Cases on Higher Education Spaces:
Innovation, Collaboration, and Technology

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Chapter 14

The Librarian and the Designer: Working Together to Create a Showcase for Contemporary Learning

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EXECUTIVE SUMMARY

Many institutions of higher education are designing spaces that reflect the established correlation between learning spaces and student achievement, mastery, and retention (Hunley & Schaller, 2006). In this case study of a renovation of an 18,327 square foot business library space into a dynamic learning environment, Melinda McGee, the Interior Designer for the project, and Tomalee Doan, the Associate Professor and Head Librarian of the business library, share the experience of their successful partnership that required a creative and an in-depth collaboration with each other and with several other stakeholders not usually found in an academic setting. Their goal is to provide a resource for educators, students, and administrators desiring to create learning spaces that encourage student achievement. Basic design terminology, the role technology played in the design, and the importance of the product manufacturer’s interest in creating effective products for higher education are presented.

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ORGANIZATION BACKGROUND

The Parrish Library, formerly the Management and Economics Library (MEL) until the completion of the recent renovation, is one of twelve Purdue University campus libraries; it is a special library primarily serving the faculty, students, and staff of the Krannert School of Management, the Department of Agricultural Economics, the Department of Hospitality and Tourism Management, and the Department of Consumer Sciences and Retailing. The library, in close relationship with the Krannert School, provides information strategies instruction, data, and collection services. Most print materials are in a light archive easily accessible to researchers through a daily delivery service. A majority of business information is available online and to the desktop, allowing the library space to become a “learning place” for student success.

SETTING THE STAGE

The transformation of MEL, a traditional-style library, into a multifunctional space that resonates across campus and beyond, began in 2005 with a focus group comprised of students, staff, faculty, and administrators that was created to develop a student-centered vision for the Management and Economics Library. A white paper resulted from this group that established the goal for MEL to become a dynamic partner with its constituents in increasing information literacy on campus. We wanted to make the space available for all students yet maintain a priority for those whom we primarily serve. The renovation was to be carried out in three stages with only the areas being currently worked on being closed to users. Prior to the initial meeting of the librarian and the interior designer, the renovated space from phase one had already attracted attention. During construction, students continued to be surveyed to determine how they wanted to use library spaces. It was learned that students wanted to use the space for a variety of purposes—quiet study as well as collaborative learning and just relaxing. John Campbell, Purdue’s Associate Vice President for Academic Technologies, observes about the current trend toward reliance on technology:

With each passing year, students are influencing the campus technological environment by bringing in the latest consumer electronic gadgets. As institutional leaders, we must be aware of these changes by talking with students, observing how they interact with the current environment, and anticipating what new technologies will become available. Based on this awareness, institutions should consider
new methods of accessing existing technologies as well as new impact on learning spaces. (J. Campbell, personal communication, December 16, 2011)

Technology is clearly a major part of today’s students’ lives as they use a variety of devices—cell phones, tablets, laptops—for a variety of purposes from personal networking to academic research. In order for the renovation to reflect the students’ need to access technology, the Head Librarian had to work with the campus IT department, the School of Management IT department, and the Libraries IT department to make the best decisions about the varying technologies in the space. Such collaboration among University IT units was unprecedented and has developed throughout the course of the three-year renovation into a much higher sense of common goals for the benefit of the entire campus. Learning from how students use the renovated library will help in developing future campus learning spaces. More initiatives are underway as this project has come to completion, and the Head Librarian is now assisting in developing two active-learning classrooms in Purdue’s Hicks Undergraduate Library.

CASE DESCRIPTION

How Architects and Designers Approach a Project

This section offers background from a designer’s perspective on how many architectural and design firms approach a typical project, be it new construction or a renovation, that may be helpful to the reader when embarking on a project. Unfortunately, many firms will begin with preconceived ideas: (a) what has been done before and (b) how they envision the project to be (in their eyes/minds only). These are both nonproductive ways to begin a project as no two projects are identical and they often fail to consider the client’s needs. All projects must be fully assessed before starting into the design process. It is very easy for a designer to get excited about a project and start to conceptualize with ideas before even meeting with the client. The designer, though, must be willing to put their own ideas on the back-burner when delving into the project and hearing from the client their goals, ideas, and needs for the space. Many architects and designers, especially those who have been practicing for years, find it nearly impossible to overcome what they have pre-established in their mind even after hearing a client express their wants and needs. Some firms are also known to drive their designers to increase productivity, and ultimately their profits, so will sometimes stamp-out designs or use old renderings. Many firms start to carry a ‘theme’ or simply stated: all of their projects start to look alike. Being aware of design best
practices in approaching a project will help a client feel confident that a designer is acting in their best interest while serving as an advocate for the space. Here is an outline of best practices in design:

