Breaking down the barriers to working and learning:
Challenges and issues in designing an Information Commons

Janette S. Blackburn, AIA, LEED AP
Principal, Shepley Bulfinch

November 2006

Breaking down Barriers to Working and Learning:
Challenges and Issues in Designing an Information Commons

By Janette S. Blackburn, *AIA, LEED AP, Principal,* Shepley Bulfinch

Breaking Down Barriers by Design

As designers of physical space, architects are consistently charged with creating spaces that will support the future. For the firm of Shepley Bulfinch Richardson & Abbott, involvement in the design of Information Commons began in 1988, with the Gateway Commons at Leavey Library, University of Southern California. Continuing through to our most recent projects, our designs have been driven by the goals and needs of those who teach, work, and study in these facilities. The focus of our design approach has been on accommodating changes to the physical environment in response to the evolution of a technological culture on the college campus. Our charge has been to create environments that provide long-term flexibility and act as catalysts in breaking down barriers to how students work and learn.

The Commons as a concept originated as much from the need to provide integrated function-ality in a technological learning environment as it did from a desire to improve unpleasant, claustrophobic, and unattractive computing centers and run-down library facilities that exist on many campuses. Once computing technology reached a basic saturation level on campus, de-signers and academic leaders began to think differently about space. Understanding how we work, how we learn, and what we need to be productive has launched planners and designers on an exploratory journey through contemporary shifts in and creative responses to the design of learning environments.

Throughout our involvement, we have encountered these broad, recurring themes:

· Planning for Flexibility: creating physical space solutions that enable change
· Designing for Today's Service Models: reinforcing library and technology organizational models through the physical design of service points
· Customizing the Information Commons: developing unique design solutions in response to the specific needs of an institution
· Increasing Breadth and Complexity: providing a broader range of resources and services to support campus and community

Although manifested differently for each institution, responses to these themes as a whole have shaped the programming, planning, and design of physical space. For both architects and institutions, the critical issue remains: what types of physical environments most successfully support learning in today's academic setting? This chapter presents the issues inherent in the physical design of Commons and solutions for creating spaces that are attractive, support-ive, and responsive to change, context, and community–places where teaching, research, and scholarship will flourish.

Continued

Design for Flexibility

At many institutions, the process of achieving large-scale changes to the built environment does not keep pace with student expectations and needs. Too often, the evolution of curricula and research programs outpaces parallel changes in buildings and spaces. To compound the issue, student and faculty expectations are shaped by the faster rate of change seen in more nimble, market-driven commercial enterprises. To compete, the Commons must be designed to be flexible and multi-use–a laboratory with multiple services where people come together to collaborate and learn.

The Commons needs to include technology-rich, open areas that allow for re-configuration and multiple simultaneous and consecutive uses. Change should not be limited to periodic renovations but should happen frequently over the course of a given day, month, or academic year. Weekday instructional spaces may become evening computer labs and Friday night gaming parlors. The space can be thought of as an "academic loft" designed to change with us, not just remain a snapshot of space that is right for a fixed moment in time. Movable furniture, flexible panels, mobile white boards and display surfaces can be utilized to define areas within a larger space. Wireless networks, prolific access to power and data connectivity and technological tools, non-directional lighting and effective acoustics can create a flexible spatial armature that is engaging, inviting, and suitable for a variety of campus uses including library and IT services, instruction, and collaborative and informal learning activities–all of which entice the community to gather and create.

