

PLANNING STORY

Change and Renewal for Existing Campus Libraries

Successful Strategies and Lessons Learned

by Ned Collier

Renovating an existing academic library to meet 21st-century needs requires rethinking both its program and design to create a vibrant, welcoming campus hub for all.

In the 15th century, Johannes Gutenberg introduced the printing press to the world, and mass production of books began. At that point, the archetype of the academic library as we've traditionally known it was born. Architecturally monumental and centrally located, these buildings were solemn repositories for ever-accumulating cultural and scientific knowledge. As meccas for individual study and academic advancement, they were ruled by librarians with a monastery-like devotion to silence.

But in the last few decades, the tech revolution has dramatically changed the ways in which we access and share information. Print books are no longer the primary resource for information, and a trip to the library is unnecessary when research can be conducted on a home computer or mobile device. In an era when college students have Alexa and Siri at their command, is the academic library building even needed? The availability of digital titles means there is no longer a need to acquire and house scores of volumes, and libraries have begun to lose both books and users.

But rather than sit back and let change render their jobs obsolete, campus librarians have started to reconceive their workplaces and academic mission. Successful strategies have included

- » Creating dynamic, interactive social and educational programming;
- » Integrating library services with academic methods and practices that reflect the evolving nature of teaching and learning;
- » Reinforcing the librarian's role in the curriculum; and
- » Recapturing the serendipitous discoveries of browsing by better understanding digital information production, organization, access, and sharing (Erdelez 2016).

Ultimately, by anticipating and planning for the hosting and curating of events, managing shared resources, pursuing proactive campus outreach that supports an expansive academic mission, and understanding opportunities for digital serendipity, college librarians, educators, and administrators have successfully reprogrammed the 21st-century academic library as vital and necessary.

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Of course, this success has led directly to one of the higher education facility designer's most pressing and interesting challenges: renovating the existing campus library for modern-day programs, many of which are not well served by traditional print-book-centered library design.

- » Establishing broad-based processes of community engagement;

So, whether an academic institution's existing library is a historic and beloved campus landmark or a less-than-loved mid-20th-century modern structure, it will require a thoughtful and well-planned renovation to appropriately serve academic communities that are now using their buildings in new and often very different ways.

My team and I recently renovated Babson Library at Springfield College in Springfield, Massachusetts, an institution enrolling 2,110 students. I'd like to share some of the issues we encountered and lessons learned during this project.

Robert Little was the driving force behind Cleveland-based Dalton-Dalton-Little Architects' modernist architecture, of which the 1971 Babson Library was a prime example. Little was a Boston-born Harvard University graduate who studied with Breuer and Gropius. His Babson Library was a Brutalist-style concrete structure featuring a *piano nobile* with a monumental concrete entry stair, faceted bay windows, brick infill panels, black-tinted glass, and a projecting third floor (figure 1). The elevated first floor was created by a mostly exposed basement and manipulation of the grades surrounding the building.

Figure 1 Babson Library Exterior Before Renovation



Building on 20 years of academic library design experience, my colleagues and I were tasked with remodeling this 57,000-square-foot structure into a modern Learning Commons to serve 21st-century needs and services.

In many ways, this meant virtually turning the building inside out.

LESSON #1: LOOK BEYOND THE BUILDING

The goal of the renovation was to transform this inward-looking library into a modern, outward-facing student learning center by creating a more welcoming façade

imprinted with a distinctive campus identity (figure 2). We began by looking beyond the building itself, exploring ways to better connect the library to the campus at large, both physically and visually.

Figure 2 **Babson Library Exterior After Renovation**



True to its Brutalist heritage, the existing library had a fortress-like presence. Moreover, it was physically separated from the campus by a street, a decaying monumental staircase, and landscape berms. At some time, a steel ramp was added to the stair to make the building accessible. To create a welcoming and inclusive design, we undertook the following steps:

- » Lowering the grade four feet to the existing basement level, thereby creating an accessible first floor;
- » Creating an entrance plaza and a rain garden;
- » Introducing a traffic-calming pedestrian speed table; and
- » Opening the entire campus-facing façade.