**Best Practices of Interior Designers: What to Look for**

1. Prior to starting the project, meet with the client to discuss their needs, visions, and ideas.
2. Identify the project team, both from the client side (decision makers) and professional entities.
3. Work only with professional business entities.
4. Prepare an agreement and scope of services defining designer/client responsibilities.
5. Set expectations for all parties involved.
6. Establish a project timeline, noting critical progress dates including bidding, construction, and completion date. Set benchmark reviews based on these dates.
7. Provide open, clear, and concise communication, in writing when possible, and documentation for all meetings held.
8. Provide services in the best interest of the client that does not violate codes, laws, or health and safety of students using space and those working on the project.
9. Respect client and project property.
10. Show respect for all team members including other professionals.
11. Share new ideas and allow others to respond both critically and positively.
12. Make yourself readily available to the client and project team members.
13. Listen closely; take notes and follow-through with assigned tasks, doing what you say you will do.
14. Update the client and team members often and as needed throughout the course of the project.
15. See the project through from start through completion to ensure all stated responsibilities are met.

A typical project moves through customary phases in the effort to deliver a complete project to a client. The phases are listed below in order of how they will occur; however, often phases will overlap and sometimes, depending on the project, phases will be skipped or combined. A brief description of each project phase is included to help the librarian or other clients involved in a renovation understand what to expect.
Typical Phases of a Renovation Project

1. **Programming**: The project commences with thorough assessments of an existing or new space. Programming consists of fact-finding, including field measuring the space, determining both space and employee occupancies (who and what is where) and square footages of associated areas and furniture inventory. This is also when the client starts to express their ideas and needs for the project.

2. **Schematic/Conceptual Design**: Ideas start to take shape. Preliminary layouts and plans start to come together, many times in the form of rough sketches.

3. **Space Planning**: Plans from the Schematic/Conceptual Design phase start to be further defined, primarily focusing on space requirements captured during programming. Often plans will be input into AutoCAD or Revit during this phase.

4. **Design Development**: Focus is on the elements of a space, the assessment and selection of finish materials and furniture. Pricing is typically started during this phase to ensure project budgets are being met and not exceeded.

5. **Construction Documents**: All project information is documented in drawing format, including floor plans with dimensions, project notes, key elevations, sections, and details. These drawings tell how the entire project should be built and constructed. During this same phase, furniture specifications are documented in the form of worksheets/workbooks in preparation for bidding.

6. **Bidding**: Construction documents and furniture specifications are “bid” (final project pricing) to contractors and furniture dealers.

7. **Construction Administration**: Typically the first step of this phase consists of finish submittals or the designer’s review and approval of materials submitted by the general contractor, based on project specifications, to ensure accuracy prior to being ordered or installed. The start of construction along with construction progress meetings and site observations are other tasks that are part of this phase. A punch will complete this phase; this is a final walk-thru of the project with the client, designer, architect, and general contractor to ensure the project has been built in accordance with the construction documents and that the level of finish and detail meets the project team’s satisfaction. Any items deemed unfinished or inadequate will be compiled as part of a “punch list” that will be overseen by the designer and architect until all items on that list are complete to satisfaction.

8. **Move Coordination**: Client moving into the new or newly renovated space is coordinated. This phase can also happen on its own when moving employees, entities, or departments around within an organization.
Each of these phases means something a little different to an architect, engineer, and designer on a project. An architect looks at the project globally and analyzes the structure thinking about wall locations and structural requirements. The engineer is behind the scenes assessing the mechanical and electrical units as part of the project. These are critical to the comfort level of the space but sometimes overlooked as not being important. The interior designer’s role is to bring the client’s vision to life through aesthetics, enhancing the space by means of materials and furniture. For the Roland G. Parrish Library of Management and Economics, newly renamed because of the major gift donation to the Management and Economics Library, the designer and the Head Librarian wanted to make sure that the architectural piece married with the interiors, right down to how and where materials transitioned. Doing this created a natural flow of the space for a truly seamless design. During the entire course of a project, it is critical that all professional entities involved work together and understand and support what the other is doing and/or proposing. This sharing does not always occur during planning and causes many headaches that can add time and expense to a project during construction.

In order to be effective, collaboration on a project does not end with the hired professionals, but should and must include open, honest communication and sharing with the client. Throughout each phase of the Parrish renovation, the Head Librarian and the designer were able to collaborate effectively with each other. In every instance, collaboration will ultimately lead to a nearly flawless project. The outcome of this project was exactly that, the creation of a library space built for student learners of the 21st century. As Charlene Sullivan, Associate Dean Undergraduate Programs of the Krannert School of Management says of the space, “The vision of Roland Parrish to provide Krannert students with a library that does not just support their classroom activities but enables them to stretch themselves into global leaders in a technology-rich environment is fulfilled in this wonderful space” (C. Sullivan, personal communication, January 24, 2012).

