courtroom playback, Audio-Technica microphones and signal processing consisting of Biamp System's VRAM (Variable Resource Automixer) and MSP11 Multi-

Function System Processor.

The base standard courtroom consists of five microphone inputs: Judge, witness, lectern, and both attorney tables. The sixth input is from a mobile Multimedia Evidence Presentation Podium, consisting of video, DVD, CD and cassette players, as well as a Samsung SP5500N digital document camera. The Samsung offers incredible clarity and zoom capability, that not only can offer the finest detail on fingerprints, but it can also detect microscopic welds and solders on something as small as an IC Circuit.

Additionally, all of the Multimedia Evidence Presentation Podiums can be used universally in any of the other courtrooms in the building, as well as in the commissioners hearing room.

The audio system serves four different purposes: sound reinforcement into the room, which Aatronics accomplished by using the gated properties of the Biamp VRAM. John Orlovich, Aatronics partner and design consultant, states, "The

Biamp VRAM is a very instrumental piece of equipment in this installation because of its different types of individually configurable outputs. For the reinforcement into the room, we used a gated system to increase gain before feedback. We used the non-gated direct outputs that feed the digital

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BIAMP

# Courthouse: Ada County Courthouse



Custom control panel providing complete control over all courtroom audio

recording system and here we used Biamp's DMD (Device Matching Driver) to provide various mixes of the signal from the VRAM. This allows us to capture every word that is uttered in the courtroom into the digital recording system."

Additionally, there is also a VRAM output that feeds a Sound Advance Assistive Listening System and routes to a media recording plate - in select courtrooms - which allows the news media to tap into the crystal clear digital courtroom audio.

John continues, "The audio in each room is controlled by a custom desk-top control panel. The panel provides the clerk with complete access to the audio features of the room, such as volume, entire system mute, or witness mic mute, etc. The control panel works perfectly with Biamp Systems VRAMs' definable events based upon contact closures. We went with very intuitive, time-trusted and reliable audio products in this job, such as the Biamp Systems VRAM, and it's been a very stable system."

Every one of the 25 courtrooms uses one VRAM. The two other expanded courtrooms, including the Grand Jury room, and two District Courtrooms, make use of two VRAMs for additional microphone inputs. John notes, "For instance, there is one microphone for every two jurors in the Grand Jury room. Also, the expandable courtrooms allow for additional attorney tables, for higher profile cases and additional microphones can be added to the system."

Four other courtrooms feature adjacent jail cells and microphone input plates were installed in these holding areas in order to conduct court proceedings. If a defendant, due to unruliness, has to be relocated to the cell, the accused, as well counsel, can hear and respond to the judge and District Attorneys from this holding area.

The two advanced District Courtrooms feature full AMX Netlink control systems integrated into the serial port of the VRAM. Additionally, every courtroom has been designed with upgrade paths should they need to install AMX control panels at

any time in the future.

The most unique aspect of the Ada County Courthouse is its ability to digitally record court proceedings from all 25 of its courtrooms simultaneously over its 1 gigabit LAN Ethernet network. Audio is recorded to a 160 gigabyte IBM fileserver, equipped with VoiceIQ's CourtFLOW Digital Audio Recording System (DARS), located in its central IT department.

John notes, "Every word spoken in any of the courtrooms is captured and routed from the Biamp's VRAM direct outputs into the Biamp DMD device to create the proper mixes then into a local computer, Voice IQ CourtFLOW software, via an eight-channel recording card. This computer will process the audio from the sound system and then packet it, sending it to the central 160 gigabyte IBM file server. If all courtrooms were in operation

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at one time, the system can simultaneously record 100 channels of audio."

CCI also modeled all three of the courtroom designs with Bose modeler software to provide uniform sound coverage and improve gain before feedback. Rick states, "Even if you were to speak while sitting all the way in the back of the gallery, you will be clearly recorded to this very sensitive and extremely high-performance court recording system."

Once the audio is recorded, the clerk's coordination office can provide attorneys and court personnel with copies, in every format, including via email, CD ROM, etc., from computer workstations. The testimony, when recorded via this digital process, is also emailed to transcribers in other parts of the world, so by the next morning court personnel will have complete transcriptions from the previous court day.

## COURTROOM VIDEO

Each courtroom is equipped with a ceiling-mounted PLCXP18N Sanyo Projector projecting onto one of three different size screens, depending upon the courtroom size, seating areas and viewing direction. Motorized drop-down projection screens are located behind the witness box. Additionally, high resolution flat screen monitors, located at the

jury box, witness position, judge's bench, clerk and defense and prosecution attorney tables, will display any video presentation from the Multimedia Evidence Presentation Podium. The clerk has the ability to instantly cut the video presentation of evidence if he deems it not admissible. Audio, if present, during the presentation of video evidence or videoconferencing, will be routed to the sound reinforcement system in the courtroom and recorded to VoiceIQ's CourtFLOW Digital Audio Recording Systems (DARS).

Additionally installed in each of the Multimedia Evidence Presentation Podiums is an Analog Way Smartcut II Scaler that scales the video up to the maximum resolution for the highest onscreen image quality.

Two of the courtrooms are set-up as remote video arraignment courts. These videoconferencing courtrooms are configured to allow each of the courtroom's

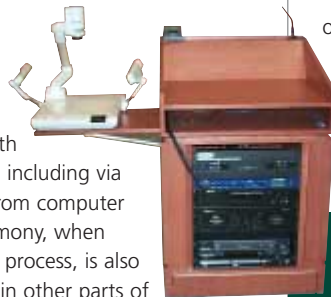
three cameras to conference over the internal IP network, via Tandberg 6000 Codec audio and video processors, with the jail facility located over five miles from the courthouse. Two cameras in the jail's video arraignment room are configured into a Tandberg 500 Codec. The jail's video arraignment room features a ceiling-mounted Sanyo XP21N projector projecting onto a permanently mounted 4-foot by 6-foot Da-Lite Perma Wall.

The videoconferencing system is designed so court officials can "call out" to another videoconferencing center, such as an out-of-state law office or even a location as basic as a Kinko's, for videoconferencing testimony from a witness or expert witness.

Rick points out, "By holding video court, with the judge and the prosecutor in the courtroom and the defendant and defense attorney in the jail facility, they eliminate having to bring 50 to 100 defendants to the courthouse. The jail's video arraignment room can

also hold up to 40 defendants and legal counsel."

Since February 2002, except for the standard 'fine tuning' visits, there have been few, if no call-backs, to Aatronics or CCI on the completed Ada County Courthouse system. Rick concludes, "In past three months we've not heard from anyone at the Ada County Courthouse on the audio, visual and evidence presentation systems. It's a very stable system." ◀



Mobile Multimedia Evidence Presentation Podium

*Biamp Systems is the best thing to happen to sound. The company is an acknowledged international leader in the field of professional audio electronics. Biamp is recognized for delivering high quality and innovative electronic products to meet the audio requirements of airports, courtrooms, theaters, universities, corporate boardrooms and other public venues.*