

## A phased approach to creating updated user spaces

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### **Abstract:**

This case study will tell the story of how one academic library planned and created new library spaces over a period of ten years with limited resources but tremendous need to address multiple areas. Affordability was a primary concern, forcing a phased approach to renovations with a need to prioritize several issues, understanding that every penny counted and that it was important to truly assess and connect with stakeholders as each priority was considered. Academic libraries have been under pressure to move away from being warehouses for materials and to reinvent themselves into more user-centered institutions. "What does this mean for the spaces that libraries occupy, and how does that relate to adding value and relevance to the larger institution?" has become a common question for academic libraries in pursuit of remaining relevant.

**Keywords:** academic libraries | renovation | library planning

### **Article:**

This case study will tell the story of how one academic library planned and created new library spaces over a period of ten years with limited resources but tremendous need to address multiple areas. Affordability was a primary concern, forcing a phased approach to renovations with a need to prioritize several issues, understanding that every penny counted and that it was important to truly assess and connect with stakeholders as each priority was considered. Academic libraries have been under pressure to move away from being warehouses for materials and to reinvent themselves into more user-centered institutions. "What does this mean for the spaces that libraries occupy, and how does that relate to adding value and relevance to the larger institution?" has become a common question for academic libraries in pursuit of remaining relevant.

The future of library spaces will lie in the ways users and stakeholders have changed and in what attributes hold value for them, both individually and as a group. Many of these changes involve offering patrons choices related to their use of space and providing a flexible, inviting environment for accomplishing their goals. Although our changes were limited financially over these ten years, making these changes gradually has the advantage of engaging users along the

way to ensure that decisions made in the present will also support the future or provide a foundation for future growth.

This case study offers a view of renovating a library in phases, with the intent of not only updating spaces for current needs but also providing appropriate spaces in the future. Building and renovating these areas gradually allowed for continuous improvement as well as an analysis of what was learned in the process of assessment and environmental scanning in order to anticipate future directions.

## **OUR BEGINNINGS**

"Arrangement provides flexibility, with ample areas for staff work and full service to college community." These words were written by the dean of the University of North Carolina at Greensboro, then called Woman's College, in December 1948. He was describing the new library building being constructed at the college and which is still the main library. When it opened in 1950, the library became a showcase for college librarians and architects, with the dean himself being considered a recognized expert on college library construction. This beginning and the influence of the dean impacted how academic libraries were viewed as learning spaces within the region for years to come.

Since those humble beginnings, the library has grown and changed in many ways, trying to keep pace with a burgeoning campus community and investing in developing a collection that supported the mission of not only the college but also the surrounding community. Growth of the campus and expansion of library services began almost as soon as the doors to the library opened. Development and expansion of campus program offerings, higher professional degree opportunities, and the transition from Woman's College to the University of North Carolina at Greensboro (UNC Greensboro) significantly impacted the library in holdings and status. A nine-story book tower, connected to the main library building, opened in 1974, providing space for a growing collection along with enhanced services and allowing librarians and staff to move forward with professional activities and program development to support the university's mission.

## **THE LEGACY INSTITUTION**

These two distinctly different buildings-the main library and the book tower, connected across the first floor-were built before the introduction of the Internet and the proliferation of personal electronic devices. Updates to building codes were grandfathered in many cases, leaving the infrastructure static, and esthetic offerings were not prioritized, leaving little room for different uses of the space or critical review to improve services. In the twenty years following the opening of the book tower, the library focused on material acquisition, and the resulting space considerations became largely an effort to maximize physical content. While the organization was focused on acquiring more physical materials and resources, the introduction of computers and other technology in the 1990s brought new challenges to the building's infrastructure (power, HVAC, etc.). Changing material formats required special housing or equipment for access, and the Internet, in addition to having an impact on access to resources, revolutionized how users sought information, modified study habits, and transformed research processes. To accommodate

some of the changes, a variety of small modifications of select spaces occurred, but it became increasingly clear that major changes needed to happen.

A constant factor in the history of the library is its fulfillment of a significant need within the university community: to support students. Students needed and used the library to further their educational experience and to fortify the skill set needed to succeed in life. However, foot traffic to the library was decreasing even before the advent of computers, and the library was seen as the legacy of a bygone era—a solid and stable institution, but too old and too outdated for current student needs.

As the academic community on campus grew, the library tried to keep up with students' research needs. Space for collections was expanded in the 1990s, but space for housing archives and accepting manuscript collections soon became full, while space for students to study and gather for collaborative work was reduced to accommodate more runs of shelving. By the early 2000s librarians realized that the library needed to revisit space priorities and update organizational needs as they related to fulfilling the library's mission to support the academic needs of the campus. Driven by the changing needs of students, library administrators recognized the need for a large-scale update. A survey in the June 2006 issue of the *Chronicle of Higher Education* listed having a good library as the second most important reason identified by prospective students for choosing a college. Armed with this information, library administrators became motivated to revisit our status on campus and move forward from our legacy reputation.

In 2006 library administrators developed a list of future space design needs in accordance with changing user expectations. This discussion evolved from the following facts:

From 1974, when the book tower was opened, to 1995, when the tower reached its peak capacity of materials for which it was built, twelve thousand linear square feet of shelving was added to tower floors along with a remote storage facility outfitted with compact shelving that reached capacity by late 1999.

The Special Collections Department was at capacity and could not accept major gifts or manuscript collections from potential donors.

Since 1995, seating capacity for students had been reduced by 50 percent to fulfill the needs of the growing collection. By 2005 student traffic had begun to increase again as students sought computers and equipment provided by the library. By 2008 we had seen a 42 percent increase in gate count, and the 14,648 square feet of common user space, which included lobbies, foyers, and hallways, were not enough. We also realized that staff work areas and active service points were inadequate.

Student study options and, in particular, group student space and labs were limited, in contradiction with the growing trend for students to study more in groups and use technology in a group-study mode.

The student population had increased at a faster pace than originally predicted, and this meant that with more residents living on campus, the need for library space increased as students needed more space for interactions and academic work.

The library undertook an interior upgrade project in 2005 and once again became an inviting place for students to study and spend time for a variety of reasons, but the upgrade was focused on esthetics and did not increase capacity.

The library had created two unique collaborator spaces to help facilitate group study with the aid of commonly shared electronic devices. These spaces turned out to be in high demand by students, and the concept needed to be expanded to meet student need.

Another measure of change was the library's instruction lab, known as the CITI Lab, built with the book tower in 2001. This lab was used for library instruction classes and seated twenty attendees with computers for hands-on instruction. Average class sizes by 2010 were closer to forty, so the lab was unable to accommodate the need.