Renovation vs. New Construction

There are vast differences between an existing renovation and new construction projects. With new construction projects, the project team has more flexibility with the outcome, meaning that the building and its spaces can be more efficiently designed to meet the owner’s needs since a near ‘blank slate’ is at hand. Renovations are more typical and can occur frequently, especially on college and university campuses with older buildings. Buildings built in the 1920s are designed quite differently from the buildings of current day. Typical constraints of older buildings are rooms and corridors designed to much smaller standards, larger structural components, poor electrical wiring, and asbestos in building products. Also, building codes were often
not taken into consideration or did not exist. Nearly all renovations start with bringing these outdated buildings up to current standards and codes. While older buildings can pose challenges, they are typically built to much more stringent construction standards and are very solidly built. The Parrish Library was a renovation of a second and partial 3rd floor space in the Krannert School of Management building, a seven floor building completed in 1965 and never before renovated. The project team had the goal of creating an outstanding product for the library donor and the university and was willing to work long hours and spend time developing creative perspectives to ultimately enhance the Parrish Library. Sawyer (2007) describes the reason we chose to work as a team, “Groups are better at evaluating ideas than a nominal group of solitary individuals” (p. 63). For example, the Krannert building is L shaped and the Head Librarian wanted softer curves to refine the space to make it more inviting and have the renovation set the space apart from all other parts of the building; it would take a team to fully and creatively address these requests.

Interior spaces within an existing building often have constraints stemming from the overall size of the space, ceiling heights, unique materials and many unknown conditions. One must be aware of potential unknown conditions as surprises will likely come-up during demolition and construction. Plan accordingly by having more time built into the schedule and dollars allocated to the project. For the Parrish Library, demolition began in a few remote areas so the construction team could better understand how the building was constructed. Early demolition of key areas within the Parrish Library renovation provides an example of how a project team can overcome existing building constraints by collaborating and creatively sharing knowledge and experience from past projects. The librarian had hoped that the rather large columns within the existing library could be made smaller in order to retain the desired open feel to the space. When it was determined that only a couple of the columns could be made smaller, the designer suggested using red on one of the columns to designate the iDesk where users could go for assistance; thus, the columns were incorporated in the design rather than acting as a barrier.


The design team took a unique collaborative approach for the Parrish Library. This was the final phase and the largest space of the three-phase library renovation. Because new, creative ideas had been implemented in the first phase of the renovation, the Head Librarian could assess how they were received by users and if they worked as had been planned before moving onto phases two and three. The library addressed important student learning concerns with the development of two totally unique spaces.
The 3,745 square-foot first phase, completed in fall 2009, consisted of the corporate study room, which is a quiet study space, and the LearnLab, an active-learning instruction classroom. The corporate study room, having long tables with chairs and built-in lights, is along the lines of a traditional library and a space that could be modified, if needed, within the overall renovation (Figure 1). Today’s teaching and learning elements focus more on teamwork and collaboration, but as the initial stakeholder survey data indicated, students still require individual quiet space for study. The first phase of the renovation with its two distinct spaces, each having a very different look and feel, was highly successful in addressing both of these student-learning demands. In addition to the long tables and smaller tables seating up to four, the corporate study room has carrels for individual use and soft seating with end tables and lamps for casual reading. When needed, the quiet study space also serves as a place to host events and meetings. Since the popularity of the corporate study room reflected the desire for quiet study, no modifications were made to this space during the third phase.

The LearnLab turned out to be a showcase that brought significant attention to the design possibilities for a 21st-century library learning space designed as a “place” for an instructional classroom, a collaboration area, and a computer lab but, reflecting the transition from print to electronic format in libraries, certainly not a warehouse for books (Figure 2). To get the most efficient usage out of expensive and limited real estate, each space has a multifunctional purpose and is a unique learning zone; the user can immediately identify what can be accomplished within the space with-

*Figure 1. A very traditional corporate study room for quiet individual use developed in phase one*
out the need for signage. To maximize the usage of both the LearnLab and the corporate study room, a room wizard, an electronic scheduling device, hangs outside of each. Users can check the screen of the room wizard to see whether the room is reserved or if it is available for individual use. In support of Purdue Libraries’ strategic initiative to increase information literacy, the LearnLab serves as the perfect place for library faculty to teach a one-credit information strategies course. Faculty from any college or department who are interested in course redesign that moves towards a more hybrid learning style that facilitates active student participation can also use the classroom for the semester. When classes are not being held, the space offers students another place to collaborate or work independently in a lab-like environment. Library faculty members are currently conducting an assessment of the Learn Lab as an active learning space that increases student learning and success.

