Chapel Hill Public Library Serves Community Using Extron Technologies

Extron

Within the approximately 80,000-square-foot Chapel Hill Public Library are four meeting rooms available to the community.

Chapel Hill Public Library in North Carolina is more than just a book repository, it is a hub of activity for the town's residents and the surrounding communities. The LEED Silver-certified building is designed for high-efficiency, including enhanced and smart technologies. The 80,000 square-foot facility includes four meeting rooms that are available for public use. This case study looks at the newly upgraded AV systems within and linking these spaces.

> **"Using Extron's NAV platform gave us extreme flexibility in the Chapel Hill Public Library project."**
>
> **Connell Smallwood**
> Senior UI/UX Control System Programmer
> KONTEK

NEEDS AND CHALLENGES

Library staff wanted to upgrade the meeting room AV systems with a variety of enhancements such as larger displays with enhanced image quality. They also needed to link the two larger rooms to support overflow. It was very important that AV system control was intuitive so that a wide variety of public users experiencing the systems for the first time could easily operate the systems. Also, the AV equipment had to take minimal space or fit into racks in the gap between two of the rooms.

KONTEK Systems was brought onboard to design and deploy upgraded AV systems. To provide exceptional image quality and maximize meeting room capacity and arrangement flexibility, they specified a variety of Extron AV switching, distribution,

Any of the meeting rooms may be reserved through an online reservation system for use by non-profit organizations, community event planners, and educators.

The compact NAV scaling decoder is installed close to the ceiling mounted projector.

"To bring the library's meeting rooms into what they termed as the 'modern age,' the new more robust AV systems needed to be linked and Extron's NAV Pro AV over IP was the best solution."

Mike Werner, CTS-D, CTS-I
Director, UX Design & Technology
KONTEK Systems

audio, and control products. A NAV® Pro AV over IP system provides the ability to send signals between the rooms.

DESIGN SOLUTION

Members of the community can reserve one or more of the Chapel Hill Public Library meeting rooms, which are available for use during library hours. The four meeting rooms use a similar design that is scalable to the space. Each room provides one or more displays and AV connectivity for HDMI and USB devices.

Seating 84 and 162 people respectively, rooms A and B are large open spaces that are well suited to presentation to an audience or an active learning or meeting breakout environment. Each includes a projection system flanked by wall-mounted displays. These larger rooms include a portable lectern, a whiteboard, a projection system, and two displays mounted to either side of the projection screen. Both rooms feature access to an outdoor terrace for breaks.

The two larger rooms are used for large-scale events that can require both rooms for different activities and at other times they are linked over the network. This includes presentation overflow. The speaker presenting in Room B is projected within Room A, including slide content and audio. An additional benefit of using the standardized design for the meeting rooms is shared capabilities and equipment. When the town council is using Room B and requires additional microphones, they use Room A as a secondary resource.

Rooms C and D accommodate 26 and 12 people respectively. They are set up in conference style to accommodate uses such as community event planning and meetings by non-

The smaller Rooms C and D are preconfigured for board meetings and strategy sessions.

"Extron's NAV system makes our brick-and-mortar meeting rooms into the perfect bridging solution for communal virtual collaboration and presentation overflow."

Ryan Chamberlain
Library Experiences Technician
Chapel Hill Public Library

"I'm surprised at how often I'm using the hybrid capabilities already for internal meetings, such as when a staff member is working from home and we conference them in."

Hannah Olson
Marketing and Communications Coordinator
Chapel Hill Public Library

profit organizations. Each provides a conference table and an appropriate number of chairs at the table and around the perimeter of the room. On one side is a whiteboard and a large display is installed at the front of the room.

To tie the four meeting rooms together, KONTEK deployed an Extron NAV AVoIP system, creating flexible integration across the spaces. The multiple NAV encoders and decoders create an IP-based video and audio switching matrix.

NAV Creates Connections

NAVigator in the central rack is used to manage, configure, and control the NAV encoder and decoder endpoints over the library's Gigabit Ethernet network. The rack-mounted NAV 1G encoder model includes signal input over DTP®. They provide a bridge between the DTP series transmitters in each room, bringing source signals from connected personal devices into the NAV system for AV signal routing. Each encoder sends high-quality 4K video with ultra-low latency. For HDMI signals with protected content, the encoder complies with HDCP 2.3 and includes Extron's Key Minder®, which authenticates and maintains continuous HDCP encryption to ensure quick and reliable transmission across the network.

KONTEK used GUI Designer software from Extron to create the custom user interface, which is intuitive for users of all experience levels.

"For most systems, there's an assumption that there will be training or that the user is coming back to use the system again. With the Chapel Hill Library's meeting rooms, it could be anyone with little or no experience using control systems who need things to just work."

Connell Smallwood
Senior UI/UX Control System Programmer
KONTEK

An Extron NAV scaling decoder is mounted with each display device. Extron's patented PURE3® CODEC wavelet-based compression technology enables the decoder to provide high image quality with extremely low latency and at highly efficient bit rates. This technology facilitates reliable, real-time delivery of visually lossless video over the library's network. It also provides high immunity to possible network errors. Just as with the NAV encoder, Intelligent Selective Streaming leverages the low motion content, achieving extremely low bitrates while maintaining visually lossless performance.

