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## **AC 2012-3082: TRANSFORMING A LIBRARY INTO A BOOKLESS BRANCH AND INCREASING DISCOVERABILITY OF THE VIRTUAL LIBRARY**

**Ms. Jill H. Powell, Cornell University**

Jill Powell is Engineering Librarian at the Engineering Library, Cornell University. She worked in publishing before coming to the library in 1986. She has a B.A. from Cornell and a M.L.S. from Syracuse University. Active in the Engineering Libraries Division of the American Society for Engineering Education, she served as Program and Division Chair in 2004-2005. She is the library liaison to these departments: biomedical engineering, electrical and computer engineering, and mechanical and aerospace engineering.

# Transforming a Library into a Bookless Branch and Increasing Discoverability of the Virtual Library

## Abstract

A traditional academic engineering library over 50 years old in its present location is targeted for closure. But the library doesn't close; it becomes "bookless." A committee to re-envision the library develops recommendations to close the circulation desk and transfer the physical volumes to other campus libraries, but gains significantly more funds for digital collections, a new website, and an increased role of professional librarians onsite. The library building never closes and is transformed into a 24/7 research and computing center. The events leading up to the move, the aggressive conversion to more electronic resources, the procedures and complexities involved in moving, course reserves, and the unexpected are examined. Communication plans and a new website featuring a Curated List of Library Resources (CULLR) focused on engineering resources are presented.

## Introduction and Background

The Engineering Library at Cornell was built in 1957, bringing together smaller engineering department collections that were housed in other buildings. Upon opening, the first engineering librarian Jeanette Poor wrote that the engineering library committee and architect worked together to "develop a library which would keep pace with the rapid advance of science and technology, one which would be a center for engineering education, research, and study."<sup>1</sup> This statement is still relevant today as consolidation has been repeated over 50 years later, and a new bookless branch emerged in the same space.

Many libraries across the U.S. experienced sharp downturns in their budgets in 2009 due to the national financial crisis and continually rising serials prices.<sup>2</sup> Those universities relying on endowments to pay for collections also experienced sharp decreases. An email distributed by the author in October 2011 to the [eld-l@u.washington.edu](mailto:eld-l@u.washington.edu) mailing list generated approximately 20 responses from engineering libraries discussing branch consolidations.<sup>3</sup> All were undergoing either downsizing, branch library closures (not necessarily engineering, but science collections), and consolidations. What types of closures are happening? Are there best practices that can be shared?

## Literature Review

Regarding the number of branch libraries, ARL has a related count, "staffed service points," available. While not all libraries reported, the median number of service points from FY04 to FY10 shows an 11.9% decrease from FY04, from 21 to 18.5.<sup>4</sup>

The restructuring of academic branch libraries, often done for economic and political reasons, can take many various forms. Models vary from combining circulation and reference access service points (Cornell),<sup>5</sup> to combining reference departments in the same building (CSU-

Sacramento),<sup>6</sup> to moving out all books and to closing a library (Engineering Societies Library,<sup>7</sup> University of Washington,<sup>8</sup> and Louisiana State University).<sup>9</sup> In between are many permutations of change: newly built libraries that combine existing branch libraries (Princeton's Lewis Science Library combined 5 science libraries);<sup>10</sup> drastically downsizing a collection to 10,000 volumes in a new library (Stanford);<sup>11</sup> limited books libraries that keep study/computer space, circulation desk, loaning laptops, course reserve desk, small reference collection, some print journals, and professional librarians (Kansas State University);<sup>12</sup> and completely bookless libraries with study/computer space and professional librarians (Cornell,<sup>13</sup> University of Texas at San Antonio Engineering Library).<sup>14,15</sup> The University of Chicago's Mansueto Library appears to provide an interesting blend of both virtual and print worlds by having an architecturally striking dome virtual library at ground level, with access to any of 4.5 million books with robotic retrieval in 5 minutes.<sup>16</sup>

Winterman's article on branch library downsizing at the Indiana University contains a good bibliography of articles on the past history, current situation, and mechanics of downsizing.<sup>17</sup> Lessin's article on merging science/technology libraries provides an excellent analysis of why various branch library merge, and discusses the Crerar/Chicago merger and University of Louisville libraries among others.<sup>18</sup> Zhou discusses the advantages of reference desk mergers at California State University, Sacramento.<sup>19</sup> Dodd gives good advice on strategic planning with architects and administrators.<sup>20</sup> Popescu gives a detailed report of the result of student focus groups and their input for library spaces.<sup>21</sup>