The need for flexibility has brought to the forefront design and technology tools for easily modifying an environment. A wall-sized projection area or digital screen allows for varied exchanges of information, imagery, and ideas at a pace that cannot be accommodated by static signage and displays. A room enclosed in glass allows visual connections to surrounding spaces, thus facilitating ease of access and supervision of multiple functions. When equipped with up-to-date technology tools, the room's functionality can be extended to include many types of use, including group study, video conferencing, consultation, and media viewing/ editing. New library and office system furnishings are designed to allow both groups and individuals to work effectively. Chairs and tables come equipped with casters for easy relocation. Dividers that expand, contract, and roll from place to place allow groups to frequently reconfigure work and teaching space. The atmosphere of these spaces is charged with a design palette of vibrant color and texture, a change from institutional environments that have too often been bland and generic. We see these new tools and design strategies as a way forward to the realization of attractive, beautifully- designed, flexible learning environments.

A primary factor driving the need for flexibility in the design of the Commons has been the need to accommodate increasingly rapid shifts in users' behaviors and perceptions of format,

Continued

media, and service. Continual shifts in information formats require the creation of space to house and enable the use of collections and tools that will change significantly over the life of the facility. Our increasingly visual culture, invigorated by the power of communicating through imagery and sound, is pushing Information Commons to meet an exploding need for access to multi-media resources. The physical space implications of accommodating this technology include digital labs with more and larger computer workstations for more sophisticated equipment and larger screens. The messy reality of producing the physical end-product generated in a sleek digital lab includes the need for graphic production work areas designed to hold large-format printers, bulky rolls of paper, and layout tables for working with poster-sized materials. Small, multi-use, enclosed rooms are needed for some media production and viewing functions, and storage, display, and tracking of media collections housed within the Commons imply the use of shelving, accessories, and equipment that are more common in retail environments than traditional library and academic spaces.

In its Gottesman Libraries, Columbia University's Teachers College is planning two floors of re-configurable space for use as digital research and production studios to support curricula and software development, scholarly publications, student and faculty research projects, lectures, forums, classes, and events. In these studios and labs, students and faculty will be able to work independently or together in open work stations and multi-use enclosed rooms that are suitable for small seminars, project work, video conferencing, and technology-rich media presentations. Plans include a raised floor system and suspended ceiling trellises to provide the infrastructure to support and distribute frequently changed wiring, lighting, and audio-visual equipment. Furniture and equipment storage rooms and a food-prep pantry will support transformation of the floors from digital work place to event space. A lobby and digital display area at the entrance to each floor will be the fixed components that help orient and direct visitors to the more flexible studio space. Likewise, to anchor one end of the largest open work area, plans include a common gathering place where users will come together to discuss projects and ideas.

Design for New Service Models

Academic activity today is a multi-faceted stream of gathering, thinking, exploring, and developing; more like a woven fabric or web than a linear use of resources. Immediacy of need is part of this way of working, and it is readily apparent in today's research environment. The implications of time on the ways in which service is provided need to be recognized as a critical aspect in the design of a Commons, including enabling immediate access to tools, resources, and help.

Continued

Expectations for immediate access to services, together with tighter budgets and the demand for longer hours, have necessitated the promotion of self-service as a model throughout consumer-driven American culture. According to our surveys of student preferences in connection with the design of library and learning facilities, incoming student populations are accustomed to–and sometimes even prefer–do-it-yourself systems for understanding what is available and for accessing resources and information. The use of self-service can be leveraged to allow the Commons to focus on person-to-person interaction for those activities in which it truly adds value, and student comfort with self-service models needs to be recognized in the location and configuration of service points.

At Lake Forest College's Donnelly and Lee Library, the Commons is served from a single "one-stop shopping" service point that provides access services, research assistance, and computer help. The desk is positioned at one side of the Common's main thoroughfare, where it is easily visible, but not an obstacle to "do-it-yourself" visitors who wish to explore the Commons on their own or visitors who are simply passing through the library on their way across campus. The desk is supplemented with self-service check-out machines and stand-up computer stations that provide efficient access to resources for the frequent, self-sufficient user.

