

Does the Building Really Matter? Facility Improvements and Library Usage

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Introduction

More than 400 academic library facility projects—new libraries, additions to existing buildings, and renovations—have been completed since 1995. Many other projects are currently under construction or in the design stage. Still other institutions are pursuing funding strategies to build new libraries or upgrade their existing facilities to meet space, technology and user needs.

There are abundant examples of exceptional creativity in the projects completed during the past seven years. Nova Southeastern University has collaborated with the Broward County Public Library to build a joint-use Library and Information Technology Center. The University of Kentucky has built a new library relying entirely on compact collection storage to maximize user space. Eastern Michigan University has included a state-of-the-art auditorium and a bookstore in its new facility. Dickinson College and Agnes Scott College have nearly doubled the size of their libraries with elegant, seamless expansion and renovation projects. The University of Nevada-Las Vegas has

installed an efficient automated storage and retrieval system fully visible from its grand atrium. Penn State Harrisburg has included a State Data Center office in its new facility. Mansfield University has beautifully renovated a turn-of-the-20th-century classroom building to provide an attractive, contemporary learning environment.

A common thread in these building projects has been the infusion of technology throughout the facility. Many facilities now provide wired network access for laptop computer users at 75 percent or more of all user seats. Wireless access in many facilities is ubiquitous throughout the public seating and stack areas. Many libraries now feature an Information Commons with a large number of computers, multi-media production equipment and expert assistance. High-quality instruction labs, many of them approaching state-of-the-art status and providing hands-on access for all students in a class, have been commonplace in these projects. The number of group study rooms has been increased considerably to address the trend toward collaborative learning. User

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comfort in its many aspects—comfortable furniture, excellent natural and artificial lighting, effective HVAC systems, CyberCafes and snack bars, well-designed wayfinding signage, etc.—have been addressed carefully.

The list of innovative solutions in new, expanded and renovated facilities could go on indefinitely. However, these few cases illustrate the variety of creative solutions implemented recently to make academic libraries responsive to current and anticipated future student needs.

Challenges to the Physical Library

At the same time, however, many academic libraries have experienced declines in circulation and student use of the physical library facility. That trend may be explained in part by the ready availability of widespread network access to an increasing array of electronic resources, plus the Internet. Generation Y student fascination with technology, as noted by in several presentations by Stephen Merritt and in a recent Pew Internet and American Life Project report, is also a major contributing factor.¹ However, reductions in traditional usage measures are also a matter of political concern, since circulation and building use are widely understood measures of library success within the academic community. Although some database usage figures have been made available by aggregators, it has been difficult for librarians to document the overall usage of these services with fragmentary data. Declining usage also, inevitably, raises questions about the need for, and importance of, library buildings with academic administrators.

The declining use of some physical library facilities received broad attention in November 2001, when Scott Carlson's controversial "deserted library" article appeared in *The Chronicle of Higher Education*.² Although the actual article documented both declines at specific libraries and major usage increases at several institutions, that issue's cover photo of unused library tables and carrels left a clear impression that physical libraries have become marginalized. Given *The Chronicle's* wide readership and the strained financial resources of many institutions, this article reinforced existing concerns about the importance of the physical library facility for collections, research and study in an increasingly decentralized information environment.

Anecdotal evidence from many new, enlarged and renovated libraries suggests that facilities investments are associated with significant increases in student usage, even with abundant Internet and electronic database resources accessible from non-library locations. Experienced planners on the Library Administration and Management Association (LAMA) Facility Planning Discussion Group estimate that usage in new buildings typically increases 30 to 70 percent. The King's College Library at Western Ontario University experienced a 420 percent facility usage increase after opening a new library.³ St. Martin's College reported a similar gate count upsurge, with usage rising from 56,964 persons in 1999–00 to 171,095 users in 2001–02, after opening a new facility on January 17, 2001.⁴ However, that evidence has not been supported by systematic empirical investigation. It is also unclear whether specific building enhancements lead to particular types of usage increases. Lacking validated evidence of the facility improvement/library usage relationship, librarians increasingly fight an uphill battle to secure funding for facilities projects of any type in an increasingly technology-focused, decentralized and fiscally tight institutional environment.

Clearly, there is still significant support in higher education for a physical library, whether as an academic asset or for purely symbolic reasons. However, in an era of escalating technology costs and competing institutional claims for limited capital project resources, it is reasonable for academic administrators to ask whether enhanced library facilities will provide educational benefits sufficient to justify the investment of scarce resources. If such benefits are demonstrable, it is important to determine what types of facility improvements contribute most directly to increased student usage and whether the usage increases persist once the novelty of a new facility has passed.