Phase two design and renovation completion took place in 2010. The renovation was a smaller space totaling 3,083 square feet located adjacent to the LearnLab. The main focus for this part of the renovation was to build an even more collaborative place that met the needs of the Krannert School of Management and the Agricultural Economics Department. Phase two demonstrates a focus on both the essential need for student success and the library’s quest to strategically build a positive relationship and successfully establish its value with the Krannert community through redefining 21st-century academic space in the Parrish Library. The second phase encompasses the financial conference room, a large conference room
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for 12-15 attendees designed for video conferencing, that is available to and can be reserved by anyone—student group, faculty, and administration; distance-learning opportunities provided by camera/software for multiple displays; a space for Krannert Business School’s Undergraduate Management Communications Center where management graduate teaching assistants critique students on their presentation skills necessary for case competitions and classroom projects; two cubicles for more private group work to be used on a first come first serve basis or by reservation; four Steelcase media:scapes, tables facilitating collaboration and innovation between group members by allowing users to walk up, connect their laptops, and share multimedia on large monitors; and several tables and chairs in an open seating area with close proximity to electrical outlets. Even though phase two was smaller in square footage from the phase one renovation, a significant amount of additional seating space allowing team-based work was developed with great success. Once phase two opened in the fall of 2010, the tables and chairs quickly filled up daily with individuals generally working at the tables during the earlier part of the day. This fulfilled an important objective for the redesign of providing student space that meets several needs throughout the day without students having to move to other buildings or go back to their dorms or apartments. The plan for the space is to provide a safe learning community into the late night that is open 24/5 Sunday through Thursday during the academic year. The media:scapes are a high-demand technology starting mid-afternoon when students have completed most of their classroom commitments and are now seeking a place to collaborate. Phase two provided 28 individual laptop lockers for students to store and charge their electronic devices (individuals have the ability to set their own code). Adequate power and data for all the technology offered in the space were provided by utilizing raised flooring.

Coming into phase three, designing in 2010 and construction in 2011, the Head Librarian came to the first meeting with the interior designer with a clear vision for the third phase of the renovation. The goal was to create a dynamic, multifunctional, and flexible space of differentiated learning zones that served both individual and collaborative needs and provided users an array of current technology as well as a space for relaxing. Phase three was to build upon lessons learned from the first two phases and also designed to fit the needs of the faculty and staff who worked in the library. Phase one and phase two demonstrated what worked well in a redesign and provided lessons in what could be improved. For example, the cubicles for private group work lent an undesired closed-in feeling to the space so the moveable partitions that surrounded them would be replaced by shorter, less opaque panels. In phase three, confining enclosures were to be avoided. This meant that the learning zones would need to be demarcated by something other than walls and signage. This third phase would be the largest, totaling 11,499 square feet, and by far the
most unique of the phases. The designer’s role was to bring the librarian’s vision to life. Their productive, collaborative working relationship began with the designer actively listening to the librarian’s goal of creating an innovative learning space with unique zones designated for specific usages and an open, fresh, and contemporary feel. They would continue to share ideas throughout the course of the project.

**Outside Entities**

This section describes how collaboration came to positive fruition throughout the design process and how critical it is that design professionals include others in decision-making tasks during the design process. For the finished product to be a success, which entails meeting the goals set forth by the project team, ensuring the client’s needs, and creating a functional space, it is imperative to meet with and hear from others about how they will experience and “live in” the space. For the designer in this case, it was important not only to hear from the actual client, the Head Librarian, who was ultimately responsible for the library, but to understand the needs of those who would be working in, maintaining, and otherwise be impacted by the renovation. In some of the first meetings and throughout the project, a staff member from the libraries facilities department was included to offer feedback on their past experiences with maintaining library spaces. They brought a unique perspective to prospective materials to be used in the project that the designer was sharing with the Head Librarian, wanting to know where these materials had already been installed, how they were performing, and the types of cleaning methods acceptable for these products. It was important to the designer that not only were the expectations of the Head Librarian met as to how the space would function and look aesthetically, but that a durable space was being created. By the Facilities Department sharing knowledge of how the space should be maintained, the designer could discuss their concerns with the manufacturers and vendors to find the best products for the Parrish Library.

Though collaboration with other entities is key from a design perspective, it is more efficient to have a firm clear direction with space plans, finishes and materials established before bringing in others to review, knowing that some items could change. Many key decisions need to be made by the selected project team since there are set project time and budget parameters involved. Once the space was laid out and a majority of the finish materials were selected for the project, staff members who would work in the space were pulled in. It was time to hear their feedback and learn how they might work in the space. The staff members were first asked to think about their current space, noting what works well and what does not work so well. An open forum meeting was held where design concepts were presented and staff members were asked to list the daily tasks they performed in their work space and
in what ways they liked to work. Their feedback contributed to the thinking about furniture types and layouts and what manufacturers would be most appropriate.

