

Completed in fall 2019, the \$135 million Charles Library at Temple University in Philadelphia spans 220,000 square feet.



## College Libraries Turn to Transformational Tech

By Lisa Kopochinski

Libraries have been centers for learning for centuries. These places of inspiration are the nucleus on many college campuses for students to learn and share ideas.

As the information gatekeeper, libraries have been challenged by technology and are repositioning themselves as cultural and learning centers for the digital age.

Cloud-based collections and applications, digital readers and open-source research data are challenging the notion of the traditional library. Technology frees up space and transforms modern libraries into immersive and collaborative experiences for knowledge sharing.

"College libraries are evolving quickly away from a 'fixed' technology model to a highly flexible model where technology is a pervasive overlay to all activities," said David Zatopek, vice president at Corgan Associates, Inc., an architecture firm headquartered in Dallas, with offices across the U.S. and in London and Singapore.

Corgan redesigned the library at Northeast Community College—a public community college near Mount Pleasant, Texas—as part of a multi-phase campus-wide program.

Completed in 2017, the project was part of an ambitious \$18 million bond program. Corgan's design strategy for this project was to make technology both pervasive and transparent.

"Critical was the recognition that many students leverage different devices for different learning tasks, and that they 'hand-off' from one device to another over the course of the day," explained Zatopek. "We didn't just design designated areas for technology, but designed throughout the project, flexible layouts and power distribution so that power for charging was at arm's reach anywhere in the library. This required careful coordination with the furniture selections and detailing of the power data pathways."

While five years ago many libraries were still organized into "fixed" areas—stacks, study, reference areas and dedicated areas for technology—in today's library, technology is pervasive.

"Like light, ventilation, temperature control, accessibility, technology is another overlay to the design that is an expectation, not an exception or something that becomes a fixed (and inflexible) feature or design element," said Zatopek.

For all the latest advances in technology—flat panel, high-definition displays, ever-increasing network bandwidth and ever-faster processors—he added that there is a time-tested technology that is even more important in today's library; power.

"AC power distribution is essential and a complex problem. Today's student routinely carries a laptop or tablet and a handheld device like an iPhone," explained Zatopek. "While USB power distribution is possible for tablets and phones, laptops currently still require the higher

Stantec was responsible for the implementation of the innovative automated storage and retrieval system (ASRS) known as BookBot at Charles Library.



Photo Credit: Michael Grimm Photography, courtesy of Stantec

Photo Credit: Corgan Associates Inc.



**Left:** Libraries, such as the Northeast Community College Library in Mount Pleasant, Texas, are becoming social hubs with flexibility in furniture arrangement, spaces that support a wide range of learning, and the addition of cafes.

**Below:** Critical to designing the library at Northeast Community College was the recognition that many students leverage different devices for different learning tasks over the course of the day.

Photo Credit: Corgan Associates, Inc.

voltage and current of a charger, which—in turn—requires 120v AC. Pervasive technology requires pervasive access to power. And, while not as glamorous or as visual as other technologies, power is the glue that makes a technology deployment work in true service to the students.”

Scott Sullivan is a principal for global design firm Stantec. He said libraries are turning more and more to digital and electronic resources for reasons related to space, storage, and maintenance concerns. A shift that leads to conversations about the positive and negative impacts of access.

“Digital collections can often be accessed remotely, and by more users at once, giving the library a greater return on their investment,” he remarked. “However, offering a greater percentage of collections in a digital format comes with equity concerns related to access that must be addressed. Libraries must pair this effort with an increase in publicly accessible electronic devices and digital literacy programs. An increased push towards open access resources brings challenges to defining what technically is or is not a part of the library’s collection.”

One project Stantec, with design partner Snohetta, is especially proud of is the \$135 million Charles Library at Temple University in Philadelphia. Completed in fall 2019, this 220,000-square-foot library houses 40 meeting and seminar consultation rooms of various sizes and types and includes roughly 1,600 seats for students in various configurations. All rooms are equipped with display technology and screen casting so users can share information on their phones or computers.

“Charles Library is committed to an all-mobile technology strategy providing laptops and charging banks on every floor to liberate workspaces from traditional desktops and allow users to find comfortable workspaces throughout the building,” explained Sullivan. “A serene, sun-filled fourth floor encourages more traditional students to meander through the stacks of the library’s 200,000 browsable volume collection surrounded by private study spaces along the perimeter.”

Stantec was responsible for the implementation of the innovative automated storage and retrieval system (ASRS) known as BookBot. The library located 13,800 new title volumes near the main entry, 260,000 volumes in browsable stacks, 31,000 special collection volumes in secure high-density storage, and the remaining 1.8 million volumes within the ASRS.

The primary logic of the BookBot is space reduction, which uses 11 times less space than conventional browsable shelving. With its compact footprint, the BookBot has allowed the university to expand student study space and relocate its Student Success Center into Charles Library.

“One of the largest such automated systems in any North American library, the ASRS essentially works like this,” explained Sullivan. “After a student requests a book online, a robotic crane goes into action in the concrete vault and delivers the entire matching bin to the librarian. The relevant book is then removed, with the robotic system delivering the bin and remaining books back to the vaulted shelves.



The entire process takes about 45 seconds. As of this date, there are fewer than 30 ASRS systems have been implemented around the country. The BookBot may not be the best solution for every library but works well with institutions that house significant research collections.”

As for where high-tech libraries will evolve in the next three to five years, Zatopek says libraries have already moved beyond their traditional role.

“They are becoming social hubs with the addition of cafes, flexibility in furniture arrangement and spaces that support a range of learning—from focused, heads down work—to collaborative group work,” he explained. “Emerging technologies such as AR (augmented reality) and VR (visual reality) will become part of the library, but in a negotiable, human-centered way. We are quickly moving toward a future where you won’t see the technology—just the results in great student outcomes.”

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