Users and Buildings in the Literature

The library literature abounds with usage and user studies. Michael Buckland addressed the impact of open stacks on collection use in *Book Availability and the Library User* in the 1970s.⁵ Allen Kent and his colleagues reported in 1979 that many books in research library collections go unused for long periods of time.⁶ Charles Osburn examined the implications for libraries of changing research patterns in the social sciences, humanities and sciences.⁷ More recent stud-

ies have focused on disciplinary information searching patterns,⁸ student web use in research,⁹ and library anxiety,¹⁰ among other topics.

There is also an ample and growing literature on library facilities and space planning. The facilities-focused contributions are generally practical and heuristic in nature, focusing on the planning process, elements of good design, key building features, space requirements for people and collections, incorporation of technology, HVAC systems, furniture, lighting, collection moving and other aspects of facility planning and occupancy. Some titles, such as Bazillion and Braun's *Academic Libraries as High-Tech Gateways*,¹¹ provide superb guidance for blending technology into a welcoming learning environment. Crosbie and Hickey's *When Change Is Set in Stone* delivers visual evidence of successful solutions in varied institutional environments.¹² The annual *Library Journal* (December) and *American Libraries* (April) architectural issues provide extensive documentation for a number of library projects completed during the preceding year, plus architectural photographs from selected facilities and AIA/ALA award-winning libraries. A number of other books and periodical articles are helpful for building planning in general and for addressing specific facility issues.

Ironically, given the large cost of new and enhanced facilities, there are no studies in the library literature providing empirical evidence of the impact of improved buildings on student usage of the physical library. With increasing student reliance on the Internet and electronic resources, along with growing administrator awareness of declining usage patterns in some physical facilities, it is important that a verifiable relationship between capital investments and student usage be demonstrated. Without such clear evidence, academic librarians will be hard-pressed to make the case for future enhancements.

There is disagreement within the library community about the significance of the physical library. Gorman has argued eloquently in *Our Enduring Values: Librarianship in the 21st Century* that the "library as place" serves a number of socially valuable roles beyond providing a physical location for books and librarians.¹³ Some virtual library advocates see the need for collection and user space diminishing as electronic resources become increasingly central in student research and scholarly communication. Whatever the

relative long-term value of the physical library and virtual library may be (and this investigator shares Gorman's belief that the physical library matters profoundly), the future willingness of academic administrators to invest in library facility improvements is likely to depend heavily on the library's ability to demonstrate:

- 1) that improved facilities will significantly increase building usage;
- 2) that greater use of the library building will improve educational outcomes; and
- 3) that the library knows what types of facility enhancements are most likely to produce the desired usage and educational results.

Project Definition

This paper describes a current research project designed to determine the relationship, if any, between library facility improvements and long-term library usage patterns. The findings should provide objective evidence of the value (or lack of value) of high-quality library facilities for supporting student research. They should give academic administrators an empirical basis on which to judge the desirability of possible capital investments in new, expanded or renovated library facilities. They should also indicate the types of improvements most conducive to expanded usage levels and those having a more marginal impact. By identifying those building features most closely associated with increased library usage, this study will also provide useful guidance for academic program planning, library facility planning and renovation, and capital project investments at higher education institutions.

In addition, the project will also be used to generate an Academic Library Projects Database for the Library Administration and Management Association (LAMA) Buildings and Equipment Section (BES). The resulting projects database will enable academic librarians to readily identify benchmark projects relevant for their local facility planning needs. At present, both academic and public librarians lack a central repository of knowledge about recent facility projects, making it difficult to identify appropriate examples of outstanding, relevant facilities to share with campus administrators. By using this database, academic librarians will be able to identify appropriate libraries for site visits, thereby helping them contrib-

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ute to the design of welcoming, future-focused libraries, rather than simply enlarging existing facilities.

The author has been granted a six-month sabbatical leave in spring 2003 to examine the relationship, if any, between library facility improvements and library usage levels in American colleges and universities. He gratefully acknowledges the extensive contributions of Shawn Tonner, Immediate Past President of LAMA BES, to the development of the Academic Library Projects Database through protracted searching of enhanced library web sites and her enthusiastic encouragement for conducting this research project.