These facts, common to many academic libraries, reflect the changes in higher education that create both an impact and an opportunity for academic libraries to expand services beyond warehousing resources and to create functional, inviting spaces that support curriculum.

## **CREATING THE VISION TO CHANGE**

To be the university's library of the future, it was important for us to gain perspective about what was wanted and needed to be. And within the professional literature, it was not uncommon to see other academic libraries researching and investigating ways to make the change from being legacy institutions to being actively involved in the learning activities on campus and creating collaborative knowledge opportunities.

In a paper presented at the "Visions of Change" conference at California State University (CSU) at Sacramento in January 2007, David Lewis outlined a new model for academic libraries that would address current needs over the next twenty years.<sup>1</sup> Based on what was known at the time about changes to the profession and technology, Lewis's assumption for this model wrapped professional values around the need for physical changes to keep academic libraries in line with developments at their home institutions. Paraphrased, those assumptions were the following:

Libraries are a mechanism to provide a means, not an end, for knowledge creation. Mechanisms must adapt as needed to be able to subsidize information and knowledge for end user needs.

Disruptive technologies will drive changes in libraries, and libraries must recognize this shift and react appropriately to ensure continued support.

Real change must be deep, at foundational levels, in order to sustain the purpose.

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<sup>1</sup> D. W. Lewis, "A Model for Academic Libraries, 2005 to 2025" (paper presented at "Visions of Change," California State University at Sacramento, January 26, 2007).

Libraries have a historical and cultural significance that provides a window of opportunity to make changes that keep this connection, but that window will not always exist if it is not nurtured and properly maintained.

One component of Lewis's model was space. Specifically, he called for the redevelopment of the library into informal learning space, equipped with the needed attributes and infrastructure to satisfy the needs of informal learning. Many models now exist because academic libraries have worked collaboratively to identify the needs of students and to stay in touch with changing learning styles, new instructional methods, and new expectations for how the library supports the educational experience.

At the same time, some students expect the library to be their haven for quiet study, protected from the noise of dormitories, student centers, and other high-traffic areas. These students and those serious researchers need a library designed for study, research, and reflection. The library is no different now than earlier in seeking to serve the diverse needs of students and faculty, individually or en masse.

About 2005, early initiatives at UNC Greensboro to spur changes that supported the development of a new learning environment included the creation of "collaboratories," offering enclosed group-study areas with technical support, implementation of a 24/5 schedule during fall and spring semesters to allow round-the-clock access to the physical building, and allowance of food and drink in the building to give students an opportunity to work and multitask in the library as they would in other places.

Space and resource limitations, however, caused these early efforts to fall short of what our campus needed. As a result, the constraint of available space became a grave concern about our future ability to serve students and faculty properly. The library administration determined that a large-scale assessment was needed to help guide future initiatives and investments for a new generation of learners.

## **THE CHANGING CLIMATE FOR ACADEMIC LIBRARIES**

Considering the academic library as a pseudo environment for future professions, addressing the ways libraries as learning spaces impact learning activities is useful for understanding student needs as space needs to be renovated. The professional literature has addressed changes occurring in higher education along with related pedagogical activities occurring on campuses and has provided many examples of factors to be considered by academic libraries seeking to update and modify their spaces.

As these changes occur, traditional methods of providing space for services and resources stewardship have given way to a deeper focus on learning attributes and ways in which the library can play a significant role in non-classroom learning. With regard to spaces created for

learning, we considered the following attributes from a report prepared for the Scottish Funding Council in 2006 concerning how learning occurs as we planned our renovations:<sup>2</sup>

**"Learning through reflection:** *Studies into cognitive science have demonstrated that individuals who have the opportunity to reflect on information, to evaluate their own learning process and to identify for themselves new directions for study, are more effective. Learning through reflection is by necessity a solo activity.*" For us, this attribute reinforced the need to maintain an element of quiet space as well as provide private opportunities for students to study alone and undisturbed.

**"Learning by doing:** *Originating with seminal works by Piaget in the 1950s there is now much evidence that actively engaging in and working through practical tasks can assist learning. This might include computer-based simulations or physical simulation of real life environments. Learning of this type can include both group and solo activities.*" This attribute demonstrated much of what we perceived to be changing in the classroom and encouraged us to consider more open spaces with tools and equipment (e.g., portable wipe boards) for students to be active. This concept also laid the foundation for plans for a Digital Media Commons, discussed later in this chapter.

**"Learning through conversation:** *Central to the theory of social constructivism, learning from active discussion with teachers and other students is an incredibly effective way of improving learning outcomes. Learning through conversation is by necessity a group activity.*" This attribute motivated us to consider collaborative needs related to group work and thus drove the design of collaboratories and other group spaces equipped with technology to facilitate group collaboration.

These ideas, with early consideration of changes in teaching methods, became the foundation for assessing what twenty-first-century students need as they prepare for professions that are also changing in our increasingly complex society. We knew that assessment was a critical component for providing the evidence needed to provide funding for shifting paradigms. To this point, our assessment had consisted of in-house surveys and discussions with students, but it was time to seek a professional point of view.

## **SPACE ASSESSMENT STUDY FOR THE LIBRARY**

In 2008 a study was conducted with a designer and then matched and assessed with stakeholders to establish a priority of renovation projects as finances permitted over time for the main campus library. With each component, project assessment activities were engaged in order to identify and react to changing space needs. This approach established a "trend of changes" to library space with data and perspectives that informed future space needs. This assessment was important in order to link desired learning outcomes to renovation designs and operational

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<sup>2</sup> AMA Alexi Marmot Associates in association with haa design, *Spaces for Learning: A Review of Learning Spaces in Further and Higher Education*, Scottish Funding Council Report (London: Alexi Marmot Associates, 2006).

concerns, keeping in mind that, strategically, decision making was impacted by political and economic factors, as acknowledged at the Learning Spaces Colloquium in 2011.<sup>3</sup>

The space assessment study, conducted by a local architectural firm, provided recommendations for the use of space at the library over the next ten years, before an expected library addition that was included in the campus master plan. The goal of the study was to identify appropriate changes in existing spaces to accommodate growth and expanding service and materials needs. Specific attention was given to the following:

- People-oriented spaces and service points, including additional group-study space, individual study options, additional collaboratories, and other requested service needs as demonstrated through assessment measures
- Expanded options for specialized materials such as archives, special collections, and government documents, with an assumption that remote storage options are available for lower use and duplicated format items
- Increased space dedicated to instructional use in order to accommodate larger classes needing research skills instruction
- Better use of existing areas that have traditionally not met their full potential or for which the purpose has changed since original conception

This study, completed in May 2008, featured a programming phase in which library faculty and staff provided input as well as two presentation meetings in which ideas presented were discussed and feedback collected. The space consultant also employed architectural design specialists who had library experience, structural engineers who were able to evaluate the technical requirements needed, and mechanical engineers who could determine whether infrastructure components (electrical, data, and plumbing requirements; HVAC; etc.) could support the recommendations.