An understanding of the specific service and work patterns of user populations will allow service points within the Commons to be appropriately located and configured with visibility and efficiency in mind. Physical configurations designed to convey patterns of access and inquiry in a complex service environment, coupled with operational strategies, such as providing a single access point for all library and technology services or moving research and technology assistance out from behind a service desk, need to be clearly articulated so that they can inform the design of the physical space. Service desk design and the location of staff offices to support a "greeter" model, where initial contact is with a staff member whose role is to convey the range of services that are available, will differ from service points and staff areas designed to support sophisticated research help and in-depth assistance in the forming of questions.

The service desk in the Commons at Marquette University's John P. Raynor Library accommodates both short-term and long-term assistance through its configuration. The relatively large desk is composed of several smaller-sized components to increase its approachability for users who need assistance. By breaking the desk down into several discrete components, there is room for patrons to linger for in-depth discussions with Commons staff in one area while quick help with more routine needs continues near by.

The Commons challenges designers and institutions to identify new ways of organizing space and operations that reflect the changes brought on by the integration and convergence of resources and information formats in our technological society. Understanding this dynamic

Continued

organization of services within the Commons, including the extent of self-service activities, in-depth assistance, and converging staff roles and expertise, is essential in locating and configuring service points that are truly effective contributors to research and learning within the Commons.

Customizing the Information Commons

The design of the Commons should be approached within the context of a facility's or institution's unique characteristics. Like every other aspect of the campus, the Commons must reinforce the unique needs of the students, the faculty and the institution. Organizational and operational structures, space and funding parameters, and physical location all help shape an institutionally-specific design response to the "Information Commons" model.

An institution's organizational structure and affinities between the Commons and other campus programs affect what is provided in the Commons and how it is ordered. Partnerships to integrate the Commons with other components of the library or other campus instructional and technology centers vary and ultimately affect the Common's program, budget, schedule, and physical design. Questions that institutions, planners, and designers must clarify in order to program and design the Commons include:

· What are the specific operational and philosophical linkages between the Library, IT, the Student Center, and various academic departments and professional schools?
· What resources and services are needed to support faculty curricular goals and pedagogical style?
· How are programs and facilities, such as writing centers, math labs, instructional spaces, tutoring, and honors programs, functionally supported within the Commons?
· How do functions included in the Commons interface with specialized information services and resources located elsewhere in the library and throughout the institution?

The institution's responses to these questions will clarify a philosophical framework for usage of the Commons and prioritizations for usage of its physical space. Planners and designers can then organize functions accordingly–in strata that reflect their importance, level of activity, service requirements, and frequency of use. They can design the facility so that its entrance locations leverage access to important functions and so campus circulation routes through the Commons connect it with other social and intellectual centers on campus. By creating design solutions that respond specifically to an institution's organizational structure and scale, programmatic priorities and synergies, and realities of budget and location, planners and designers contribute to the essential strength of the Commons as an evolving tool that responds to an institution's style and patterns for learning, teaching, and working.

Continued

The physical size of the campus and the population it serves will ultimately influence the scale and character of the Commons. At Indiana University, Bloomington, the large size of the campus and the distance students must travel between classes and home increases their reliance on the library's Information Commons as a place to study between classes. In addition to providing a Café, Help Services for computer and reference requests, and Instructional Spaces to support information literacy, the Information Commons in the Herman B. Wells Library has responded to this specific need by providing an open, flexible space on the main entrance level of the library with over 350 computers for student use. At Elon University, which serves a much smaller campus population, the look and feel of the Commons in the Carol Grotnes Belk Library emphasizes small-scale settings where–reinforcing the University's curricular goals–students can receive personalized attention and academic support. The inclusion of social space, such as a café, within the Belk Library was less of a priority because of its location adjacent to the University's Campus Center.

