Boston Medical Center
Case Studies

How Boston Medical Center relied on SIGNET's A/V innovations to transform their conference spaces and operating rooms.

SIGNET

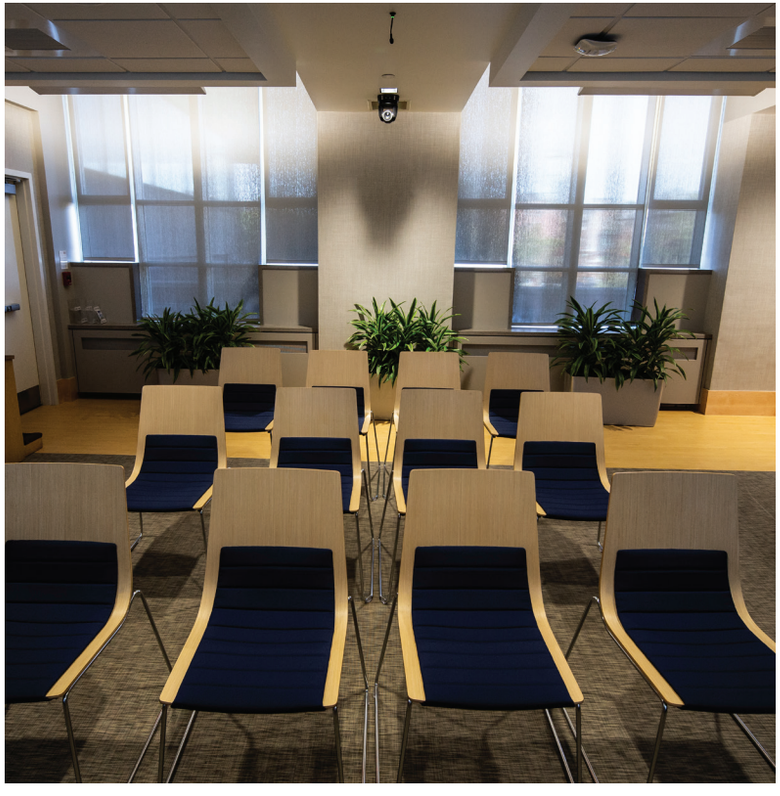
Designing A/V technology solutions for a unique conference room's needs

Challenge

Staff at Boston Medical Center needed a conference room area that could be used as two individual conference rooms or, when combined, as one large space. SIGNET's technical team was tasked with designing the technological aspects of this complex conference area, integrating the latest technology to meet the hospital's current and future audio visual needs. Additionally, SIGNET was charged with developing a production system to live stream religious services through the hospital from the hospital's new chapel.

Solution

Collaborating with Boston Medical Center, SIGNET developed strategic technology solutions. The engineering team gave careful consideration to issues related to the sightlines of each conference room and added multiple control locations and viewing stations to ensure optimum A/V equipment performance and aesthetics for each room as well as from the combined space perspective. Smaller monitors were added so that when the rooms were combined, the televisions could be resourced. Each room features a Crestron touch-panel system that controls Philips video displays, content source selection, and signal levels for the audio-conferencing aspect.



Live streaming chapel services to immobile patients

Challenge

Having the ability to stream chapel services to immobile patients is now a priority for premier hospitals. Boston Medical Center is no exception. They tapped SIGNET's A/V expertise to design audio-visual solutions centered on the ability to stream the chapel's broadcast material, as well as provide digital signage and audio technology solutions that would enable any staff member to operate the system with the push of a button.

Solution

Rising to the challenge, SIGNET designed a turnkey A/V solution featuring:

- a 4K pan/tilt/zoom camera and one alter-located microphone with LED identifiers for audio
- a wall-mounted, seven-inch touch-panel configured to easily start chapel broadcasts and allow the user options to select from a pre-selected set of camera angles or make minor adjustments as needed
- point-of-entry E switch and system control processor components incorporated into the system wall rack and connected to all components for control
- a 32" flat-mount commercial display connected to the house video distribution system via HDMI connection so that chapel services could be broadcast throughout the hospital
- a streaming audio source player with local USB audio source input slot digital signage player and four ceiling-mounted speakers.

For the live streaming needs, in addition to installing a camera, microphones and sound system in the chapel, SIGNET used an IP streaming device to integrate their existing video distribution infrastructure and incorporated digital signage for the content.

Patients, visitors and staff now have the option of being able to listen to religious services content being streamed throughout the facility.

When the chapel is not in use, the signage layer is able to provide content to the house video channel including the option of audio material from the audio player when desired.