- » Removing the deteriorating concrete entrance stair and steel ramp;

We also provided new landscaping around the building. Careful attention was paid to selecting high-quality materials

and low-maintenance plants to ensure a durable and enduring environment.

Once the approach to the building was more appealing, we considered the building's façade. Most importantly, we removed brick infill panels on the south side of the structure and replaced them with windows, which are animated by external shading devices in the daytime and transparent at night.

Considering the site early in the design process made it easier to address how the remodeled structure would tie into the campus.

LESSON #2: UNDERTAKE A COMPREHENSIVE FACILITIES CONDITION ASSESSMENT, THEN PLAN FOR THE WORST

Creating a vibrant place for students required overcoming the problems of a rigid structure with a deep building footprint, little daylight, and numerous building systems challenges. The building had all the features typical of libraries of its era: cast-in-place structure, low floor-to-floor heights, absence of daylight, and poor accessibility and indoor environmental quality. There was a lot of work to be done, and the process began with a Comprehensive Facilities Condition Assessment (CFCA). The CFCA, standard on large-scale renovation projects, is a meticulous survey of all architectural and structural plans and conditions, as well as mechanical, electrical, and other systems, conducted before work begins. This allows for a more informed process from the start and greatly improves potential savings of both time and money.

The design team, including engineers and code sub-consultants, conducted a thorough assessment of the *visible* parts of the building. While the construction documents outlined an initial demolition phase, the aggressive construction schedule left very little latitude for unforeseen conditions. Following the initial demolition—and absent the original construction documents—the architects and

structural engineer worked with the construction manager to investigate the *underlying* structure. The downside to this approach was that the structural design documents were based on assumptions that had to be verified and, if necessary, modified according to discovered conditions.

While it is difficult to weigh a project schedule against the need to know more about the condition of an existing building, it's worth finding a balance that uncovers hidden conditions as early in the process as practicable—especially in the absence of original drawings. Even then, the overall schedule needs to conservatively allow for discoveries made during the demolition process.

In the absence of original drawings, structural modifications had to be made with great care. By placing enclosed rooms in the middle and reusing shafts, the mechanical, electrical, and plumbing system distribution is contained to the center of the deep floor plates. The structure is exposed at the perimeter open study areas, giving them the greatest possible ceiling heights along with the best daylight and views.

Prior to and during construction, the library was temporarily relocated to a nearby gymnasium. To minimize its stay, the design and construction teams committed to a 10-month construction period. The demolition phase and subsequent discoveries put the project behind schedule from the start. While the staff were able to move in and the Learning Commons opened on schedule, the building was in no way complete, and getting to completion was hard on all parties. So while the lesson learned here is about knowing existing conditions, the real lesson is in getting everyone onboard when things go awry.

LESSON #3: CREATE A MISSION WITH USERS

The new building program was built from the ground up with broad campus participation. The program works with the college's Humanics mission and hands-on curriculum to

provide seamless academic and technical support to students and faculty. The Humanics mission emphasizes a balance of body, mind, and spirit, and the design responds by creating a learning and working environment focused on health and well-being, with an emphasis on providing daylight and views.

When programming meetings began, the existing building housed eight departments without any underlying organization. Further, the college stated from the project's conception that the Academic Success Center must move from its current location into the Learning Commons. During early test-fit studies, the design team quickly concluded that all nine departments would not be able to stay. Working with the Office of the President and the executive committee, the design team proposed that only student service-based departments should stay in the building and all others be relocated.

The program was ultimately narrowed down to four departments—Academic Success Center; Teaching, Learning, and Scholarship Center; Library Services; and Technology Services. Our goal was to develop a design that would accommodate department-specific needs while also enhancing collaborative opportunities and improving overall learning outcomes.