Research Design—Overview

Original planning for this project began in June 2001. The project is proceeding through five identifiable phases:

1. Literature review and consultation with experts (started August 2001; ongoing);
2. Data collection, project database development and preliminary analysis (October 2002–February 2003);
3. Site visits (March–April 2003);
4. Final data analysis (April–May 2003);
5. Writing and preparation of presentations (May–August 2003).

Literature and Knowledge Review

Preliminary research for this project has been under way since June 2001. A cross-disciplinary literature review is being conducted, based on the assumption that relevant insights can be secured from the literatures of higher education, architecture, academic facilities management, communication, sociology and psychology, in addition to library and information science.

The higher education literature can be expected to yield knowledge about current facilities planning and priorities. The literature of architecture will be reviewed for both current thinking about educational facilities planning and post-occupancy evaluation. The academic facilities literature will complement the architectural literature in some areas, with a more specific focus on post-building maintenance issues. The communication literature should provide perspectives on evolving practices in formal and informal communication in academic environments and in society more generally. The literatures of sociology and psychology

should provide insights into social and psychological variables, such as physical space needs, socio-economic status, and “social facilitation” influencing student behavior and the use of public facilities.

In addition to searching through standard indexing sources, the principal investigator will perform several web searches to identify facilities projects and reports not available through electronic databases and print indexes. Web resources will be utilized with appropriate precautions about their authenticity, except where connections to an authoritative source can be established.

Finally, the principal investigator will continue a series of ongoing discussions with architects and librarians experienced in facilities planning. These conversations are intended to capture knowledge not available in printed formats and expert opinions.

Data Collection and Analysis

A targeted web survey was e-mailed, in mid-January 2003, to the directors and deans of libraries completing a major facilities project between January 1995 and December 2002. That survey has been designed to determine the both the overall impact of facilities projects on building usage and the correlations, if any, between particular facility characteristics (seating adequacy, number of data ports, etc.) and usage levels.

The survey instrument was designed with assistance from the Survey Research Center at Penn State Harrisburg and the Institute for Social Science Research at Penn State’s University Park campus. Phased, state-by-state mailings of the survey cover letter were conducted by the Institute to avoid overloading the mail server.

Several types of data have been found necessary for successful completion of the project. First, a fairly comprehensive listing of recent academic library projects has been developed from the following sources:

1. Annual architectural issues of *Library Journal* (December), 1994–present
2. Annual architectural issues of *American Libraries* (April), 1994–present
3. Annual library project listing from the *Bowker Annual of Library and Book Trade Information*
4. Periodic news announcements in *College & Research Libraries News*, *LJ Hotline* and other library publications

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5. LAMA BES project compilations
6. Listserv requests by Shawn Tonner on various LAMA listservs and one community college library listserv
7. Google web searches
8. Informal communication with librarians and architects active in LAMA BES or exhibiting at American Library Association conferences

The number of library projects identified through this systematic search far exceeds the number listed in the annual reports above. It is believed that the project listing closely approximates the total number of projects meeting the base inclusion criterion (minimum size equals 20,000 square feet) completed during the time period under investigation. Since the study population closely resembles the overall population, sampling is not necessary.

In addition to yielding a study population for this investigation, the listing of projects from the 1995–2002 period will eventually be expanded into the academic library projects database discussed earlier. This database will list new libraries, additions and renovated libraries meeting inclusion criteria (20,000 square feet minimum), along with their completion dates, cost and special features. The database will be structured to permit the sorting by unique building features, such as the number of group study rooms, data ports, presence of CyberCafes, use of wireless networks and similar variables.

Findings from the survey will enable the investigators to compare library facilities and usage patterns before and after the completion of a building project. Data from the responding libraries will be exported into a statistical software package, either SASS or SPSS, to permit cross-tabulations of facility and usage variables and the running of statistical tests across selected variables. Individual library responses will also be saved until November 2003, with full respondent confidentiality, to permit closer assessment of responses from specific libraries. Finally, this survey instrument has provided an opportunity, through several open-ended questions, for deans/directors to share their own observations about usage patterns before and after project completion.