Integrating 20th century A/V technology into a century-old conference room

Challenge

Designing an A/V solution enabling the integration of the latest technology into a conference room with century-old, high-ceilinged architecture and resulting acoustic and audio challenges is no easy feat. But SIGNET did just that for Boston Medical Center.

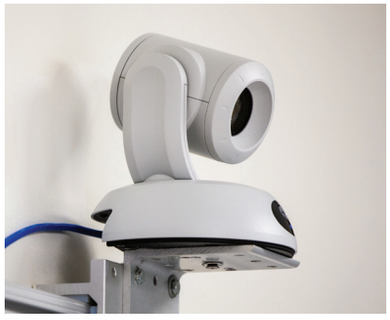
Solution

SIGNET's customized A/V approach included the installation of high-performance acoustic panels to improve room intelligibility, and reduce reverberation and ear fatigue.

To address the quality of audio signal, SIGNET designed system approaches that included:

- two smart steerable microphone arrays that suspended above the conference table, allowing our A/V programming experts to specifically zero in on placement of end users' voices
- microphone configurations that can be chosen depending on the number of occupants
- an audio-conferencing sound system for the space featuring two active steerable ceiling array microphones to be configured and controlled via a table-top system touch-panel
- four pendant white loudspeakers also were installed to be utilized for conference "far-end" audio reproduction in the room.

Additionally, these speakers, as well as microphones and touch-panel, were connected to the audio system processor, amplifier, and dedicated point-of-entry network switch.



Providing audio solutions for eight operating rooms

Challenge

SIGNET was tasked with designing and deploying an audio solution and digital displays for each of Boston Medical Center's (BMC) newly renovated eight operating rooms.

One specific operating room also required the ability for the surgeon to view any video source from any side of the surgical table in addition to offering the ability to record procedures.

Solution

SIGNET experts thoroughly assessed BMC's needs to develop appropriate solutions customized for their unique operating room needs. SIGNET's A/V solutions included:

- a refreshed video/digital recording solution with custom fading to accommodate the operating room requirements audio solution with a two-gang plate with connections for computer
- system-level control of phone audio
- a small amplifier for source and system control
- two ceiling speakers that can pivot within the ceiling enclosure
- the replacement of an existing operating room wall and articulating arm pan/tilt/zoom cameras with new Vaddio units
- a new video processing head end
- two confidence monitors installed on a dual articulating display arm.

One particularly advanced feature engineered by SIGNET experts is a modular video matrix that provides signal routing of all video sources to all displays in the room, as well as to a new digital video recorder. The end users are able to plug in a USB stick into the recorder and record medical procedures. Once the recording is complete, the USB may be removed, filed, or transferred to another storage medium.

Engineering an A/V technology overhaul to accommodate increased technology needs

Challenge

Communication in a healthcare setting is one of the most important tools we have for providing great patient care and improving patient satisfaction – which is why, as a nationally ranked hospital, Boston Medical Center prioritizes both patient and staff communication platforms including A/V aspects. In order to respond to staff's increased technology needs, BMC resourced SIGNET's expertise to upgrade the A/V systems of their seventh-floor conference room within their medical research building.

Solution

SIGNET furnished and deployed a turnkey A/V solution featuring:

- the installation of a new laser 6500 lumens projector on existing mount
- projection screen, ceiling speakers for presentation video-audio material playback
- custom 41"h x 32"w lectern
- custom 32" wide lectern that remains a dedicated room PC by BMC
- laptop HDMI connection, 18" gooseneck microphone, video processor/ control processor/amplifier unit, Crestron button panel for system control
- a system PoE switch and a system rack power supply.

Addressing a conference room's A/V technology gaps

Challenge

Key technology components within one of Boston Medical Center's conference rooms was recently updated but technology gaps were subsequently identified. SIGNET's A/V experts were resourced to develop a solution that allowed the existing equipment to tie in with the new.

Solution

SIGNET evaluated the conference room and determined the appropriate technology approaches to create a turnkey A/V solution, including:

- utilizing an 86" Philips 4K display at the head of the table, and two 55" 4k displays on articulating arms added for rear room viewing
- replacing the projection system to provide the client a better ROI and improve image quality from all seating positions
- replacing button microphones with three Shure digital steerable units, improving coverage and audio quality
- utilizing a QSC pan/tilt/zoom camera and adding video conferencing to the room through a dedicated small form factor Dell PC in the rack
- adding a Crestron NVX network encoder/decoder unit under the table, the user is now capable of presenting 4K laptop images via HDMI at the table.

SIGNET was able to utilize the existing speakers, amplifier, control system processor and room touch panel and worked closely with the client to assure they were comfortable with the touch-panel system control graphics.

SIGNET
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