Occasionally the opportunity arises to create a new Information Commons that, by location, changes the way in which an academic community interacts. More often, the location of the Information Commons is predetermined by the form of the existing library or other facility in which it will be located. In either situation, the facility's location will affect the types of programs offered and the ways in which services and resources are arrayed within the Commons. For instance, the Robert W. Woodruff Library at Emory University is located at the edge of the main campus, where it helps to define one boundary of the academic district. Its Commons is a destination point for patrons who seek critical resources and services, much like an anchor store in a shopping district. The Commons area in the Donnelley and Lee Library at Lake Forest College is designed as a physical link that unites academic and residential areas of campus. At Dartmouth College, the "Street of Services" runs the length of the Baker-Berry Library and draws people through the facility as they move from one side of campus to the other.

When the Information Commons becomes a crossroads with multiple entrances, it is necessary to think differently about security and to seek design solutions that meet this need without creating barriers to the way people want to move and work. As more information is available in digital form, libraries' concern for the security of print material will evolve, so that the book security system and the building perimeter may not be one and the same. New approaches to collection security, bolstered by the advent of new technologies and systems that change operational procedures and improve collection organization and coherence, will also help lessen dependence on rigid security systems that are obstacles to users.

Dynamic spatial and programmatic concepts that contribute to the vitality and strength of the Commons facility can be the result of facing budgetary realities and space constraints. In planning the Commons, the campus should be viewed as a whole in order to emphasize shared uses and to minimize redundant space. An institution may be attracted to the Com-

Continued

mons' ability to combine classrooms, food venues, and multi-use event spaces with more tra-ditional library and technology program components in order to create a single, strong facility that is open longer hours. At the five-thousand-student College of Saint Catherine, in St. Paul, Minnesota, the library, information technology services, academic support, student center, din-ing hall, and chapel are all interconnected in the Coeur de Catherine, thus creating a Learning Commons that encompasses social, intellectual, and spiritual growth.

When funding a large project is not feasible, institutions may approach the Information Com-mons as a smaller place for experimentation with new services and resources. In the design of a small, experimental Commons, with a lower cost and less investment of physical space, institutions can more easily afford risk-taking with programs and design. Rice University's Electronic Resources Center, an open-plan learning lab with flexible settings for group and indi-vidual work, was implemented in an area that became available when the business school re-located to a new building. In this space, both the physical and operational aspects of an open, collaborative environment were tested and refined to inform a subsequent, larger renovation within the main Fondren Library. In Wellesley College's Clapp Library, the Knapp Center was created from an underutilized basement area by transforming a relic lounge space from stu-dent gatherings in the 1960s into a leading-edge media and technology center. The success of the Knapp Center has led to further integration of digital resources and tools in subsequent renovations of other areas of the Library.

These examples are representative of the breadth of design possibilities inherent in the Com-mons model. In each instance, the success of the facility depends on customization of the de-sign and program to address unique institutional parameters such as scale, budget, location, and programmatic priorities. The strength of the Information Commons model as a spatial and functional reality lies in its adaptability to the specific identity of campus learning culture.

Increasing Breadth and Complexity

The Commons continues to thrive by evolving to support new ways of working. Commons spaces now include broad and complex arrays of services that reach far beyond the integra-tion of Library and IT tools that were originally the genesis of the Information Commons. Com-mons today may include writing centers, math labs, media production studios, experimental classrooms, digital content development facilities, video conferencing, and large-format print-ing areas. The iPod phenomenon extends the physical boundaries of learning even further, and student laptops now function as mobile, personalized media centers through iTunes, iMovie, DVD players, instant messaging, and software for writing, drawing, editing, and collaborating.

Continued

An ongoing challenge that affects the Commons design is the need for institutions to creatively connect a broader cross-section of the campus community, particularly faculty, with the happenings of the Commons. This has led to the incorporation of a greater range of space uses, including event spaces, experimental classrooms, exhibit areas, curriculum development labs, and academic support services. With these new components and activities, boundaries between library-learning center and campus-community center have begun to blur, and the Commons concept has gradually transitioned from early library- and computing-focused Information Commons to a more inclusive model, the Academic Commons.