The final recommendation was packaged, as requested by the dean of University Libraries, in five phases that would cost approximately \$1 million per phase to implement. Because the library would need to find funding for this project, a phased approach would allow the changes to be addressed in steps. These steps could be linked but would still be considered separate pieces of a master vision for updating the aging structure into spaces that inspired learning and met the goals established earlier for space needs.

These recommendations affected each floor of the main building and the first two floors of the book tower. The recommended work also accounted for future anticipated construction and proposed student traffic changes throughout the building. In total the recommended changes would provide the following:

- Increased space available for users in both individual and group-study activities, adding approximately fourteen thousand square feet to double current capacity

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<sup>3</sup> M. A. Crumpton, "Having the Conversation: The 2011 LSC Colloquium," *Journal of Learning Spaces* 1, no. 1 (2011).

- Opportunities to enhance services and provide better access for students working at nontraditional times
- Expanded space allocated to Special Collections and University Archives
- Space to house a larger instructional lab to seat at least forty students per session
- An alternative location for the print government documents collection
- Recommendations for people-oriented spaces and service points that would include additional group-study space, the Digital Media Center, the Data Services Center, current periodicals, microform readers and materials, and electronically supported group and meeting space

A separate initiative was being developed by administration to obtain additional remote storage space in order to free current *library space* of *low-use* items and allow the expansion of new services and materials needs. The library space assessment included specific recommendations related to the removal of materials and to remote storage options that would be needed because of materials displacement.

It should be noted that although the architects did work with library staff on the programming needs for the organization, other assessment activities related to students and faculty were conducted by library staff to recognize the end users' desires and their use of the space. Assessment methods such as surveys, observations, focus groups, and individual interviews were employed to bring all the stakeholders into the project. Summarized findings indicated that students valued space over materials and that variety and flexibility were needed for space, furniture, and aesthetic options.<sup>4</sup>

## **THE LIBRARY RENOVATION-SCOPE OF WORK**

Because of the 2008 recession and uncertainty about the status of future monies for additional renovation phases, phase 1 of the renovation represented a modified version of the May 2008 Space Assessment Study and incorporated desired elements from phases 1 and 2 of the original study. For this reason, fixture, furniture, and equipment responsibilities were removed from the project for the library to address on its own.

Conceptually, the following were identified as priorities for phase 1 with limited funding:

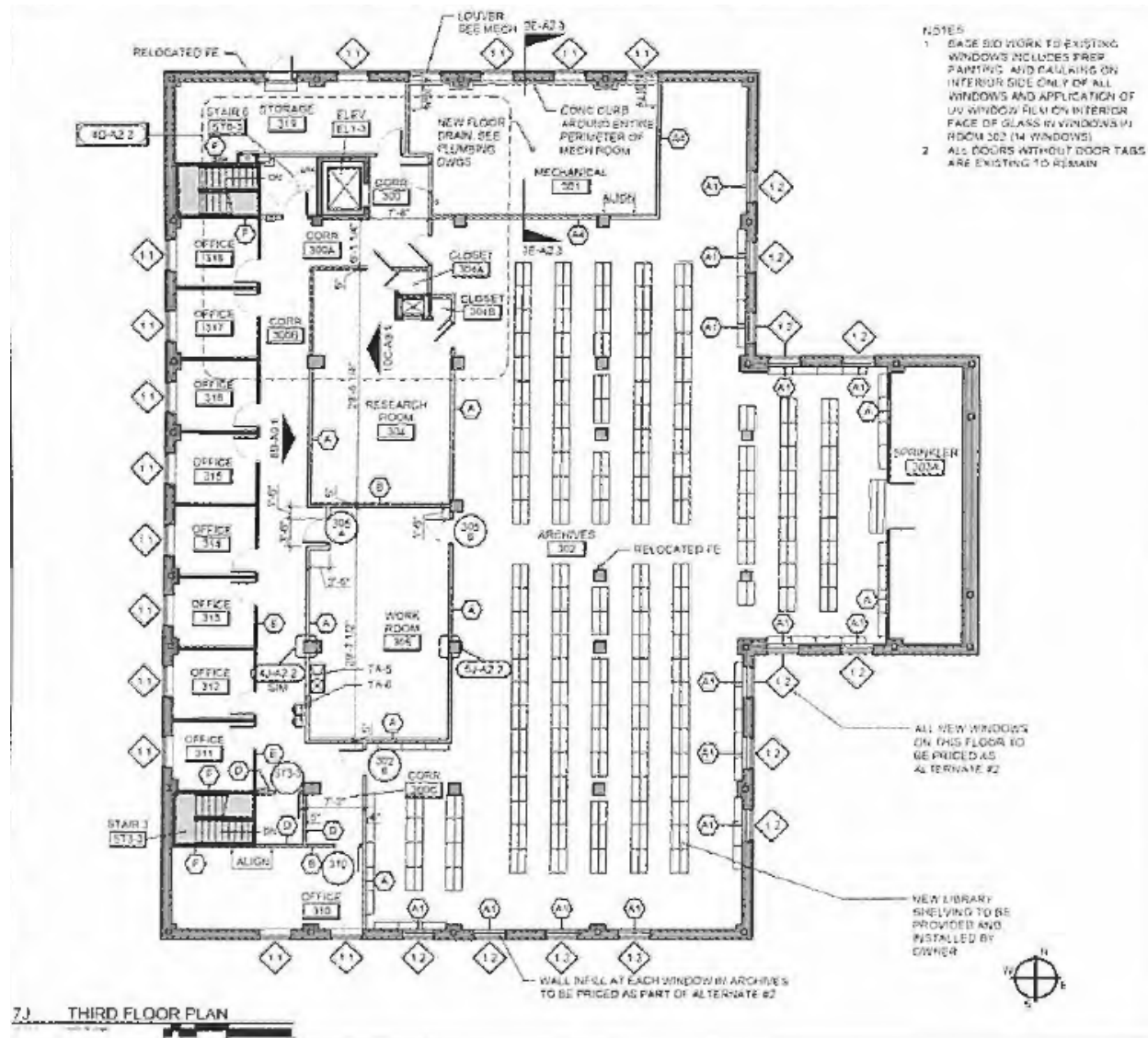
- Renovate the vacated third floor (main building) area to provide archive space for the library's Special Collections. Third floor work includes evaluation of the floor structure, repairs to the exterior windows, installation of a new HVAC system, electrical improvements, and a new fire suppression system.
- Provide or renovate offices, a small reading room, and a storage space in the same area for staff use.

