Donor Alliance

Denver, Colorado

Healthcare

Sharing the Gift of Life

Donor Alliance opens a new, state-of-the-art recovery center in Denver's Lowry Neighborhood

Very few people realize how much good can come as a result of organ and tissue donation.

When you say yes and register to be an organ and tissue donor at your local driver's license office or express your wishes to be a donor in your living will, you could offer a new chance at life for more than 100 people. Organizations like Donor Alliance, the federally-designated, non-profit organ procurement organization and an American Association of Tissue Banks (AATB) accredited tissue bank serving Colorado and most of Wyoming, follow a mission to save lives through organ and tissue donation and transplantation. Their work focuses on maximizing each gift in order to save and heal those who wait for organs and tissue.

With more than 114,000 Americans waiting for a lifesaving organ transplant, being able to conduct this vital work in an efficient, safe and effective environment is of the utmost importance. The electronics in new facility, built on an all-digital backbone using Crestron DigitalMedia™ technology, make an important contribution to that mission.

Advanced electronics

Donor Alliance had three main goals for the electronic systems in its new facility.

1. They needed access control. The center is open 24 hours a day, seven days a week. Staff and clinicians must be able to work in a safe and secure facility.

2. They needed a highly-efficient conference and educational facility. Donor Alliance planners decided to include a divisible conference room to be used for staff training, ongoing training of clinicians and meetings with doctors, administrators, vendors and the public.

3. They needed a music system that would also allow staff to communicate over the phone in a hands-free environment. According to a recent study, roughly 90% of surgeons listen to iPods, radio or CDs while they work. "Music is an important stress reliever for a job that is very high stress," explains Adam Zatorski, partner at the Denver-based AV integrator King Systems, which designed and installed the center's new systems.

All of the surgical center's video systems are high-definition, using a Crestron DigitalMedia infrastructure and controlled by Crestron touch screens plus iPads, iPhones and Android devices equipped with the CommandFusion app for Crestron processors. "This is a brand new facility and it's completely state of the art," explains Michael Witt, IT Manager.

For that reason, the combined conference room includes a three-screen projection system, security cameras are 1080p, and the music systems in the OR are high fidelity.

Observation and training

One of the objectives of Donor Alliance management was to have a facility where they can provide ongoing training for their staff.

To meet the organization's strict requirements for the observation of procedures, King Systems designed a closed circuit video system for one of the center's four operating rooms, with video and audio routed to the new conference room. Partner/engineer David King included a Sony 1080p PTZ camera and a Shure MX395 ceiling microphone in the OR, with signals routed via a DigitalMedia 8x8 matrix switcher. A Sony HD digital video recorder allows staff to confidentially record procedures to a hard drive, then burn a DVD for future training sessions.

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> **Adam Zatorski,** Project Manager, King Systems

The conference room, which can seat up to 100 people, includes three Christie Digital 5500-lumen projectors for use when the room is combined and two additional motorized screens, used with NEC portable projectors, available for when it is divided. "When they use it as a live training space," Zatorski explains, "they keep it fully lit, so we needed a high-output projection system. They can use a Crestron touch screen or an iPad to control the camera as they discuss what's happening during the operation."

King Systems also installed a presentation sound and audio conferencing system based on a Biamp AudiaFLEX CM processor, Revolabs wireless mics, and SpeakerCraft Pro in-ceiling speakers and subwoofers. "We're able to take all of the mic inputs, line inputs and telephone inputs and bring them into one box with acoustic echo cancellation and feedback suppression, then output it to far-end callers and the other rooms," Zatorski explains.

Each of the operating rooms includes its own AudiaFLEX-based sound system, with satellite radio, CD, and docks for the surgeons' smart phones and tablets. Setting up the sound systems here was very challenging. "The rooms are not made

of concrete, but they might as well be, since every surface is glass, VTC flooring or stainless steel," Zatorski explains. "Mike Witt, the head of IT, is a musician on the side and he wanted those rooms to rock."

Lead installer Josh Gillespie brought a calibration mic into each room, then used the 1/3 octave spectrum analyzer that is built into AudiaFLEX systems to help with equalization. "We ran a computer-generated signal through each system first, then followed up with a lot of different types of music," Zatorski says. "The quality of the sound and video is phenomenal," Witt adds.

The Crestron processor, with medical-grade 10.4" CyberTouch LCD screens used as touch screens in each OR, allows the doctors to control the music sources and volume levels.

Security and access control

The DigitalMedia backbone also carries all audio and video signals for the security system, which is tied into the Crestron controls.

Zatorski says that, to enhance the security of the facility, "our programmer, Tim Rice, set up the system so that when people request access, their image shows up on each touch panel, and a staff member can see and talk to them." If medical staff answer the door, Shure MX395 ceiling mics provide hands-free audio, and the system automatically mutes the music so medical staff can answer the door. The microphones and loudspeakers are also tied into the telephone system, so surgeons can answer after-hours phone calls while they work.

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King Systems mounted Holovision and Panasonic cameras at the entries, along the exterior of the building and in the parking lot, as well in as interior hallways and common areas. Images record to a Vista Networking DVR with a two-week buffer, so if there's any problem, someone can always go back and review the video.

An all digital system

According to Witt, "Keeping everything in high-definition was an important goal. Keeping everything digital was crucial as well. We needed to start out with something that will last and that will grow with us."

Zatorski explains that "Once we understood the client's needs and wants, using Crestron control and Crestron signal transport was a no brainer. When the client expects perfection, compromise is not an option. No other company has a solution even comparable to DigitalMedia, and the support that Crestron provides is truly the best in the industry.

"The work these doctors do is complex enough without worrying about the AV," Zatorski adds. "With Crestron DigitalMedia technology, they can plug in any kind of laptop, any kind of Blu-ray or DVD player, and any audio source, and it just works without having to think about it."