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The design team worked with the core building users to write a project-specific mission statement:

[The mission of the library is] *to serve the academic and research needs of students, faculty, and staff. As the academic hub of Springfield College, it will provide an inviting, engaging, and technology-rich environment for the campus.*

The Learning Commons will:

- » *Support collaboration among students, faculty, staff, and the greater community;*
- » *Showcase the exceptional scholarship of the college community and beyond; and*
- » *Facilitate learning as a way of life.*

The renovated facility needed to deliver integrated academic services, and the different departments had to work as a unified whole while simultaneously supporting their individual missions. Understanding these goals required a great deal of dialogue with all invested parties as together we negotiated the building's particular program. While all felt comfortable with the ultimate plan, upon project completion we discovered that even the most thorough and proactive process can leave space between intention and reality. When different groups are brought together in one space for shared purposes, it can take a lot of getting used to. For some, the first year of being co-located was a challenge.

In the end, the building was programmed to deliberately mix the four departments—for example, the second floor is occupied by the library, technology services, and instructional design along with collaborative study spaces. Throughout the building, many spaces were designed to be adaptable according to each department's needs. For instance, at peak demand periods, the Academic Success Center can expand into adjacent spaces.

While we made sure to be aware of and responsive to the college's mission and administrative priorities, we were also careful to study and engage with the student population. It is important to ensure that the outreach process is as inclusive as possible so all potential uses of the building are understood. Being sure that everyone is heard not only benefits the building, but also increases goodwill on campus. For example, furniture selection was a central part of the design process for the Learning Commons. Great care was

taken in developing the furniture package, including an on-campus “test fit” of all significant furniture pieces with feedback from students, faculty, and staff.

LESSON #4: FOCUS ON SUSTAINABILITY AND ENERGY EFFICIENCY

Of course, the most sustainable aspect of a library renovation project is the reuse of the existing building. In the case of this project, we kept the concrete structure, mechanical rooms, shafts and stairs, electrical rooms, restroom locations, major stormwater drains, and three-quarters of the building enclosure. Retaining the concrete structure shaped many of the design features: the number, size, and location of architectural floor openings; the methods of distributing the perimeter hydronics; the use of an under-carpet power distribution system; and the implementation of a factory-built partition system. Reusing shafts and building service locations minimized structural impacts and supported the open perimeter concept. Reconfigured restrooms created gender-neutral facilities throughout.

Designers and owners have many additional opportunities to improve sustainability, resiliency, and energy efficiency. These are not specific to a campus library, and in any major renovation of an existing structure, all chances to deliver cost savings and contribute favorably to the environment should be taken advantage of. The following are some of the initiatives we undertook:

- » We remedied deficiencies in the existing building envelope through new thermal windows, additional wall and roof insulation, and more efficient perimeter heating systems.
- » We installed new water-saving plumbing fixtures throughout the building to reduce overall water use and provided bottle-filling stations to reduce the use of disposable plastic bottles.

- » The existing building had minimal windows to the east and west, primarily to keep daylight out of these challenging exposures. With a new focus on comfort and openness, we increased natural lighting throughout by adding windows to the south facade. All new replacement windows are clear, low-e glass.
- » We addressed solar heat loads on the south façade through external shading of the windows, including louver blades, aluminum composite panel shades, fritted and colored glasses, and existing overhangs, and we added an eggcrate sunshade to the fourth-floor windows.
- » We used daylight harvesting in combination with automatic artificial lighting controls as a major strategy benefiting both energy-use reduction and occupant well-being.
- » We added a new 1,500-square-foot rain garden adjacent to the main entry to capture runoff from the site, diverting stormwater from an overburdened city system. Planted with native species that require no fertilizers or pesticides and remove pollutants, the rain garden reduces flow rates and allows increased infiltration back into the water table. (Stone steps leading down into the rain garden encourage students and visitors to gather and sit, bringing sustainability and stormwater management to their attention.)
- » The new HVAC system is equipped with high-efficiency, condensing-heat hot water boilers with variable speed hot water pumping for heating as well as with a magnetic-bearing, high-efficiency air-cooled chiller with variable speed chilled water pumping for cooling.
- » The air handlers providing ventilation and space conditioning are equipped with energy recovery wheels to recover energy from exhaust air and pre-heat/pre-cool ventilation air.
- » We included efficient LED light fixtures throughout, with lighting controls that allow dimming and multilevel

