University of Maryland School of Pharmacy

UMB Pharmacy Hall Addition Case Study

UNIVERSITY OF MARYLAND
SCHOOL OF PHARMACY

Founded in 1841, The University of Maryland School of Pharmacy is the fourth oldest school of its kind in the U.S, and prides itself equally on the high quality of instruction it offers students and the cutting edge facilities in which students learn. And now more so than ever, with the opening of a seven-storey addition featuring a wealth of new educational, research and practice settings outfitted with over $17 million in state-of-the-art A/V systems, instructional technology and related infrastructure.

Though freshly completed in October 2010, for Convergent Technologies Design Group Inc., designer of the addition's A/V, communications cabling and security systems, the project began approximately three years ago. And while the addition is the largest project they've undertaken at UMB, it is only one of a number of projects they've been involved with at the campus over the past five years as part of the design team of RCG Architects, the architectural firm of record on the project.

"One of the unique things about the School of Pharmacy at UMB is the percentage of students who participate in classes remotely and never set foot on the UMB downtown campus," says A/V designer Bill Holaday, Convergent's project manager on the design. That was one of the driving principles behind the design of systems for the addition, he adds – The creation a flexible learning environment for students on site, and the provision for asynchronous and synchronous transmission of lectures and events to students studying at the School of Pharmacy's Shady Grove campus in Rockville, Maryland.

Correspondingly, the scope of the project was extremely broad, involving systems that inhabit virtually every part of the Pharmacy Hall addition; from large and intermediate sized lecture halls, seminar rooms and specialized learning environments – such as the 48-capacity Patient Interaction Suite – to the facility's main control room, the Dean's personal conference room, and an approximately 5000-square foot, glass enclosed atrium common area that doubles as an event space.

"The need for the addition was identified by our previous Dean over fifteen years ago," explains Bill McLean, multimedia manager at the School of Pharmacy, who began working at UMB four years ago. Originally brought on board to oversee, approve and aid in the design of the A/V systems for the addition, McLean's ongoing responsibilities include the oversight of all aspects of the technical side of the distance learning applications that were at the heart of the need for the capital expansion project.

While the capacity for distance learning has been in place at the school for almost four years, previously it existed on a much smaller scale – operational in only four rooms and possessing far less flexibility than it does currently. "We now have 160 students located at our satellite campus, which, with traffic, is an hour and a half away. So we deliver all the PharmD courses via

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ATRIUM VIDEO WALL

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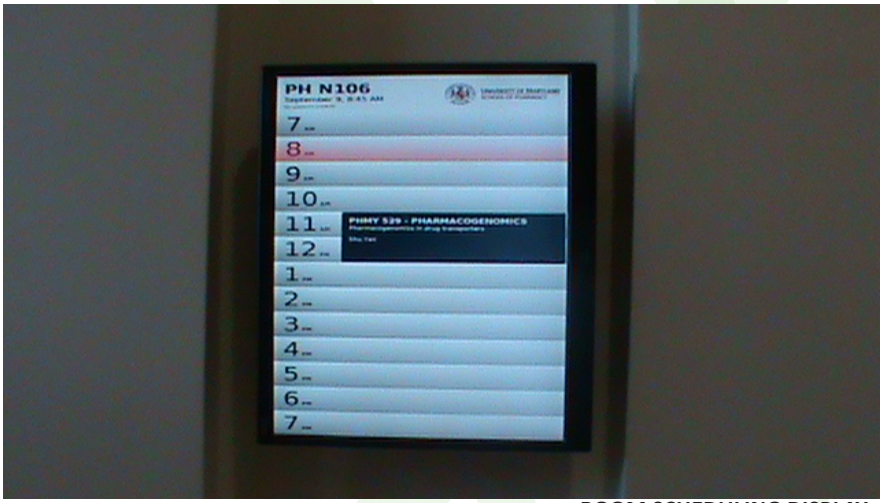
>
> *- Bill McLean*
> *Multimedia Manager at School of Pharmacy*

Mediasite recording and the majority of electives via videoconferencing using Tandberg 6000 MXPs." In all, roughly fifty-five hours of Mediasite recording and between forty-five and sixty hours of videoconferencing are done each week. "It's a shared resource type environment," says McLean. "We have four Mediasite recorders and four videoconferencing units located in our control room. We're working through a 128 x 128 Matrix Switcher that can send and receive all the material through the control room, and all of the classrooms and lecture halls are equipped with two cameras, front and back."