With this increased breadth of services, the Commons becomes a place to showcase the campus community and activities of many types. Accordingly, its spaces must be transformable for "instant theater": parties, conferences, forums, and events. With expanded usage, a host of new design and operational challenges emerge: access for larger volumes of people, increased maintenance, parking, and more complex zoning of physical space. With these challenges come opportunities to capitalize on the excitement created by expanded ranges of activity that attract attention and draw in the community. Most importantly, these new uses enhance the richness and vitality of the Commons. People want to study, work, socialize, and attend events in a place that is majestic, innovative, "cool," or memorable. Vibrant colors, textures, and materials, and attractive, comfortable furnishings give identity to the facility and create an intellectual and social learning environment that is met with delight from its users.

The blossoming of the Information Commons, from its initial conception as an integrated access point for technology tools and print and electronic information resources into a dynamic organization for the support of teaching, learning, information literacy, social intellectual engagement, and student and faculty excellence, is evidenced by tracing the physical form of these facilities over the past two decades.

The first Information Commons project with which Shepley Bulfinch was involved was the Gateway Commons at the Leavey Library, University of Southern California. An early model for subsequent Commons, it was developed in 1988, when the growing importance of computing to academic research necessitated the rethinking of physical space at USC. Its program components and synergies were to become hallmarks of the space type: a learning place within the library where students could use computers to access electronic information resources in tandem with use of the library's print reference collections, nearby electronic classrooms, open computer workstations to support collaborative work, and glass-enclosed group study rooms. In the subsequent creation of a vision for the Baker-Berry Library at Dartmouth College, in 1996, the program components of the Leavey Library Information Commons were built upon to create a commons-type learning environment that integrates media and digital production services and includes a 24/7 café that provides a place for intellectual conversation and connection to community news and events. Its physical organization was designed to be more

Continued

inclusive: its "street of services" runs through the entire library to connect reference, circulation, computing help, academic computing professionals, reference librarians, a computer store, the café, and the media center. Today, developers of Commons projects continue to seek expansion in the breadth of services provided. Georgia Tech is planning the integration of their Library and Undergraduate Learning Center to create a new complex that emphasizes support of the undergraduate educational experience. The facility will contain transformable spaces suitable for performances, exhibits, and experiential learning, and will include work areas for academic advising, international education, and other student success programs. Other institutions have similar facilities in the planning stages, each of which provides a unique array of resources appropriate to its institution's academic mission and vision. Most are depending on technologically-robust, reconfigurable, multi-use space designs to achieve their goals.

Conclusion

The Information Commons has expanded far beyond its genesis in Library and IT environments, and has come into its own. It is a distinct type of learning space that accommodates change. Its shape is unique to an institution's culture and population and brings together the best of campus learning resources. Planned to leverage the efficiency of reconfigurable and multi-use areas, its physical form provides fluid connections between varied activity zones, addresses acoustical control within open and enclosed areas, and accommodates increasingly robust infusions of technology tools and infrastructure. The environment is enhanced by palettes of rich colors and textures that provide a vibrant look and feel, and by the use of glass and open space to provide transparency and visual connection. Taken together, these physical characteristics define a new academic space type whose genesis was the Information Commons.

During the early planning phases for learning environments such as Commons, we have heard from countless student groups about the operational quirks of campuses that were not planned to include current technology tools and curricular approaches: running back and forth between the library and the computing lab, standing in line for a space in the lab, having to pack up and leave to take a study break or get something to eat, and the lack of places to work together on campus, even though classes require more and more group work. Learning spaces best address these problems if they are approached as user-driven environments where students and faculty are the designers of the way they want to work: with tools, resources, and each other. The development of user-driven design responses is the most important aspect of any Commons project. The more we explore how people are actually working with new and diverse tools, the better we can anticipate their needs. As a design strategy, this will allow the Information Commons to meet the future and make the most of it, to focus on discovery, and to leave barriers behind.