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<sup>4</sup> M. Crumpton and K. Crowe, "Using Evidence for Library Space Planning," in proceedings of the 2008 Library Assessment Conference, "Building Effective, Sustainable, Practical Assessment," Seattle, WA, August 4-7, 2008, 51-64.

- Renovate the basement level (main building) so the library can relocate the Government Information and Data Services Center, newsroom and study space concepts, and a library storage area.
- Modify the basement main stairwell access.
- Evaluate building code and accessibility code issues and incorporate required improvements as part of the project.

This new phase 1 was completed in 2010 and provided significant improvements to the Special Collections and University Archives Department for the library. But it also set the stage for our realization of what we could do in steps without a major, overall building expansion or renovation. So completing this phase was significant for the motivation of forthcoming efforts. And the work on the phase itself was significant for showcasing the kind of impact that renovation can have on older spaces. Figure 10.1 is the drawing of the completed third floor in the main building, which, before renovation, was an open, empty storage area.



**Figure 10.1.** Third floor plan

This area now provides environmentally appropriate space for collections, meeting and work space for projects and activities, and office space for staff whose work includes processing and collection configuration. It also allows space previously used by staff to be developed for another need-space for research and scholarly activity.

## **DESIGNING THE RESEARCHER SPACE**

The library in recent years has seen explosive growth in its archive and manuscript collections as well as in other areas of Special Collections. Space was identified for repurposing and expanding these areas, and an assessment was conducted to identify the important attributes that needed to be addressed from a researcher's perspective. The Special Collections and University Archives Department was visited frequently by students, faculty, university staff, and individuals from outside the university who were conducting research with materials owned by the library. With the renovation of the third floor described earlier, these visits became more frequent, and proper accommodations were needed to adequately provide these services.

An assessment was designed to identify the typical researcher's needs related to type of work and physical expectations, such as lighting, temperature, work space, and available equipment or tools. We executed an electronic survey of recent researchers that provided talking points in subsequent interviews of randomly selected researchers. Demographic information was included as well as the classification of internal or external, meaning the individual's affiliation with the university.

The following criteria were compiled from the assessment related to establishing new research space within the library:

- Access to needed documents and restrictions placed on use and viewing
- Access to online materials and to tools used during physical review of materials
- Available equipment or tools (copier, scanner, etc.)
- Level of service expected relating to knowledge of materials, policies and authority control, and privacy issues (important for staff adjacency impact)
- Comfort features such as lighting, seating, table space, noise control, and temperature
- Logistical issues such as hours of operation, security, signage or locating information, and allowance of personal possessions

All these factors were critical for creating an environment conducive to productive research in our Special Collections Department. It was important to upgrade space dedicated to researchers as an indicator of the continued growth and significance of the various materials we were collecting and curating.

The findings from the assessment activities were compiled and presented to the designers to incorporate into their drawings and schematics for the designated space. Some items that dealt more with policies and procedures were forwarded to the department for consideration in managing and operating the new space. An added value of this activity and the related examination of the space were learning how to better market the space and collections to internal

university researchers as well as external researchers coming from the community or out of town.

## **THE LIBRARY ELEVATOR PROJECT**

In 2012, as part of a campus repair and renovation initiative, the elevators at the library were renovated for the first time since their original installation—1950 for the main building single car and 1974 for the book tower cars. The three-car traction elevator group in the nine-story tower and the single-car traction elevator located in the 1950 four-story portion of the library were completely modernized and upgraded. Improvements included new solid-state microprocessor-based control systems, new hoistway motors, call operating systems compliant with the Americans with Disabilities Act, and upgrades to each elevator machine room.

This project occurred in several stages, with access to two of the three elevators in the tower being discontinued initially followed by discontinuing access to the third in order to facilitate the work. Staggered work ensured that patrons with accessibility needs, such as wheelchair access, were accommodated properly. Patrons were encouraged to use the stairways in order to access higher floors or move between floors in order to reduce wait time for the remaining elevator in service. A campaign to encourage stairway use included a contest called "I climbed the Library," the health benefits of which were promoted by a local county health organization. The four elevators were completed on time with no incidents, and they now provide a fresh (and quick) uplift to the experience of visiting the library.

## **LIBRARY OFFICE SPACE ASSESSMENT PROJECT**

Library staff spaces needed to be reviewed and considered for upgrades as well, so in 2012 a plan was developed to address some of the issues for staff offices that had been impacted by previous construction activity. Some spaces were vacated on the second floor as part of the materials move for the third floor renovation project. The original intention was to move the Digital Projects Lab, which had been temporarily relocated off the third floor, into this space adjacent to its home administrative department. We learned, however, that this space did not have the appropriate classification for the required occupancy. The following were goals and requests regarding engagement of a space consultant to provide the best recommendations for the use of *this* vacated space on the second floor.

The purpose and scope of this project was to assess and identify the best options for the existing space and accommodate other changes that had occurred or were being planned. These were the priorities that needed to be accomplished:

- Conduct a programming exercise in order to find a suitable location for the Digital Projects Lab, keeping in mind future growth expectations with supporting infrastructure and appropriate attributes.
- Address the specifics of the vacated space and provide options for the best use of that space with needed modifications for egress or any issues related to occupancy.
- Identify areas of flexible space that could be used for special projects or short-term, grant-related projects for both people and materials.

- Consider options and recommend alternatives in terms of other changes or related rearrangement of other departments or functions.
- Provide cost estimates associated with recommendations so that budgetary concerns can be addressed.

Ultimately, with input from outside designers, an internal campus project was initiated that provided for a modification to the second floor of the main building, housing staff and services. The scope of the project was to place the Digital Projects Lab and its accompanying administrative department into renovated space that rejoined the Digital Projects Lab with the resources within the department. This arrangement called for extensive work to HVAC systems and to electrical and network ports as well as provision of partition-based furniture for staffing needs.