Later in the design process, after many of the furniture items had been chosen, a few furniture manufacturers were selected for their product line offerings, but some of their product options would not work well in this application. In almost every case, when these manufacturers were informed about what was desired for the project, they were able to provide viable solutions. Kimball Office even offered us the opportunity for a custom solution to meet our needs. Kimball had just introduced a new product line, Villa Lounge Seating, at NeoCon (a design industry trade-fair held every June in Chicago) that seemed perfect for the space. The units were initially designed for the healthcare market so there were a few features that did not meet our needs. The seat was higher than a standard furniture piece and the sit was very firm. Both of these qualities are fitting for a healthcare setting, but not for our space. We went to the manufacturer to see what options, if any, we had. Aware of the quantity we were specifying and our potential for helping them break into other market segments, the Villa’s product designer was brought in. The Designer was able to explain what and why certain choices were made with the Villa line and what could be modified to make it a perfect lounge solution for our space. Kimball fabricated three different cushions that we assessed to determine the most appropriate sit based on the environment and upholstered them in our selected polyurethane fabric so we could see how it would look on the sofas. The mockup chairs with the three different cushions were brought to Purdue and put in the existing Library space for users to evaluate and offer feedback. A white board was located next to the furniture and the students placed comments and votes for their preference. The cushions students recommended were used for the couch seating in phase three. The process of arriving at the final seating choice demonstrates how collaboration among several entities—the designer, the users of the space, and the manufacturer can contribute to a positive outcome with all entities benefitting. Kimball was so impressed with the process, they are now offering the seating as part of the line’s offerings.

In addition to having a strong desire to meet the Head Librarian’s needs and project expectations, the designer wanted to understand the needs of the students who would be utilizing the space and Purdue was highly supportive. For two or three days over the course of the project, primarily during the early planning stages, the designer talked with students. She not only spoke to students who typically spent time in the existing space but with students within the building who did not use the space to learn why and also discover what would make them want to start using the space. The findings were both expected and then again very unexpected. Technology played a large role in the responses gathered. The responses revealed that students needed and liked using the library in a variety of ways, be it for group
meetings, independent study time, a rest spot between classes or maybe just a place to grab coffee or a bite to eat. With that information, the goal was to plan a space that would accommodate a variety of activities. The faculty and staff in Parrish Library took an active role in gathering feedback from students as well. As with the cushions described above, students were asked to review and test furniture we were considering for the project. Over 20 chair samples were obtained, placed in the library, and students asked to use them as they would in a library. Sheets were posted where students could indicate the comfort, size, usability, look and durability of each chair.

Having the support of administration is yet another form of collaboration that can ease a project’s process. We challenged the Dean of Libraries as to what style the students would prefer. He responded that a “Starbuck’s-type” lounge sofa is what all students want to lounge and study in. Once again, we took time to speak with the students to see how they both lounged and studied. To summarize, the students unanimously wanted the more firm seating we were suggesting and specifically said that they do not want to sink into a chair where they will be sitting using their laptops and meeting with others. They also needed mobile tables and seating. Easily moveable furniture facilitates the types of collaboration today’s students are often engaged in, such as group or team projects, by allowing group members using laptops to share one large or several individual, smaller monitors. Tables of varying sizes and shapes can be used by groups of differing sizes as appropriate. At the same time, mobile furniture enables an individual to break away and study independently. The design team took our findings back to the Dean, and he directed us to listen to the students and move forward in the direction of meeting their needs.

Way Finding

Signage can be helpful, but research on library design indicates that while most libraries had ample signage, it was often not helpful or ignored by visitors (Johnson, 1993). At the same time, patrons often find visiting a library overwhelming. They know they need to be there, but some will just leave because they do not know where to begin. While libraries continue to evolve and book stacks start to disappear, this will change how people look at and experience libraries. We took this information into consideration and determined that we (a) welcome visitors to our library and (b) do not overwhelm them but offer a set of basic directions while they are in the space. It was critical that we incorporated directional signals to alert visitors where to go for assistance and what was appropriate within each space; we decided to do this through color. Each area within the library would be identified with a specific color. For example, the information desk, known as the iDesk in the Parrish Library, would be strategically placed in the center of the space and accented
with red glass tile, red accents lights, and an open ceiling with wood paneling and a white sail. These elements, especially the red tile, would pull patrons in so they would know where to go to speak with library staff and check out materials. The color red is a stimulant and by using this color, we hoped to bring awareness to the iDesk. Other spaces connect to the iDesk making it a central hub; which also helps to add significance to this area by signifying that these spaces are available for use by students. A small café area was incorporated into the space that would house vending machines and a coffee station. This area was designated with green accents including lime green pendant lighting fixtures made of dichroic glass and large sofas at exterior windows. Green is a soothing color and promotes health, a perfect color for an informal space where students would be relaxing. The café has bar-height tables sprinkled throughout, helping to send a signal that this area is a casual lounge space where students can eat or meet and study with friends (see Figures 3 and 4).