"The vision they had for the technology was to have a state of the art School of Pharmacy that would be a benchmark project," says Convergent Principal, Paul Corraine. "Based on the size of the project, in relation to the number of existing spaces already at the school, one of the opportunities this afforded all of us was to take the existing standards and advance them to create a new standard."

While a variety of manufacturer's products were specified for the addition, Tannoy loudspeakers and Lab.gruppen amplifiers are an integral part of the systems in many key areas.



ROOM SCHEDULING DISPLAY

"We like to use the Lab.gruppen in larger venues whenever we can," says Holaday, "based on their efficient power usage, the fact that less cooling is required, the ability to monitor them remotely (using the Lab.gruppen NomadLink Bridge 60E), as well as their physical footprint within equipment racks."

As a result Lab.gruppen amplifiers are incorporated into all of the larger teaching spaces; one Lab.gruppen C 48:4 and one C 5:4X in each of two, 200-plus capacity lecture halls on the first and second floors, and a C 16:4 and C 5:4X in each of two smaller eighty-seat classrooms. In each case, the Labs are driving third party loudspeaker components used primarily for speech reinforcement. Each of these four halls also includes a Lab.gruppen NLB 60E and the same tight integration of audio/visual broadcast and teleconferencing systems as other spaces within the addition.

"This project is actually the first time we used Lab.gruppen," says McLean, adding that Convergent was instrumental in the choice. "Our main concern was a sense of symmetry throughout the building and they're a solid name." But with virtually all of the teaching spaces in the building tied back into the facility's new master control room, the capabilities Lab.gruppen offered in terms of remote troubleshooting were also of

great importance. “That’s always a concern of mine, especially with a shared resource. Whenever possible we try to make things accessible remotely – The way the system is designed we hope we don’t have to use it, but knowing that we can is always a positive.”

The control room is the technological nerve center for operation of all of the School of Pharmacy’s distance-learning technology, where two full-time technical operators interface with individual classrooms and labs, assisting instructors with any technical difficulties they might be having, as well as setting up all video conferencing and Mediasite recording. The control room also incorporates an additional Lab.gruppen NLB 60E Network Bridge, two C10:4Xs and one C5:4X to power a distributed audio system comprised entirely of Tannoy loudspeakers for the previously mentioned atrium/event space.

Throughout the build Tannoy products were specified for both their intelligibility and the versatility they offered in terms of the number of niches they could inhabit; from in-ceiling and wall mounted applications, to their use as studio monitors in the case of a pair Tannoy Reveal 5As in the main control room. But beyond pure functionality, Tannoy also offered a specific benefit aesthetically as well. Having used Tannoy for several other projects McLean had no worries about the quality of the speakers and their performance, but in this particular project he says, the aesthetics of the product became almost as important as their performance. “This being a collaboration with the architects, the look and the feel of the rooms were very important. It sounds minor, but that kind of thing can really hold up a project,” he says.

In the atrium, which features a 5’H x 10’W video wall and a distributed audio system incorporating eight Tannoy CMS 12 TDC in-ceiling loudspeakers and five Tannoy Di 5s, aesthetics were particularly important. Designed to be transformed quickly to meet the needs of any given function, the atrium is primarily used for special events; from the October 5th, 2010 opening of the new Pharmacy Hall to alumni galas, the broadcast of sporting events and live student presentations.

“For the most part, anything in the building that goes into the control room we can send via two dedicated feeds down to the atrium,” says McLean. “All of the teaching areas can be routed there – classrooms, lecture halls, the Dean’s conference room – If somebody is giving a presentation elsewhere we can send not only the video of the presentation and any PC based presentation elements to the video wall, but speech and program audio as well.”

There are three levels to the space,” McLean continues. “The first level is where part of the old building’s gathering area was. The ceiling there is roughly fourteen-feet high and that goes out about thirty feet before opening up into the three-storey glass atrium.” Here speaker placement involved treading a fine line between aesthetic and sonic considerations. The CMS 12s are mounted in custom cut wooden ceiling panels and cover the area in that first level. The Di 5’s are mounted on the bulkhead transition between the lower and upper space in the atrium, rigged horizontally at about the twelve-foot mark and angled slightly downward to cover the space from the sides.