## **CREATION OF THE DIGITAL MEDIA COMMONS**

At this point, the original five-phase plan from the 2008 study was off track because funding never met the expected levels. The next greatest priority, informed by that study, was to create a multimedia lab to help the library embrace new and emerging technologies, so the library sought funding to develop a multimedia center. Envisioned was a center that could support curricular needs of students in creating a variety of multimedia products, including video, advanced software for media editing, and podcasts. This project supported goal 3.5 of the university's strategic plan (2009-2014), which included the initiative "infuse critical thinking, communication and information literacy throughout the undergraduate curriculum (21st Century Skills)." Our research and environmental scans of similar uses of space revealed that students are increasingly required to produce media for their classroom assignments, so investment in modified space was justified. Furthermore, graduates of the university are expected to develop media in many professions, and this center was seen as an opportunity to prepare them for future career requirements. A campus initiative called "Communication across the Curriculum" was planning to add digital communication to its services along with writing and speaking consultations in order to offer students "transferable skills for life, civic participation, and work in a global society."

There was, however, no technical support for media creation by students other than students in the Media Studies Department. This lack represented a major gap in essential services for twenty-first-century students. The multimedia center would follow the model of the university's Writing and Speaking Center by providing consultants to assist students and by including the appropriate equipment, software, and spaces needed for multimedia creation.

In fall 2009 a task force on campus had been charged with exploring the need for a multimedia lab for students at the university and the possibility of housing it in the library. The task force researched similar services at other regional libraries and peer institutions. We also researched what services were available at the university for students and conducted a needs assessment of students. This task force was comprised of and collaborated with experts on campus familiar with learning theories that applied to this special environment in order to maximize the impact on the resulting effort.

This campus task force charged with expanding these options for students recommended that the lab be housed in the library. The space targeted for this new lab needed to be cleared of existing stacks, monographs, shelving, and bound journals. Funding, although limited, was pooled from a variety of resources to support an infrastructure upgrade with temporary walls, electricity, network drops, carpet, and paint as well as equipment and software. A full-service staffed area was needed as well as small rooms for video and audio editing, a presentation practice and consultation room, pods with workstations for collaboration, large LCD monitors for shared-display group work, format conversion equipment (e.g., VHS to digital), a gaming and visualization lab, and multimedia viewing stations. The space also included presentation areas with soft seating, collaborative areas with white boards, the library's film collection, flat-bed scanning stations, color and large-format printing, and the microform collections.

The proposal called for this space to be staffed and supported by the University Libraries, but it was recommended to hire media studies students to serve as consultants. The following services were to be offered:

- Assistance with creating and developing digital videos
- Assistance with technical use of cameras and filming techniques
- Digital video editing and production
- Image creation and manipulation
- Media transfer to digital format
- Locating and incorporating video
- Publishing to the Web
- Creation and development of podcasts
- Scanning
- Color printing
- Large-format printing

Among our peer institutions, eight of the sixteen libraries provide support for multimedia production in the library. The administrative model varies-in some cases it is supported by an information technology services department or by a teaching and learning center; in others it is supported by the library or a collaboration between the library and one of the other units mentioned.

The task force also examined services available at our university. The University Libraries check out media equipment including flip cameras, video recorders, voice recorders, and tripods to all UNC at Greensboro students and faculty. The Teaching Resources Center, located in the School of Education, checks out similar equipment for School of Education students and faculty only. The Media Studies Department provides a lab that is restricted to students majoring in media studies. The Information Technology Services (ITS) Department provides scanning services in the labs but no assistance with any multimedia. In summary, except for media studies students, there is no support for students to develop multimedia; thus, a campus-wide need was identified.

A survey was sent in February 2010 to 3,717 students. Of those, 835 responded for a response rate of slightly more than 22 percent. Of these respondents, 120 indicated that they had developed a video presentation for a class. Sixty percent of these respondents did so because the

video presentation was required by the professor, while 28.2 percent decided a video was the best way to fulfill an assignment. Slightly over half (52.5 percent) used their own camera, and most of these used the movie mode of their standard digital camera. Seventy-eight percent of the respondents did not receive any assistance on campus, and 43.5 percent said that they had obstacles developing their presentation. Fifty-four percent said that they would have benefited from having assistance from an expert.

To determine the monetary needs for renovating the space once emptied, a budget was estimated as follows:

*Equipment*

- 15-20 computers (probably a combination of PCs and MACs): approximately \$50,000
- Streaming media server: \$25,000
- 2 scanners: \$3,000
- 1 color printer: \$1,000
- 1 large-format printer: \$3,000
- 3-5 LCD monitors: \$175 each
- Video to digital deck: \$1,200
- Slide converter: \$200

*Additional Network Ports*

- 20 drops at \$1,200: \$24,000
- Estimated \$5,000 in electrical work

*Software*

- Final Cut Pro for 20 machines: \$5,500
- Adobe CS-5: \$598

*Furniture and Temporary Walls*

- Workstations, dividing walls, tables, chairs, soft seating including delivery and installation: \$325,000

*Total Estimated Budget: \$444,373*

Funding was found, and the ideas and research that indicated the need for support of digital literacies became our Digital Media Commons. Figure 10.2 shows the area to be renovated—the basement of the main building—in its cleared state, free of materials and shelving. The area to renovate was the 13,900-square-foot open area, adjacent to the lecture hall scheduled by the registrar's office for curriculum classes. The circled areas are the stairwells already modified for egress pathways from the previously mentioned construction on the third floor.

Figure 10.3 shows the same space that now houses our Digital Media Commons (DMC), opened in 2013. The success and popularity of the space have exceeded expectations and made a tremendous difference in students' perceptions of the library, as we learned through a variety of assessment exercises, faculty comments, and student feedback.

