Nutrilite Gets New AV & Control Systems for its Center for Optimal Health

On any given day, thousands of visitors make the pilgrimage to Orange County, California, armed with a checklist of must-see destinations. There's Disneyland, Knott's Berry Farm, and the area's famed beaches. And for many independent business owners, there's also the Nutrilite Health Institute's Center for Optimal Health. Nutrilite Products, the multi-national vitamin and nutritional powerhouse, is a major provider of products created through organic farming methods, and a leader in health and nutritional research.

The company, a division of the Amway/Alticor group, distributes its products through a global network of independent entrepreneurs, many thousands of whom visit the company's corporate headquarters every month to learn more about their products, and gain a better understanding about health and nutrition.

Nutrilite's Buena Park campus hosts the offices of the company's research division, Nutrilite Health Institute. The complex also houses a pair of multi-purpose meeting and presentation venues, designated the Theater and the Auditorium. Each is equipped with impressive multimedia systems including multiple video input and presentation formats, live multi-channel sound reinforcement, 5.1 surround audio, video conferencing, language translation multi-casting, and advanced control systems. Each room was designed to meet specific form and functional needs, though both share many application and operational similarities.

Beginning in 2015, the Theater and Auditorium went through a major technological upgrade. The original design and installation was started in 2004 when analog AV, and standard definition video were still firmly-entrenched, industry standards. By 2013 those old standards were beginning to no longer meeting general expectations.

In 2014 discussions began for a major digital, HD upgrade, and were finally budgeted and approved in 2015.

Theater

The building's 56-seat Theater is an intimate, fan-shaped venue. Operationally, the Theater was designed for three primary purposes – live presentations, staff and vendor meetings with video conferencing, and tour-group video presentations.

As part of the factory tour, the company brings groups to the Theater to show their custom, high-definition video presentation. The cinemascope video tells Nutrilite's story and provides insight into the scale and scope of their farming and manufacturing. They

run four or more screenings every day, and needed a flexible facility for not only the tour-groups, but for all other corporate meetings and presentations as well.

There are some fairly elaborate requirements for video presentation in this room. A custom 19-foot, 2.35:1 aspect ratio, micro-perf, Stewart projection screen is built into the front wall. In addition to showing the custom movie, we had to support these projection formats: 16:9 and 16:10, dual 16:9 and 16:10, 4:3, and dual 4:3.

I determined using a single projector would be the most practical way to accomplish these different formatting goals. Using multiple, edge-blended projectors was considered, but that represented a much worse scenario when cost, complexity and reliability were factored. Ultimately, by using a Panasonic WUXGA projector and a Crestron DGE-2, dual-window video processor, all the required configurations could be accommodated via control system presets.

Crestron control and DM switching dominate the digital video signal path. Multiple analog and digital input formats are supported through a 32x32 DM switcher. In addition to several wired interface options, a Crestron AM-100 Air Media presentation gateway was installed. Together, a Crestron AV3, and a TDS-2020 touch panel, complete the control and user interface functionality.

Multipurpose by Design

The client holds live events in the Theater, from training seminars to sales presentations and other corporate activities. A small stage was built in front of the projection screen, and is equipped with multiple inputs for computers, wired mics and other presentation equipment.

The Theater’s audio system is designed to present both live speech reinforcement, as well as stereo and 5.1 surround sound program material. The room’s main left, right and center speakers are SLS T28R units, mounted directly behind the perf screen. Four SLS PRD-LCR units are flush-mounted in the side and rear walls. An SLS 215EL subwoofer is directly centered under the screen, on the same level as the small stage.

QSC CX-series amplifiers power the system. Multichannel mixing and speaker processing is handled by two, Symetrix Radius DSPs. A Crestron HD-XSP surround processor is part of the system too. Shure ULXD wireless microphone systems are used for most live reinforcement needs.

Being a global corporation, with many national and international satellite offices, Nutrilite is also a major user of video conferencing technology. The Theater is equipped with a Tandberg C-40 video conferencing codec, and three Sony BRCH900 HD robotic cameras. The cameras triangulate the room, so real-time camera control and switching can be used to capture both presenters and audience.