Tannoy Di 5s are also in use in the Dean’s Conference Room. “There’s full video conferencing in that room and two Di 5s are the left/right on either side of the presentation wall at the front of the room for program and speech reinforcement,” Holaday says. This more intimate space also incorporates Biamp Nexia DSP, Crestron control, an MPC-M10 media presentation controller, Extron and NEC products, as well as a

MASTER A/V CONTROL ROOM

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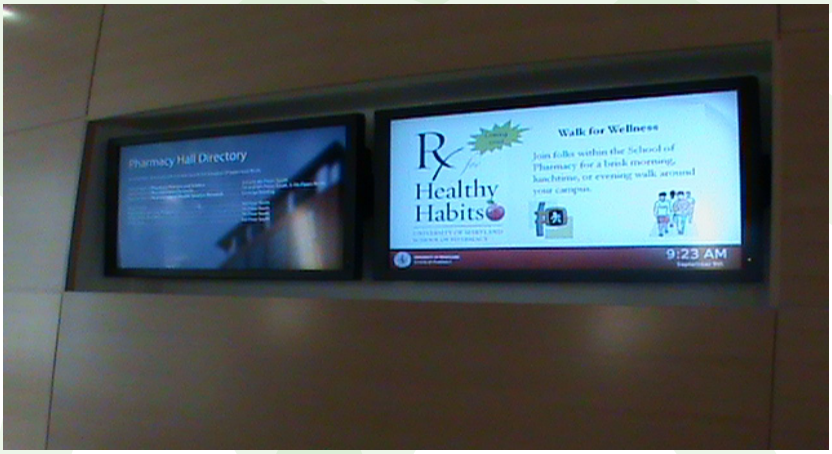

COMMON AREA DIGITAL SIGNAGE

Tandberg integrated camera and codec.

Other spaces incorporating Tannoy products include the Patient Interaction Room, where students collaborate with each other in small groups engaging in mockups of patient/pharmacist counseling sessions. Here six "in-ceiling Tannoy CMS 601 DC BMs provide support for speech and program reinforcement of presentations from various sources." Similarly, four "CMS 601 DC BMs are also installed in the third floor Sterile Prep room, also for speech and program reinforcement."

"We spec a lot of the 601's," says Holaday. "They're a good sounding speaker at a very reasonable price point." In each case the systems also include Biamp Nexia DSP, Crestron control and Crown amplifiers. While classes in these rooms can be recorded and/or transmitted off campus, owing to the hands on nature of the studies taking place in them, and their function as a fully operational model pharmacy, smaller scale versions have been built at Shady Grove as well. "It's the one place where videoconferencing and recorded material won't be able to capture everything students need," says McLean.

As much as familiarity and confidence in products like Tannoy, Lab.gruppen and all of the system components specified for the School of Pharmacy factored into the success of the project, both Corraine and Holaday stress that those qualities were also an integral part of the successful and satisfying collaboration between themselves, RCG Architects and the School itself.

"The whole design process was enjoyable," says Corraine. "The users at the School of Pharmacy are an extremely educated group and so it made it all the more critical to make the right choices. They appreciated the components we selected based on value and performance in each room. It was a truly good collaboration. We came to a lot of joint decisions and the products that made it into the specification were vetted on a lot of different levels."

Convergent's experience on campus and their location – literally ten minutes from the campus – were also helpful in limiting the chance of any miscommunication. "It was only three and a half years ago that we started the distance learning initiative. As we got into the nuts and bolts of how we were going to make this building work, and what the specs for the equipment were going to be, there were some pretty drastic changes that needed to be made in scope and scale. There'd be times we'd come up against deadlines and have to sit down with the drawings and make modifications, so having Convergent close by was essential," McLean says.

"It was a wonderful collaboration, and I would not have been able to do it without Convergent Technologies," he adds. "The University of Maryland Baltimore is a system of seven different professional schools, each with different levels of advancement in A/V. With the new building the other schools are looking to us as a model for what they intend to do with distance learning – We've become the standard in terms of redesign and what they want to incorporate into their systems as they move forward with similar programs to what we have with Shady Grove."

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- Paul Corraine, CTDG
Principal Designer