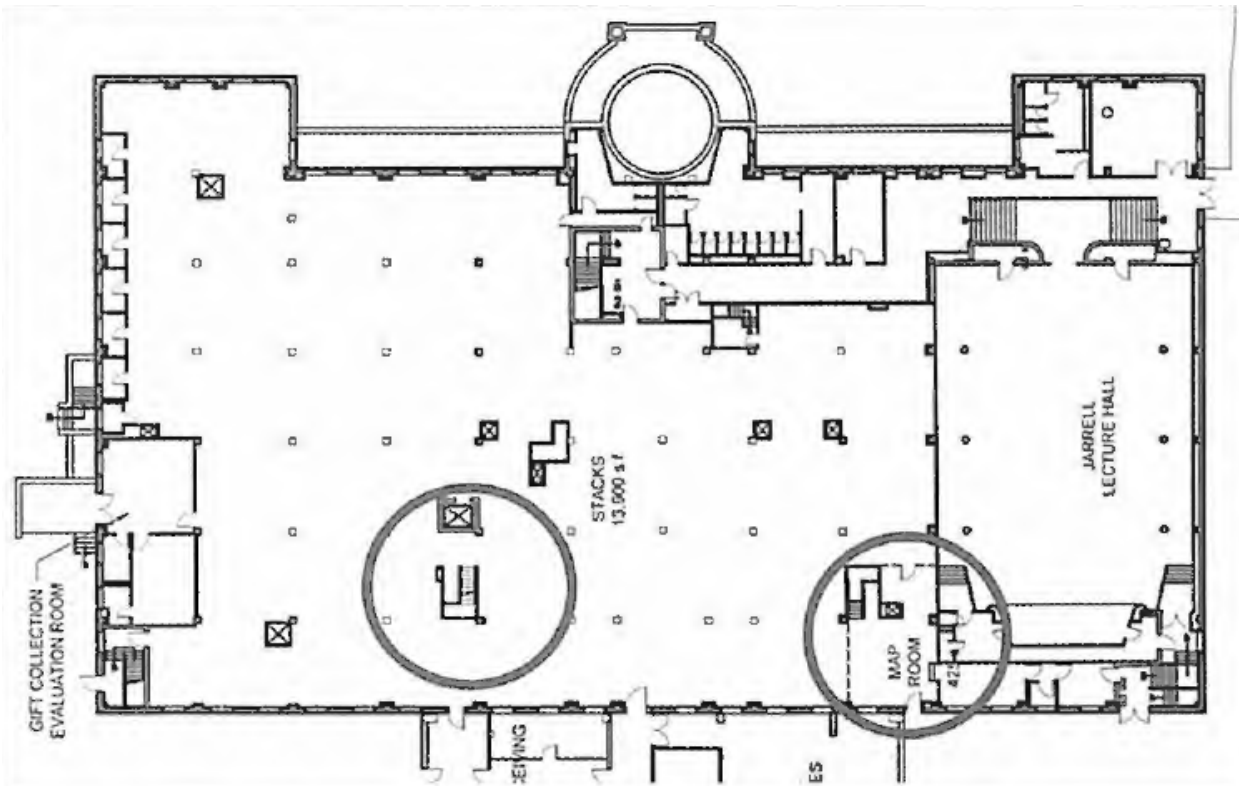


Figure 10.2. Areas to be renovated

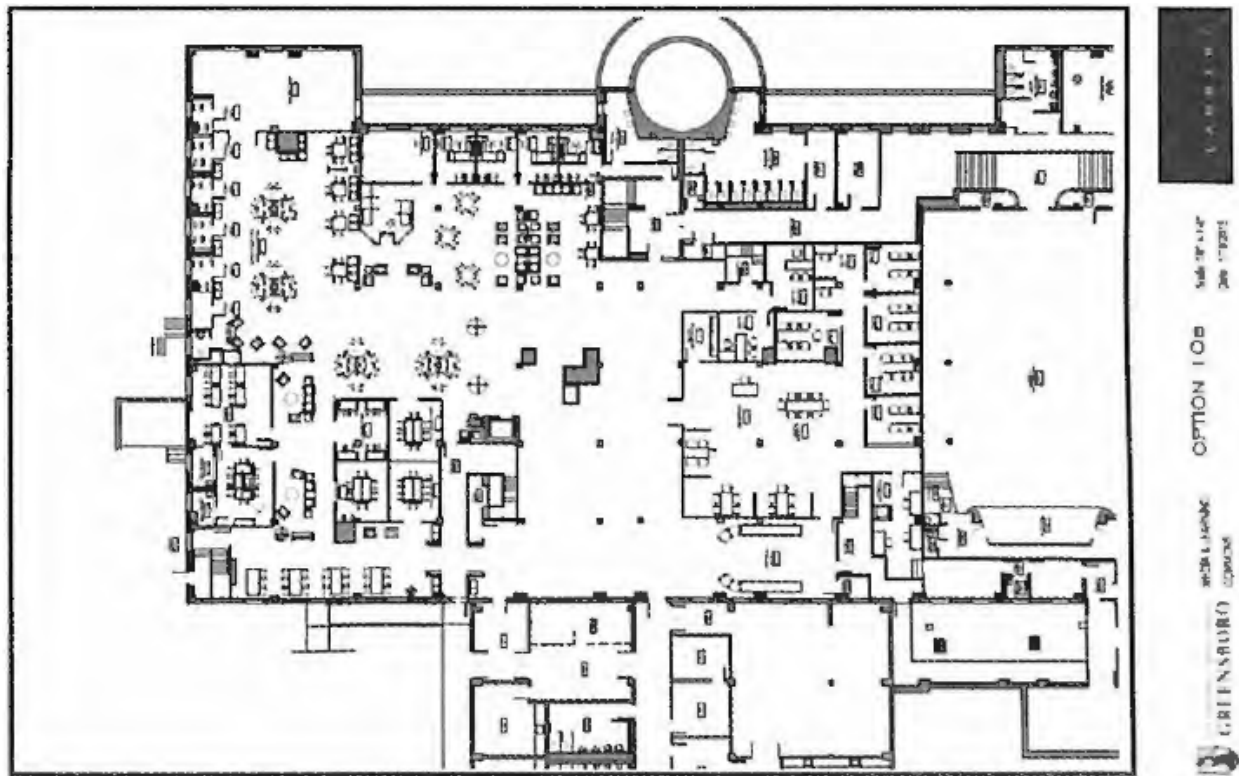


Figure 10.3. Digital Media Commons floor plan

The Digital Media Commons even has its own mission statement: *The Digital Media Commons supports the 21st Century learning and curriculum goals of University of North Carolina at Greensboro and the University Libraries by providing the space, technology, resources, services and expertise to support the digital creation of multimedia projects* (<https://library.uncg.edu/spaces/dmc/>).

In addition, goals were developed to establish focus on services and expectations from students:

- Provide interactive consultation services to University of North Carolina students, faculty, and staff in creating multimedia projects for their instructional and professional needs.
- Provide faculty development opportunities in creating multimedia assignments to develop students' information and digital literacy skills.
- Provide the space, technology, and expertise to shoot, edit, and screen films and other media, practice presentations, and collaborate on multimedia projects.

We have found that students use the DMC space and services to complete digital media projects that they cannot complete on their own, due to either technological or skill limitations. Students also use the DMC as a social place to study, complete group assignments, and practice presentations for class. Since opening, the DMC has added 3-D printing, a Video Imaging and Audio Lab (VIA) with a green screen wall, and a Gaming Lab. All these additions are meant to build an environment that supports connected learning through digitally literate products and services.