lighting to maximize energy savings, provide reduced nighttime light levels, and extend operable life.

- » The electrical system has metering capability to monitor the power consumption of outlets, lights, and mechanical equipment separately, allowing users to collect data on the building's performance.

These steps help ensure that Springfield College's new campus library will be vital for decades to come, healthier for students and workers, and a contributor to the college's fiscal health.

LESSON #5: DESIGN FOR COMFORT AND WELL-BEING

At the time our client's library was first built—and for centuries before that—academic libraries were very internally focused, with priority given to storage of and access to print materials. Abundant sunlight could be damaging to historic texts, so designers were careful to ensure that natural light did not penetrate deep into the building. Quiet study was favored, gathering areas were rare, and, in general, user comfort was an afterthought, if it was considered at all.

Today's campus library is a different breed entirely, a sort of hybrid of the traditional library and the more casual campus center. The design focus is outward, inviting the academic community within. This can require an almost complete reconception of an existing building's interior floor plan as well as its exterior façade.

Emphasizing a balance of body, mind, and spirit, our design of Springfield College's new academic library was meticulously planned to deliver learning and working environments informed by a focus on health and well-being.

We installed controlled daylighting measures to enhance productivity and connect the library's occupants to the natural environment. While shared spaces are located at the

building's perimeter, virtually all interior spaces are provided with borrowed light and views.

One of our key discoveries post-occupancy is that students really want to take ownership of the library's furniture and layout. As the library has evolved into a gathering space, furnishings are being used "harder" than expected—students like to rearrange them, sleep on them, lay on them, create larger seats by pushing together smaller seats, etc. Given such use, it is important to choose durable fabrics and materials and consider installing wheeled seats and tables. It's clear that mobility is important, and while much of the furniture we used for this project is on wheels, in retrospect, we could have done more!

In assessing possible improvements, it was vital to remember that we were designing for the long-term health of the building occupants and the community at large.

LESSON #6: DESIGN FOR FUNCTIONAL FLEXIBILITY

By working closely with administrators, faculty, and students well before the renovation began, we could be assured that the project outcome would satisfy similar but sometimes contrasting requirements.

Programmatically, our client's new library is home to four departments working in unison to improve learning outcomes, enhance collaboration, and build student retention. This new program is a leap forward for the college in meeting 21st-century student needs and expectations. To help make that leap, we designed the new library to offer

- » Open, flexible study spaces for group collaboration (figure 3) and individual study, including an "after hours" lounge space for students seeking a quiet place for individual work at any time of night.

Figure 3 **Collaboration Corner**



» Ready access to technology—computer stations, collaboration stations, media services and support, and ample, simple whiteboards. The building is filled with educational technology resources that serve students and the community.

» A one-stop “help desk” providing students with immediate assistance with information requests, reference services, and referrals to student support services (figure 4).

Figure 4 Help Desk



- » Academic support services including a writing center, tutoring, and learning support and assistance.

The first floor (previously the building's basement) now houses a 24-hour Reading Room with information and technology services desks. A new monumental stair (figure 5) rises to the second floor, which is home to the "Hub Lounge" open study space and a technology-rich and spatially flexible

collaborative presentation space known as the Forum. The second floor also houses research consultation and digital media workstations. In addition to open study space, the third floor houses group study spaces (figure 6), the tutoring center, and flexible instructional spaces. The fourth floor houses the print collection and teleconference-enabled classrooms and is dedicated to quiet study.