Since print materials are gradually being replaced by digitalized editions, many of the original library’s books were transferred to a repository where, upon patron request, they are retrieved within 24 hours. Also, the Parrish Library does not have a print reference collection. Six stacks for a total of 264 linear feet were retained. They were dropped to half height, thus retaining the open, light-filled feel of the space. One is now able to stand in the Parrish Library and see all of the windows along both the north and south walls of the building. The stacks also incorporate individual study carrels and private benches where students can study and read alone; this area was designated with the university’s colors of black and gold. The

Figure 3. The iDesk “red tile column” to help with way finding
staff space was separated from the rest of the space by using a full-height glass wall with full visual to all areas of the Parrish Library.

The staff area was highlighted with a bright blue accent color, which was also used in the shared student and staff conference/training room. Blue often is associated with bringing a sense of calmness and creativity to individuals so proved to be a perfect backdrop to these areas (Figure 5). We learned from phase two that students were somewhat timid to use that conference room since it felt formal to them. Plus, if a small study group wanted to use it, they would only use a quarter of the long table. These observations prompted drastic changes in a similar room in phase three. A full-height glass wall was used to keep the space open, but the design team incorporated retail-type sliding glass doors so the space could be completely opened when needed or closed for a large meeting. Training tables were used in the room instead of a large conference table to allow for multiple, smaller meetings. They can be pushed together for a large conference meeting or configured for a training situation. The conference room is equipped for distance learning with audio and video, along with capture software so meetings can be posted on Purdue’s BoilerCast network for meeting invitees unable to attend.

**Technology Impacting Design**

Technology plays a major role in our lives; nearly all of us have smart phones, laptops, or tablets, to name just a few devices, and tools like the Internet and wireless networks are helping us to more efficiently and effectively conduct business
or communicate with family and friends. During design of the Parrish Library, the project team had several discussions on how technology impacts students and how it would ultimately impact the renovation. The design team wanted to ensure that technology could be easily accessed and utilized within the confines of our space so we set out to research how students were utilizing technology. Studies described how K-12 students are now being provided with and required to use tablets for educational purposes through their schools (Eisele-Dyrli, 2011). The designer wondered how this early use of technology would influence what new young student would expect from their colleges and how this should be reflected in the renovation design.

Middle and high school age students were polled in another study regarding how technology impacts their lives and scholastic studies, and when asked what they needed most in their schools, they replied “access to wireless connections” (ECAR, 2005). They also said that computers and tablets needed to be placed in every classroom. Students wanted to be able to access information easily and quickly. Students are not using textbooks to find and retrieve information; they are accessing websites, e-mailing, and truly using technology to its full extent. Feedback from students of every age, elementary to graduate, reiterates that designers, owners, and project teams must think about technology from every aspect and plan for nearly every possible location on our campuses (ECAR, 2005).

For Parrish to incorporate today’s technology, we wanted to make it easy to use laptops, phones, and other devices. The university wanted the flexibility of having a raised floor throughout the space to allow for easy electrical and data relocations.
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when needed. This allowed us to sprinkle easily accessible electrical outlets throughout the space so students could plug in almost anywhere. Another new technology we discovered while researching solutions for this project is E-Coupled Technology. Phones and laptops equipped with the appropriate chip, as most are today, will automatically charge when in range of the E-Coupled device without using a power cord. We decided this would be something that students would welcome, so we designed our café tables to incorporate this new technology. When visitors are stopping for coffee and to check emails, or writing a class paper, they can also charge their phone and laptops—no cords or plugs required. It is still very new and Parrish Library will be the first location on campus that utilizes this technology, but we hope it will not be the last. The design team also listened to a proposal from a freshman engineering class that suggested students need computer stations for short-term use such as checking email or finding a book. In response, we have installed quick access/quick print terminals directly inside the entrance. These are in an elevated position, as they are designed for the user to be standing (Figure 6).

The Table 1 summarizes technology needs and types of technology selected to address those needs.

Sustainable Products

While we did not pursue LEED (Leadership in Energy and Environmental Design) certification for the Parrish Library project, we did want to ensure the materials we selected for the project were sustainable. One donor particularly requested that we

Figure 6. Café and informal gathering area
look at sustainable materials for this project. It is becoming much more common for materials to consist of recycled content with the potential to be recycled and made into other products. We selected finishes such as carpet tile made of more than 44% recycled content (by weight) that is 100% recyclable, wall covering with 20% post-consumer content, and glass tile. When possible, we also used products manufactured in the US and within the 500 mile radius as per LEED guidelines for regional materials credit. We used a similar approach with the furniture-selection process, identifying locally manufactured products, PVC free vinyl, and other materials made of recycled content.