The NAV devices also support embedded digital HDMI and AES67 audio over IP to facilitate flexible integration with the installation's two Extron DMP 128 Series ProDSP™ processors. These DMP mixers and the selected Extron audio amplifiers also support Dante®. Using Dante Controller software, KONTEK set up output assignments between the processors and the Dante-enabled amplifiers. To save space within the rooms, the mixers, amplifiers, and other AV system components such as NAVigator are rack-mounted in the narrow gap between Rooms A and B.

Streamlined AV Extension and Easy System Control

Each meeting room includes DTP decorator-style wallplate transmitters for AV connectivity from a wall, the lectern, or the conference table, depending on the space and room arrangement. PTZ cameras, microphones, and ceiling-mounted Extron Sound Field® speakers also support the videoconferencing systems that are linked by the NAV system.

The mid-sized Room C includes an Extron 4K HDMI switcher to support multiple sources connected at the conference table. A NAV encoder installed with the switcher brings these signals into the NAV system for local and remote content distribution.

For AV system control within the larger rooms, a 10" wall-mount TouchLink® Pro touchpanel and two Extron network button panels are installed in each. The touchpanel is on the wall near the lectern and the button panels are mounted below the touchpanel. The boardroom layout in Rooms C and D includes the same white touchpanel model and network button panels. The touchpanel is installed by the entry and the button panels are wall-mounted opposite of the display. Extron's elegant angle-mount holds the 10" TouchLink Pro touchpanel at a 25°-angle for convenient access from a wheelchair.

KONTEK's careful product selection and the compact design of the NAV system components allowed the AV equipment to fit into small areas. Note how the low-profile NAV encoder fits easily in the space behind the display.

> **"We serve a large and diverse population, and they're happy that the upgraded meeting rooms are easy to use and offer system control in their native language."**
>
> **Hannah Olson**
> Marketing and Communications Coordinator
> Chapel Hill Public Library

KONTEK used GUI Designer software from Extron to create the custom user interface, with the Start screen featuring the library's easily recognizable logo. The various menu pages are available in five languages. In addition to English, the installation provides complete menu sets in Spanish, Mandarin Chinese, Burmese, and Karen, an amalgamation of dialects spoken throughout the coastal regions of Thailand.

The library required an intuitive, self-guiding control system. The control system programmer considered how it would be used and by people from an extremely wide array of backgrounds and experience levels. The programmer collaborated with other KONTEK personnel to lock in a look and feel that the Chapel Hill Public Library wanted for the GUI. Matching a number of the graphics to the original GUI was instrumental in building the new interface.

RESULTS

The library's upgraded meeting rooms are in constant use, with online reservations extending over the next several months. "The patrons who had reserved the rooms as soon as they were available jumped right in and took full advantage of the hybrid capabilities, which was exciting to see," says Ryan Chamberlain, Library Experiences Technician at Chapel Hill Public Library.

The upgraded meeting rooms at the Chapel Hill Public Library are in heavy use, with rooms booked several months in advance.

"We had many discussions involving the best ways to create user-friendly environments that maintained some sort of fidelity. Members of the community immediately understood how to operate the Extron systems, making the transition straightforward and relatively painless for everyone."

Ryan Chamberlain
Library Experiences Technician
Chapel Hill Public Library

Additional languages may be added to the GUI selections in the future, depending on demand and the evolving demographics of the region. Creating more robust switching systems and linking the rooms with the NAV system solved a number of issues that impacted the previous installation. Now, the upgraded meeting rooms are helping Chapel Hill Public Library continually meet their mission goals of sparking curiosity, inspiring learning, and creating connections that bring the community together.

EXTRON EQUIPMENT - PARTIAL LIST

Model	Description
NAVigator	Pro AV over IP System Manager
NAV E 101 DTP	1G Pro AV over IP Encoder with DTP Input
NAV SD 101	1G Pro AV over IP Scaling Decoder - HDMI
SW4 HD 4K PLUS	4K/60 HDMI Switcher with Ethernet Monitoring and Control
DTP T HWP 4K 231 D	DTP Transmitter for HDMI - Decorator-Style Wallplate - 230' (70 m)
DMP 128 C P AT	12x8 ProDSP Digital Matrix Processor with AEC and Dante
NetPA U 1004-70V	Four Channel Power Amplifiers with Dante and DSP, 100 watts at 70 volts
SF 26CT LP, Speakers (Pair)	SoundField XD 6.5" Two-Way Ceiling Speaker with Low Profile Back Can
SF 8CT SUB	SoundField® 8" In-Ceiling Subwoofer
IPCP Pro 255Q xi	IPCP Pro xi Quad Core Control Processor
IPA T RLY4	IP Link® Accessory with Four Relays
TLP Pro 1025M	10" Wall Mount TouchLink Pro Touchpanel in White
NBP 100	Network Button Panel with 6 Buttons - US 2-Gang
HD Pro P	HDMI Premium High Speed Optical Cables – Plenum
GUI Designer	Free Software Application to Design, Generate, and Maintain TouchLink Pro Touchpanel User Interfaces

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