Usage variables will include exit counts, circulation statistics, in-house collection use, and reference transactions in years before and after project comple-

tion. Facility variables will include, comparing the pre-project and post-project libraries:

- Square footage
- Physical layout/ease of navigation
- Number of general purpose seats (table seats, carrels, lounge seats)
- Quality and variety of seating and work surfaces
- Number of public access workstations
- Number of data ports
- Percentage of seats with network access (wired or wireless)
- Logical location of service points
- Quality of telecommunication infrastructure
- Number of group study rooms
- Number and quality of instruction labs
- Presence of a snack bar or CyberCafe
- Presence of non-library facilities (computer lab, classroom, general use classrooms, art galleries, writing labs, auditoriums, multimedia production labs, research institutes, bookstores, etc.) within the building
- Hours of operation per week
- Food/drink policy
- Quality of natural and artificial lighting
- Quality of HVAC systems
- Interior color selection
- Adequacy of collection storage for ease of use and growth
- Use of compact shelving

It is anticipated that these facility variables cover the major factors contributing to student use, or non-use, of enhanced library buildings.

Several institution-specific variables will also be analyzed for possible impact on library usage. These variables will include: Carnegie classification, full-time and part-time enrollment, graduate/undergraduate composition of the student body, percentage of commuting students, proximity to parking facilities, centrality of physical location, percentage of students owning computers, student access to computers in other campus locations (residence halls, student center, etc.), and library reputation on campus. Data for these variables will be collected from standard data sources and during site visits.

The findings from this survey will be compared with data from a control group of comparable libraries not completing a building project during the study period. Usage data from standard sources, such as

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ACRL's *Academic Library Statistics* reports and the U.S. Department of Education's IPEDS survey, will be used to complement survey responses and to provide data for institutions not completing a library facilities project during the study period.¹⁴ Findings from a current usage study commissioned by the Council on Library and Information Resources (CLIR) will also be utilized as a comparative data source.¹⁵

Site Visits

Targeted site visits will be arranged, following analysis of the survey data, to permit on-location observation of specific facility enhancements, to provide a visual record of exemplary facilities for forthcoming articles, and to permit direct observation of usage patterns in these facilities. These visits may also be used to conduct in-depth interviews with academic administrators and selected faculty members, such as Senate Library Committee chairs, for their perspectives on "enhanced library" impacts upon usage patterns and campus life.

A sub-set of institutions will be selected for site visits. Dramatic usage findings (i.e., very large or minimal post-project increases in usage), appropriate institutional variables (Carnegie classifications, etc.) and enhancement-specific criteria will be used to select specific libraries for on-site study. The site visits will be conducted between April and June 2003.

Dissemination of Research Results

It is anticipated that this research project will yield an important set of empirical findings on the impact of new/expanded/renovated facilities on library usage. The research results will be shared with academic librarians and higher education officials through journal articles, conference presentations and opinion pieces. Given their importance for the future of physical library enhancement, it is important that eventual dissemination of the research results not be confined to the academic library community.

This relationship has not been studied systematically in the Library and Information Science literature, and there is an important need in the profession for empirical evidence on the facilities/usage relationship to advance the state of knowledge in the profession. The identification of usage-enhancing facility improvements should also have a practical benefit, helping librarians, physical plant officials, architects

and academic administrators to focus on building features contributing most directly to the educational mission of the institution. It will also advance the ongoing "library as place" debate within Academic Librarianship and in the library profession more generally.

In conclusion, the findings from this study will address a major gap in the knowledge base of library science and will contribute to a current understanding of the "library as place" in a changing information environment. The study will:

- Provide empirical evidence of the relationship, if any, between facility enhancements and attributes and associated usage patterns in academic institutions;
- Promote the planning of library spaces addressing student research and study needs in an increasingly electronic environment;
- Provide management information for academic administrators and library directors faced with inadequate collection, seating, technology and other capacities in current library buildings;
- Clarify the role of physical libraries as sustainable learning environments in higher education;
- Generate a database of significant academic library building projects to inform academic librarians and facility planners.

While the findings of this research project cannot be determined in advance, it is anticipated that the study will provide empirical evidence that new and expanded/renovated buildings contribute measurably to increased usage of the physical library, while uncomfortable and technologically obsolete facilities discourage facility use. The findings are profoundly important for the future role of libraries and the significance of the "library as place" in higher education.

Postscript

The presence of new technologies, technology-savvy students and new, virtual competitors has challenged traditional models of higher education, while also raising important questions of choice for academic administrators. The need for library facilities, collections, services and personnel is one of those choices. Specifically, does a physical library make a difference in the quality of education provided? Do improved library facilities have a measurable impact upon facility usage and the broader academic experience? Do high-

quality library facilities make a difference in student recruitment in an enrollment-driven budget environment? These questions are not answerable by anecdotal evidence alone. In a period when incoming students are increasingly technology-focused and have relied substantially on Internet resources prior to entering college, they are also critical for defining future teaching, research and facility directions for all academic institutions.

Notes

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