**Learning from Corporate Design**

It is imperative for designers to learn from their surroundings and other segments of design. The Parrish Library designer focuses on higher-education spaces but has designed across the spectrum, from healthcare to corporate and more. The designer spent significant time in the corporate design arena working with several large corporate clients in the Indianapolis area. From this experience, she noted that corporate office environments often consist of multiple buildings or campus settings, much like a university. The Head Librarian, having three offices in three libraries on campus, seemed to the designer as a waste of space, especially since space is a vastly needed and costly commodity, and led the designer to wonder how many faculty members on campus had multiple offices and what kind of real-estate could be captured if all of that space was consolidated? The designer, after learning
that a local corporate entity was in the process of trying new concepts with select building spaces, contacted the pharmaceutical company to see if the Parrish Library project team could tour these “new concept” spaces to better understand what they were experimenting with and decide whether we too might be able to do something similar. The Head Librarian, project team members, and representatives from Purdue Purchasing all came along for the tour. During the tour, it was observed that the company was faced with a similar problem of employees having too much office space. After learning that many offices and workstations were only occupied for a few hours a day, they realized something needed to change. The pharmaceutical company determined that a shared space approach might work best. An employee is assigned to a locker (similar to high school); they put their personal belongings in it and can then migrate to open workstations as needed. There are several breakout areas for private phone calls, impromptu meetings, and larger conference space for larger group meetings. This space design enables an employee who has a meeting on the east side of campus that day to work in that area, instead of being tied to the area where they typically work (Figure 7).

By using shared space, the pharmaceutical company reduced total building real estate, while still allowing employees to work as they need or desire. They quickly found that employees liked this concept and seemed to collaborate more as the new space layouts made it easier and thus more natural. Employees started to collaborate with others they had never collaborated with before since they were now more apt

*Figure 7. Collaborative faculty office for five with adjacent individual office, media room for team projects, personal lockers, and informal table for individual or group work*
to move around campus instead of staying in one place. They also found it very easy to meet since meeting enclaves and casual café settings were spread throughout all buildings on campus thus facilitating talking and sharing ideas with others. We found the most interesting result was that meeting times were actually shortened and productivity increased since meeting times were no longer considered a chore. Purdue Purchasing representatives liked this concept as well, and, while they knew it would take some adjustment, the representatives supported the hybrid version within the Parrish Library. We took the idea of shared, flexible space and implemented within the Staff and Faculty Office areas something very similar to what we had observed. While there are still assigned workstations, some are height adjustable, thus accommodating multiple users. Lockers for personal items, rather than the traditional desk drawers, were also used. The concept of flexible space might easily be adapted by other areas on campus as it seems a perfect solution for a campus setting where instructors may teach, otherwise meet with students, or collaborate with peers in multiple locations across campus.

Continually Assessing the Space (Phase 2): The Head Librarian’s Experience

Continual assessment of any renovation is necessary, especially for a library renovation as library use is changing so rapidly. As an example, after phase two was opened, the design of the two informal cubicle spaces, though heavily used, was found to make the space feel too closed in without providing the warm visual appearance that was desired. As the design of phase three began, the designer and the librarian worked to incorporate adjacent elements from phase two and open up the informal semi-private cubicle space to allow for better traffic flow so the Learn-Lab and the undergraduate management communications center would be highly visible. The librarian asked the Dean of Libraries to use remaining funds from the phase two project to reconstruct a subset of phase two with the help of the designer for phase three. The Dean agreed to use the remaining funds to redesign the semi-private group work areas. These informal spaces remain important because within the entire renovation project for Parrish Library there are no enclosed small group study rooms. Students clamor for these types of spaces, but in reality they are not practical. There will never be enough of these rooms to meet the needs of students, and the HVAC system required to ventilate them is extremely costly. Today’s workplace provides a more collaborative, flexible environment as we discovered in the corporate model. The design team decided to create an open space that provided many types of seating opportunities that would accommodate group or individual work. In another example of the productive collaboration throughout this project, the designer responded to the librarian’s concerns, and the space in phase two will
be open and available for students at approximately the same time as the phase three renovation will be completed in January 2012. Opening up the space in phase two by tweaking the informal study cubicles one year after its completion demonstrates the design team’s desire to continually assess and make the best possible use of the spaces and provide a place that enhances student learning.

SOLUTIONS AND RECOMMENDATIONS

Challenges inevitably arise during both design and construction. Those working on the Parrish Library met frequently to discuss problems and addressed them quickly. Sustained collaboration kept the project moving forward and ensured that the librarian’s needs were still met though obstacles arose.