Because of the intense use of these two venues, the systems run 24/7/365. To help insure consistent reliability, redundant power supplies and SugeX UPS battery backups were specified for all critical devices.

Auditorium

The Auditorium is a somewhat larger room, more rectangular in shape and with space for approximately 240 people. Unlike the Theater's fixed seating, the Auditorium's tables and chairs can be arranged to accommodate meetings, awards ceremonies, and other corporate events, including banquets, courtesy of the adjoining industrial kitchen.

Most of the Auditorium's technical capabilities were designed to mirror those in the Theater, with a few practical exceptions. Surround sound was not a requirement, nor was the need to support the custom video in cinemascope format.

The Auditorium is fitted with a pair of large, rigid, Stewart projection screens, flush-mounted to the front-of-room wall. Two new ceiling-mounted Christie Digital, laser phosphor, DLP projectors were installed. With two separate screens, side-by-side projection formats are addressed in a fairly conventional fashion.

And, as with the Theater, the Auditorium is set up for video conferencing. Three more Sony BRCH900 HD PTZ cameras triangulate the space.

Again, Crestron control and DM switching dominate the video signal path. Multiple analog and digital input formats are supported through a 16x16 DM switcher. In addition, the same wired and wireless input capabilities are supported. Once again, an AV3 and TDS-2020 package are the core of the control system and user interface. If events require overflow capabilities, audio and video feeds can easily be routed between the two rooms.

The Auditorium also uses Symetrix Radius DSP. As in the Theater, the DSP runs on a dedicated, Dell Optiplex 9030, all-in-one computer, custom built with an SSD drive. Connecting audio between the two rooms is also easy, as a Dante audio buss connects the two DSP frames.

Loudspeakers are configured as a hybrid stereo, overhead distributed system, with JBL full-range speakers and subs. All speakers are direct coupled for optimum performance. With the cross matrix mix of flush-mounted mains and subs in the ceiling, the room has a uniquely full and rich sound, regardless of seating position or program content.

Again, Shure ULXD wireless microphone systems are used for most live reinforcement needs. Because both handheld and lavaliere microphones are used, and share channels, the virtual mix console has two different EQ presets for each wireless channel. One optimized for the HH transmitters, the other for the lav mics. Because there are so many different users, the mics are not optimized for any particular user, but rather for maximum gain before feedback and neutral tonality.

In Control

An operational control room is situated between the two venues, with windows on either side that overlook both rooms. Typically, only one or two people are required to run either system.

The control systems for the two venues are some of the more impressive aspects of the installation. Jared Shapiro did a masterful job programming all the Crestron gear for the two rooms. I handled all the DSP programming, including the virtual console GUI.

Ease-of-use. That's what everyone wants. But ease-of-use does not mean every controllable device lives on the controls system touch panel. My solution, and preference, is to not try and do it all as a single system. Instead, each room utilizes three independent controlling systems.

While the Crestron system covers the bulk of the video, transport and routing tasks, the PTZ camera control is handled via its own dedicated Sony joystick. The audio is also controlled discretely, with its own virtual, mixing console GUI, with discrete fader and mute control over all inputs. Under the hood a gain-sharing auto mixer handles the primary balance and control of the live mics.

Translation

The company’s multinational orientation also created another specific requirement, a ongoing need for live translation during its meetings and presentations. Each venue has a translation room dedicated to simultaneous foreign language translation and in-venue broadcasting. Each suite is capable of servicing either the Auditorium or Theater. Both suites are equipped with a live program feed and local video monitors to mirror the projected images, allowing the translators to do their jobs without having to rely on ideal sightlines.

Conclusion

This venue overview only tells part of the story. There are many nuances that have been left out, but play a meaningful role in the daily workings of these venues. If you want to know more about the Theater and Auditorium, or any of the other nine conference rooms I've designed for Nutrilite, please send an email and I'll call back as soon as time allows.