



# Creating The Library Of Tomorrow

A new university library incorporates collaboration technology to create an engaging learning environment.

## Redefine the Library

Whatever your preconceptions about what a library is, or can be, they might be changed when you walk into the James B. Hunt Jr. Library at North Carolina State University. Within its 250,000 square feet are the fruits of a collaborative effort designed to create a new kind of library, one that would serve companies and academia as a research facility.

“A traditional library wouldn’t work because that wasn’t the main focus,” explains Maurice York, director of NC State’s IT department. “We had to figure out what a research facility meant in this day and age.”

“We’re really picky about our technology,” says York. “It was a very measured process of doing an evaluation of the companies. We needed companies flexible and open to the way they were willing to work with us.”

But while York and his staff could be picky about IT elements, which they know quite well, the AV world was new to them.

“We knew we needed a lot of help to do this.” We worked nearly two years to build up an ecosystem of partners to pitch the idea of this facility.”

The library sits on the N.C. State’s Centennial campus, which blends corporate and academic research and is home to the fourth-largest engineering school in the country. In explaining the concept of the library, York describes it as a technology sandbox for the campus, one able to support rare and experimental technologies that could be shared among the colleges.

“We didn’t go the conservative route,” York says. “We designed to the cutting edge, to equipment that had just been announced. Put it in a 24/7 facility and you provide something

“We needed companies flexible and open to the way they were willing to work with us.”



## The IP-based system supports the research and mission of the building, working as an integrated whole that supports the lifecycle of research.

that has an immense amount of value and redefines the library.”

“The audio visual design is extremely complex because of those requirements. AVI-SPL’s role was to come in at the implementation level and bring that to reality.”

### Supporting the Lifecycle of Research

AVI-SPL engineers and technicians transformed multiple library spaces into collaboration areas, including teams rooms, an auditorium, and conference rooms. In many of these areas, Christie Digital projectors provide the video. Other solutions include cameras, speakers, microphone boxes, Sharp video displays and Cisco video conferencing – all to create spaces designed for ease of collaboration and presentation. A SMART Podium, which allows digital annotations during lectures, is in many of these spaces to support the collaborative environment.

Biamp AudiaFlex, a digital audio distribution system, manages all of the mixing and voice-over-IP, while AMX Modero touch panels give users control over each piece of audio visual equipment.

For a multipurpose space, AVI-SPL installed four screens and projectors, as well as wireless mics and speakers, and a portable capture workstation that records events and presentations and uploads them to the library’s media site for access by students and faculty. In the iPearl Immersion Theater, 112 Christie MicroTiles (20-square inches each) extend in a curved array, 7 high by

16 wide. To facilitate communication with students, faculty and guests, Cisco digital media players feed information to 11 displays and three kiosks situated throughout the building.

The Creativity Studio was the most complex room of the integration. This configurable space can be turned into eight to 10 smaller rooms. Six Christie projectors are situated in pairs on opposite ends of the room. Two of the brightest projectors edge blend onto a 20-foot by 40-foot curved screen. Because of the open ceiling architecture, AVI-SPL employed Tannoy pendant speakers (very similar in look to pendant lights that hang from the ceiling). Video and audio signals in this area run over fiber connections, and receivers convert those signals to HDMI, which are then sent to the projectors. Video conferencing is available via connection to the Cisco C90 codec in the main IT workroom.

The IT workroom is, as AVI-SPL Project Manager Mike Cenzer calls it, “the brains of the system,” an AV/IT hub featuring racks of equipment that host media it sends over fiber. All the AMX control ties into here, as does Christie’s video processing Vista Spyder. IT staff scan an access card across the AMX MXT touch panel to start the system and manage devices, including video conferencing. That centralization also makes it easier for one person to operate and maintain the technology.

York says this IP-based system supports the research and mission of the building, which is to work as an integrated whole that supports the lifecycle of research: brainstorming,

“We designed to the cutting edge, to equipment that had just been announced. Put it in a 24/7 facility and you provide something that has an immense amount of value and redefines the library.”

critiquing, and the late phases that produce finished pieces. That system also provides a flexible environment where faculty and students can use any room, knowing the technology they need will be there.

**The Tools to Create Tomorrow’s Technologies**

The Hunt Library, which celebrated its grand opening in April, has already, it’s been profiled in numerous publications, including Time magazine. As one learns about each area of the library, the reason for its popularity quickly becomes clear: This is a versatile, empowering space. Through its digital media network, powered by Cisco, the university sends notice of events, announcements, and other internally generated content.

State staff and engineers use the Cisco TelePresence room to connect with other universities and companies. Areas like the auditorium and multipurpose area are used for lectures, watching live events and distance learning.

The Gaming Lab gave a home to N.C. State’s gaming research program, which is one of top 20 in the country. The program wanted a space that would allow different disciplines to collaborate. In this area, students play

and study video games for new and classic systems on Christie MicroTiles in a 5-by-16 array. Vista Spyder processors deliver a full surround set-up, and an AMX system manages the screens for gaming, windowing, and multi-led lighting. Users can use their hands like a computer mouse thanks to an interactivity touch kit from Christie.

Students, staff and faculty watch a variety of media in the Immersion Theater. Behind the seating area, staff use a 20-inch AMX Modero touch panel to manage the content. The Art Wall, located above the “Ask Us” area, displays high-resolution images as well as movies across its 8-by-15 array of MicroTiles.

In the Creativity Studio, students and engineering faculty deliver presentations on surfaces like displays, the walls and floor. Theatrical lighting helps create environments that are realistic and work in conjunction with the visuals. Everything – including the walls, projectors and displays -- is moveable, and the design offers easy access to equipment. Here, the Navy runs virtual training exercises by using audio visual solutions that allow them to simulate any vessel under any weather conditions and in any location.

“All the capability we hoped for is there,” York says.

At A Glance

**Company**

North Carolina State University

**Location**

Raleigh, N.C.

**Market**

Education

**Solutions**

Collaborative technologies, including video walls and video conferencing, enhance the Hunt library as a source of learning and research.

**Services**

AVI-SPL integrated advanced audio visual presentation and distribution solutions throughout the Hunt library.

**Technology Highlights**

- AMX control systems
- Biamp AudioFlex
- Christie MicroTiles
- Cisco video conferencing
- SMART Podium
- Sharp video displays

**About AVI-SPL**

AVI-SPL is a digital workplace services provider that works with organizations globally to improve team collaboration and unlock new business value. The largest provider of collaboration technology solutions, which includes its award-winning managed services, AVI-SPL’s highly-trained team works hand-in-hand with organizations worldwide – including over 80% of Fortune 100 companies – to strategize, design, deploy, manage and support AV and UC solutions that are simple-to-use, scalable, serviceable, and measurable to ensure business objectives are achieved.

**About Cisco**

Cisco Systems, Inc. is a worldwide leader in networking for the Internet. Cisco’s strategy is based on catching market transitions - the market transitions that affect our customers. With the proliferation of video and collaborative Web 2.0 technologies, the network continues to evolve from the plumbing of the Internet - providing connectivity - to the platform that will change the way we work, live, play and learn.

**Featured Partner**







**Images**

**Fig 1.1**  
This curved Christie video wall can be reserved for presentations.

**Fig 1.2**  
Faculty and student art is displayed on the Art Wall.

**Fig 1.3**  
An AMX control system manages audio visual systems throughout the library.

**Fig 1.4**  
The SMART Podium gives lecturers the ability to annotate presentations.

**Fig 1.5**  
Ceiling-mounted Christie projectors edge blend to produce large, seamless images.