## **EVOLVING NEEDS ADD STEPS**

As the student population has continued to grow, needs for collaborative seating, student work surfaces, and appropriate furniture for organized, and sometimes unorganized, discussion became apparent. The first-floor reading room in the main library was occupied by a variety of materials and services but was also a logical choice for expanding seating. Using concepts from *Designing a New Academic Library from Scratch*, an Ithaka S+R issue brief, we wanted to design space based on how students and faculty needed to use the room rather than on traditional opinions or thoughts.<sup>5</sup>

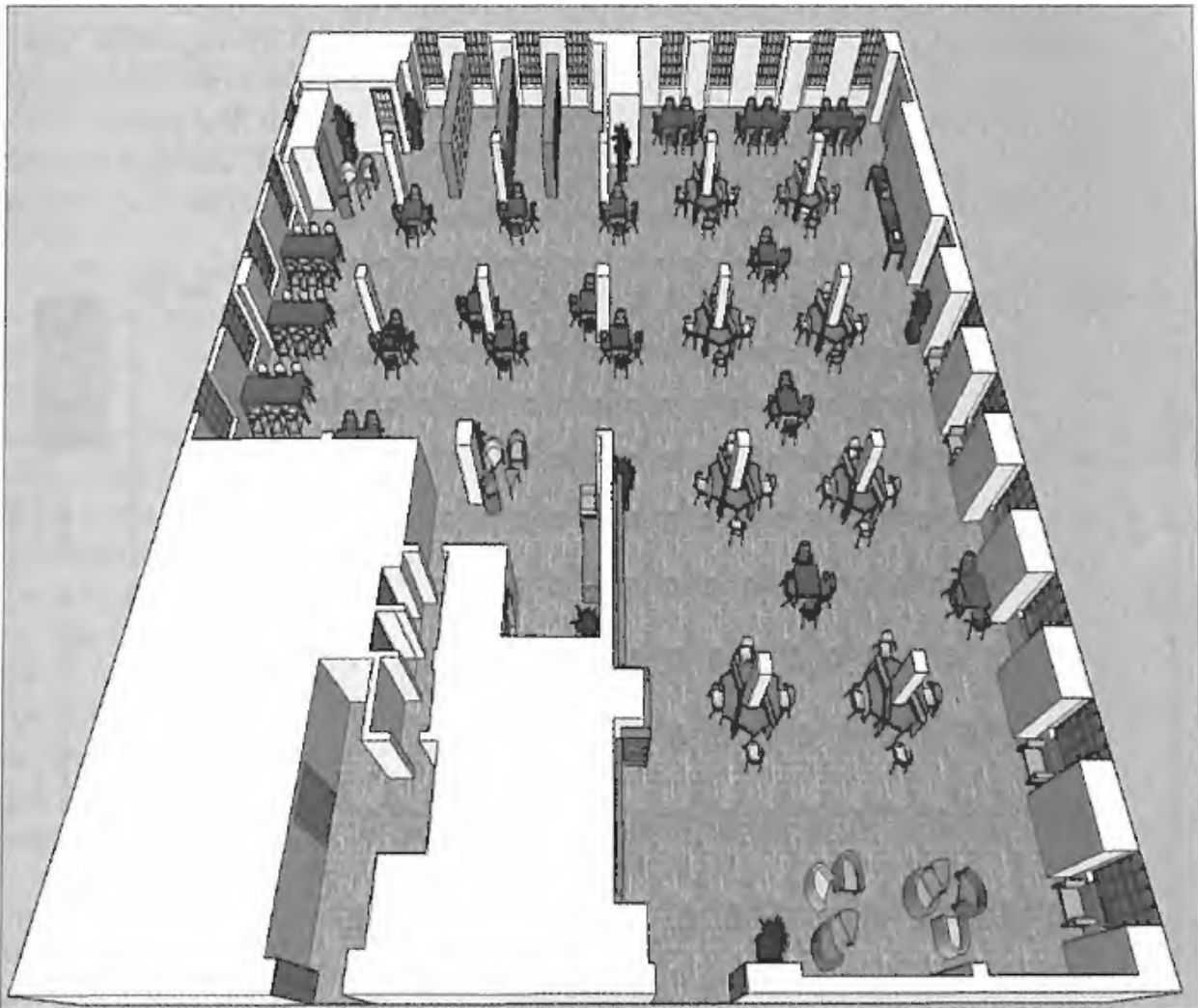
An Idea-Thon was held for library staff members to brainstorm and to discuss several approaches to space and service issues within the library. The reading room was one of the topic areas identified for scrutiny and was included in the presentation of the concept. Staff members shared a variety of ideas, observations, and what-ifs about this space in order to repurpose the reading room into a more inviting and usable space with higher capacity. The following is a list of the top items presented for consideration:

- Centralized and decentralized computer stations

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<sup>5</sup> N. Foster, *Designing a New Academic Library from Scratch* (Issue Brief), Ithaka S+R (2014), <https://doi.org/10.18665/sr.24776>.

- Tables for people in wheelchairs; adjustable computer desks
- Study and instruction rooms
- Big TV for news, weather, sports (e.g., the World Cup)
- Multifunctional-group and individual
- Physical limitations (wiring)
- Partition room by function
- Stationary and movable-no couches but clusters of chairs
- Tables to accommodate dual screens
- Signage on columns (vinyl letters)
- Wall colors to define function of space (furniture too?)
- Nothing bolted to floor (i.e., movable tables)