One such problem occurred during the installation of the digital wall covering that would be mounted on the circular stairway walls (from the first to the second floor) acting as a major showpiece to the space. This unique art piece would also display the new library and donor’s names so it was imperative that we got this part of the project right. It was started six months before construction was slated to be complete and involved multiple stakeholders. Individuals from the project team, Purdue’s graphics department, and then the general contractor and his wall covering sub-contractor were selected to be part of the process. The design piece moved very smoothly; it was quickly created and approved through not only the group but with both project Deans. The wall-covering manufacturer wanted a particular process followed, but it was unclear as to what information was required and who it had to come from. The success of the installation depended on the accuracy of the wall measurements. The field measurements had to come from the project-awarded subcontractor who would be installing the product. This slowed the process as they had original measurements, but they did not match the newly constructed space. Trying to get this information from the wall covering manufacturer delayed the design for almost six weeks. The manufacturer then had several questions that slowed the process for another two weeks. We eventually all met and finalized what dimensions were needed and integrated them into the submitted artwork files. At the time we write this, we are still waiting on the final approval layouts. While we all knew that the space for this wall covering is unique with many extensions and niches, we never imaged that it would take nearly eight months to complete. Looking back, the importance of collaborating with all entities involved is clear—the manufacturer should have been in the room with the subcontractor and design team from the start so each entity would understand what information was required and who was to supply that information. We are hopeful that this product and installation will exceed our expectations.
The cork tile flooring installation provided another lesson learned. More research done early on through a mockup could have prevented problems during installation and would have been a useful step prior to selecting this flooring for the project. We were surprised that the flooring subcontractor did not bring the potential installation problems to our attention prior to ordering the cork material, as they had previous experience with installing this particular product. Mockups are desirable in many situations prior to the actual project installation so the project team can better understand how a material is to be installed and how it will perform.

The bold red tile of the iDesk (information desk) caused another glitch. A light grout is usually recommended for glass tiles and the distributor for this tile suggested a white grout. When the glass tile was being installed, the white grout was more prominent than the red glass—not what we had anticipated. The general contractor quickly called the designer to check that this look was what was intended. After seeing the installation, it was clearly not what was expected or desired. This particular glass tile was backed so light did not pass through it. The subcontractor initially tried to chisel the white grout by hand, but it started to damage the red glass tile. The installation was stopped completely and the design team decided to research an alternative method. We decided to grout the remaining red glass tile with a mid-toned gray grout and stained the white grout to match the gray. When the grouting was complete, the red tiles stood out beautifully, which was the look we had hoped for, and the tile installation looks outstanding. Ideally, it would have been best to test a few sample pieces first to understand how the grout would impact the look of the red glass tile before we started the installation. From this experience, we learned that it is critical for both the successful progress and outcome of a project to have an open relationship with the project’s general contractor and that they feel as empowered as the design team to make calls when they feel something may not be right.

CURRENT CHALLENGES FACING DESIGN AND THE ORGANIZATION

Looking back on this amazing project, some lessons learned were just reiterations of past design experiences, which is never a bad thing. The design industry, and world for that matter, is consistently changing, and it is imperative that one always stay abreast of new products and welcome new ideas. It is also just as important that designers and owners continually push for and allow innovative thoughts to be shared without judgment. Too often at colleges and universities, new or renovated spaces continue to look like every other space on campus, nothing new, exciting, or innovative. The success of the Parrish Library designers attests to the positive outcome when designers and owners work together to assess the true needs of the
The Librarian and the Designer

users, embrace change, promote growth and try new approaches. By working together as a collaborative design team following established best practices, learning spaces that truly reflect the experience and needs of the user will likely result.

The Head Librarian and “owner” of the space discovered the importance of active listening and trusting professionals to do their work while sustaining a collaborative relationship throughout the project. The renovation process took three years to accomplish, each phase taking a year at a time. In today’s economy, libraries are under scrutiny as administrators look for areas to cut to balance their budgets. During the entire time of the renovation, the librarian actively participated in fundraising and grant writing opportunities to secure the necessary funds for the next phase. As a result of the phased project timeline, the end product is a showcase for others to envision new library services and enhanced continuous learning spaces that libraries today must provide for their users. The extended renovation provided the Head Librarian the opportunity to work with a great team, including the architect, campus project manager, a supportive library administration, campus information technology staff, and an interior designer that made it easy to expand her original vision and create a space that is modern, inviting, and accommodating to today’s student. The renderings created for each phase clearly made each space look up-to-date and renovated. The Parrish Library is a vital part of the Krannert School of Management, demonstrating value in teaching and learning and space management. As a faculty member and Head Librarian of three large libraries, the librarian is now involved in other campus initiatives to create more active learning spaces at Purdue University as a result of the success of the renovated space.

REFERENCES


**KEY TERMS AND DEFINITIONS**

**Active Learning:** Encompasses models for learning that incorporate instructional strategies allowing students to teach content to each other while being guided by the instructor.

**Architect:** Professional trained in planning and design who supervises a building construction project.

**Information Literacy:** The ability to know when there is a need for information and to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.

**Interior Designer:** Professional involved in a project who analyzes settings for their effectiveness in regard to the activities that will occur in the space.

**Learning Spaces:** Physical and virtual facilities that encourage purposeful formal and informal learning, encompassing both traditional and innovative places where individuals can find whatever they need when they need it.

**Learning Zone:** A physical place that though form and function engages users and facilitates the acquiring of new knowledge and gaining of further insight.

**Library Renovation:** Repurposing of a functional facility and services to keep pace with the changing needs of library users.