Figure 5 Main Staircase



The library has been transitioning from physical to digital materials for many years. Since Springfield College's curriculum is primarily science based, the library is focused on journals, which were the first library research materials to be provided exclusively digitally. The library anticipates that its physical collection will continue to shrink, and as it does the library stacks will be incrementally removed and replaced by more study space.

The library's collection development policy emphasizes the purchase of contemporary materials where the intellectual

content supports the college curriculum. Digital versions of resources are preferred as they allow the most flexible use in terms of time and location; however, print materials are collected when that is the most appropriate and available format. Back files of digital resources may be purchased if affordable and deemed beneficial to the collection. Librarians work with faculty members to identify digital texts to use in their courses, which may include free open educational resources, eBooks already owned by the library, or eBooks that should be added to enhance the collection.

Figure 6 **Group Study Space**



In addition to distributing services and technology across all four floors, we added whiteboards throughout in open spaces, lounges, offices, and conference and group study rooms. We also provided mobile whiteboards that can be rolled into any informal gathering area, and all have been proven to

be heavily used. It is important to consider lighting where whiteboards are installed so that they can be comfortably used whenever. One point we did not consider was using a darker shade of paint on adjacent walls, where whiteboard eraser dust tends to gather!

When renovating an existing structure to meet evolving needs, a cost-effective and functional approach is to introduce flexible design products and solutions. In this project, we installed a factory-fabricated wall system. Certain manufacturing methods and material choices lessen the waste stream, carbon footprint, and amount of energy used. By replacing traditional stick-built construction, the wall system helped significantly reduce onsite construction waste, shortened an already tight construction schedule, and eliminated onsite painting where the partitions were installed. While initial feedback is positive, we're monitoring the product's long-term durability and acoustics.

And, of course, acoustics are an important point to consider: while the modern library is a more social and collaborative space, students still use it for quiet, individual study. This is challenging in a more open floor plan, and dedicated space for this must be considered. As noted above, we designed one entire floor for quiet study.

The Learning Commons is, by design, a mediated learning environment. By combining library, academic technology, tutoring/testing, and teaching support services with flexible and technology-rich spaces, students, faculty, and staff can most effectively work together. The program provides a wide variety of such spaces: informal gathering spaces, open group study and quiet study spaces, multimedia and research consultation workstations, reservable group study and instructional rooms, a video-conference room, and the technologically and spatially flexible Forum designed for presentations, meetings, and experimentation with teaching practices. Available technologies range from basic whiteboards to sophisticated interactive screens and media production capabilities.

I would caution that the introduction of new technologies into an academic library—while quite worthwhile and valuable—can result in the need for additional support for users. We learned post-occupancy that some of the new technology required a steep learning curve in order for faculty and

administrators to master it. Therefore, it's a good idea to identify a "technology champion" who can take ownership of the learning and teaching process.

CONCLUSION

Transitioning a campus library to a Learning Commons is a unique renovation project involving many different stakeholders invested in its outcome, from administrators and alumni to students, faculty, and library staff. Successfully reinvigorating and refocusing this building type is both vital and challenging.

As in any complex task serving sometimes competing interests, making and taking the time to hear concerns, address issues, and thoroughly consider all potential problems—from structural to environmental, functional to aesthetic—is essential to its ultimate success.

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In the case of Babson Library, our efforts transformed an iconic but isolated and interior-facing structure into an extroverted building that welcomes users and has become a hub for socializing, collaborating, researching, and studying.

While future technological advances may once again prompt new design strategies, we expect that this fully modern Learning Commons will remain a welcoming and efficient center for collaborative approaches to learning supported by innovative learning technologies. We believe that its sustainable, energy-efficient, and resilient design will serve the Springfield College community well for years to come.

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