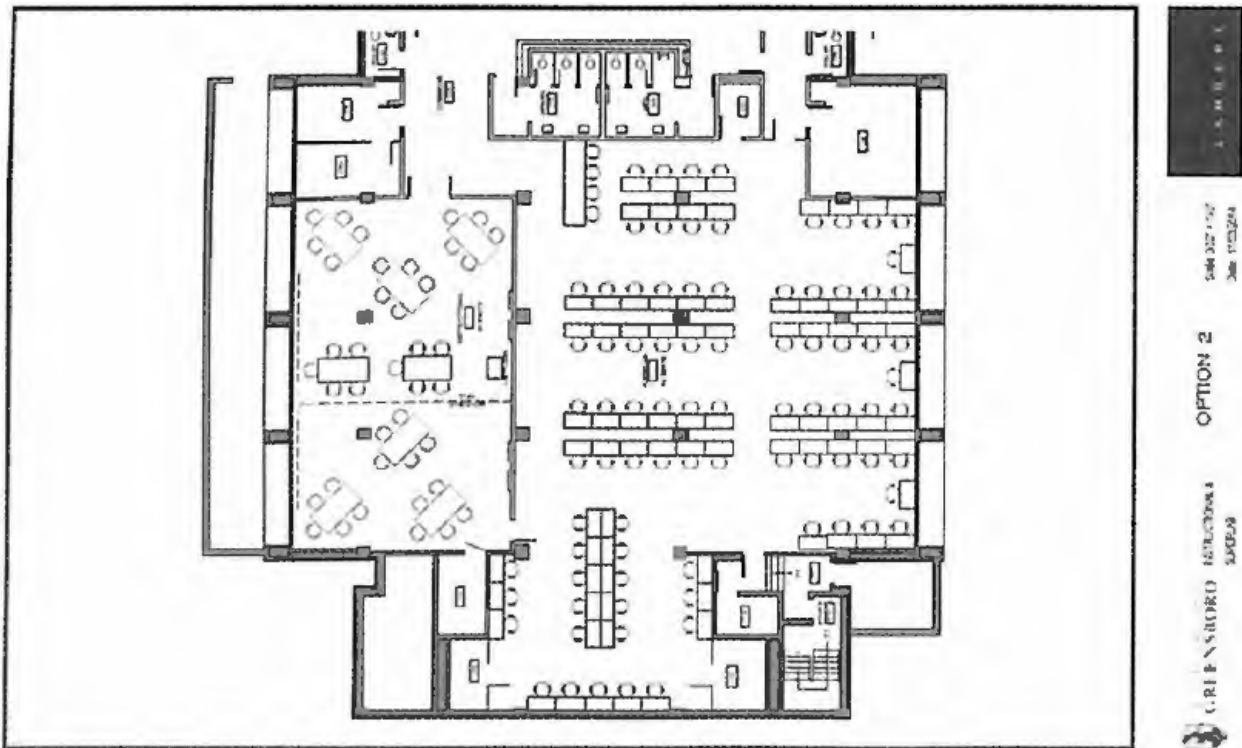
**Figure 10.4.** Final reading room layout and design

The ideas generated from the Idea-Thon were presented to student focus groups in order to better understand their preferences for the use of the room and how to create more efficiency for work and study activities without being too comfortable. Figure 10.4 shows the final layout that was

agreed to by staff and students and that accommodates many of the desired elements generated in the Idea-Thon.

After these plans were finalized, vendors were brought in to develop furniture designs based on the information gained through the earlier processes. Two vendors familiar with our building attributes and limitations were selected to provide two different furniture types on different sides of the room.

Since completion of the refurbishment of the reading room, observation has shown high activity and multiple types of engagement, so the process and outcome have been considered a success. An additional element of this project was the provision of dry-erase boards. Although we have always had some available, for this renovation of the reading room we purchased large quantities and are seeing high use.



**Figure 10.5.** Final configuration of the instruction lab

## **ENHANCED INSTRUCTION**

One of the original goals for our phased approach to renovation was a larger instruction lab. The original library lab sat twenty, which was upped to twenty-five by exchanging some furniture for thinner desks, but average class sizes have grown closer to the forty to fifty mark. A larger lab was a needed priority and had not been addressed by earlier construction activity. The opportunity presented itself to portion off a section of the larger SuperLab, managed by the campus's ITS Department in the library, in order to make a larger instruction lab. This lab adjoins the SuperLab and serves double duty by being open and available when classes are not

being taught. Figure 10.5 shows this configuration with the closed-off instructional lab to the left of the larger general computer stations.

Factors considered for this project included maintaining the proper number of computers throughout the building that were open and available for general use and rerouting of infrastructure needs of the space to provide adequate HVAC, electrical, and data, along with safety protocols. This arrangement has worked out well and met all the goals for students needing computers and librarians needing instruction space. This was also a wonderful opportunity to collaborate with our ITS partners in providing computers and instruction to students.

## CONCLUSION

Libraries today serve as a central hub on campus, a mecca for the social side of learning. Group-study assignments, combined with a higher technological expectation for the output of projects, can drive students into academic libraries with an expectation that the space and equipment will be able to accommodate those types of activities. Other expressed needs and desires for convenient services in the library are cafes, copy centers, and common interactive areas.

Our phased approach to renovating the library provided an opportunity to achieve improved learning spaces in segments, in lieu of a larger, full-scale renovation or expansion of the library. Our original 2008 space assessment study, although not executed as desired with five full phases to cover a broader assortment of needs, did inform changes made over subsequent years to provide improvements and needed upgrades. These renovations allowed our library the chance to enrich our students' learning and research opportunities for years to come and established the precedent that we can achieve smaller goals in smaller steps.

As academic libraries continue to be strong advocates for and conduits of information for their campuses, we are required to provide open and objective space for communicating, learning, and creating knowledge. Building or renovating smaller segments of space provides an opportunity to conduct assessment activities and engage stakeholders in order to best meet their needs, which helps our library approach our mission in a more integrated mode.

The growth of the university's student population, coupled with academic program development and our institutional mission for student success, required a common academic learning environment in which collaborative work and purposeful interactions can take place. The library's commitment to user-engaged learning informed the need for spaces that accommodate and support learning objectives and collaborative learning in a state-of-the-art, technology-rich environment, as discussed by Long and Holeyton.<sup>6</sup> This commitment included making spaces available to support faculty research and instructional needs as well as accommodating members of the community and local partnerships. This renovation allowed the library to realize its vision as the information hub for the campus.

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<sup>6</sup> P. D. Long and R. Holeyton, "Signposts of the Revolution? What We Talk about When We Talk about Learning Spaces," *EDUCAUSE Review* 44, no. 2 (March/April 2009): 36-48.

The issues that surrounded this work were complex but not insurmountable. Funding, always an issue, has changed our approach from what we anticipated from the 2008 study, but we were able to piece together needed funding for smaller projects from allocated funds, one-time considerations from campus administration, and unallocated funds from multiple sources. Establishing which priority to pursue next was also sensitive because different departments saw different needs and advocated for those. And the decision to assess stakeholders each time, although time-consuming, was valuable not only for determining details but also for communicating the intent of each project.

Across these years, the University of North Carolina at Greensboro's growth into providing higher level degrees as well as research-intensive activities has also added collections, services, and a complexity to user needs. These academic pursuits need a library that can provide common spaces on campus suitable for student collaboration and engagement as well as faculty and community interaction. In all other aspects, the library had the organizational capacity to support a growing and dynamic academic environment but was limited in execution by aged and inefficient space. Upgrading these spaces step-by-step gave us the opportunity to review learning design principles and to renovate space in a measured and informed way, helping keep the library a strong and relevant partner.