Cornell has 3,051 undergraduates, 1,426 graduates, 236 faculty, and 217 staff in the College of Engineering, which has 12 schools. There are 2.5 engineering librarians, down from 9.5 FTE staff when this author started work 25 years ago. Administrative consolidation had already taken place with the Engineering, Mathematics, and Physical Sciences Libraries cluster, who share staff and expertise. The director of the Mathematics Library also became the director of the Engineering Library. In preparing for large budget cuts across the university in 2009, the university provost directed the university library to explore the consolidation of some unit libraries and develop a concrete plan to enhance resources devoted to collections. The Cornell University Library overall experienced over \$1 million budget cuts each year for 2 years in a row.<sup>22</sup>

Rankings and competition among schools is important, and Cornell's rank for the amount of money spent on collections had fallen precipitously. The University Librarian stated it was impossible to keep all branches open while at the same time substantially increasing money for collections, so committees were formed to look at library consolidations. The Physical Sciences Library was the first to close in December 2009.<sup>23</sup>

#### Developing a Plan to Re-envision the Engineering Library

The Advisory Committee to Re-envision the Engineering Library was comprised of faculty, librarians, graduate students, and undergraduate students. They gave their report to the Dean, Librarian, and Provost, and a decision on the library's transition was made public in June 2010.<sup>24</sup>

Recruiting for this committee was important. The Dean recruited open-minded faculty and librarians recruited students through relevant student organizations. Of high importance was ensuring students' needs were being addressed. As a result of their representation, 24/7 building access was implemented (via ID card), and new chairs were ordered to replace all the chairs from the now closed stacks. There were about 50 seats scattered throughout the stacks, and students were keen to find replacements for these seats in the restructured library. Some 60 new chairs, which glide noiselessly, were installed in the former circulation desk/technical services space. No seating was lost to students as a result of the closure, and two new group rooms were added for a total of 129 study seats and four group study rooms. Computers and desks would remain; administration of the computers and teaching labs would move to central computing who arranged staffing from 8 am – 12 midnight during the week. The 114 computers have high-end engineering software that students use for courses.

Of the Engineering Library's print collection only 14% circulated in the last five years. These could be relocated to other central campus libraries, where space was made available. The collections budget was 25% underfunded and many important resources were unavailable due to lack of funds. Based on this and other information, the committee unanimously recommended that the Engineering Library focus on providing electronic resources and that funds be reallocated from operations to online collections. The committee's recommendations focused on three themes: enhancing the electronic collection, providing effective study space and computer access, and expanding the role of librarians. To accomplish these goals, the physical collections were relocated, with the highest use material placed in other central campus libraries, including reserves. It was reassuring to hear the committee valued the work of the librarians. They wanted the librarians to remain onsite providing reference, instruction, and collection development services. Four circulation and technical services staff faced layoff but had one year's notice and found other positions on campus.<sup>25</sup>

Publicity about this transition was handled by the director and library communications. There were email announcements, blog posts, news articles, and wall displays. Most people did not object – they saw it as inevitable. Every department on campus was experiencing difficult cutbacks. Others were very upset but their numbers were few. The majority of faculty admitted they came to the library infrequently and used mostly online materials. They were satisfied as long as the library buys what they need and sees to the needs of the students with regards to study and computing space. The engineering librarians have been presenting at faculty meetings to update everyone on the transition, correct misconceptions, and answer questions. This has led to better communication and more awareness about our resources, especially e-books.

Course reserves and the book drop were noted losses. By closing the circulation desk, the engineering community lost easy access to the 500 course reserve books, which were moved to the nearby main library, Uris Library. Efforts were made to get as many of these online as possible; however, only about 12% are available to institutions. On the plus side, these books are in the most recognizable library on campus – Uris Library with the bell tower – and this move will encourage engineering students to interact with undergraduates from other colleges, fostering a greater sense of community.

The Move Details

An administrative assistant from the central libraries was available to handle many of the move details. She contacted movers, made schedules, took minutes at meetings, and was the liaison with technical services. She arranged to sell duplicates to a bookseller and send unwanted copies to recycling. She became an expert in this area and is now busy working on moves associated with Cornell's Hotel and Management libraries (which are merging their collections into the Industrial and Labor Relations Library). Fortunately, there was over one year available to prepare for the move—an important lesson learned from an earlier library closure, the Physical Sciences Library, which had to close its stacks and circulation desk in less than 9 months. Besides the entire book move planning involved, a year gave laid-off staff more time to get assistance in finding other positions.

The Engineering Library started with 192,000 volumes before the move. Duplicates (mostly bound journals) were withdrawn (10,000 volumes). Approximately 2,550 books were sold to a bookseller for about \$550. Any book charged out in the last 5 years was deemed worthy of retaining on central campus. This involved about 25,000 books. Using approval plan call number lists, librarians determined which libraries should absorb which books. About 20,000 went to Uris Library, which had a formerly humanities/social sciences focus. The Mathematics Library and agriculture and life sciences library (Mann Library) absorbed smaller amounts (3,500 to 1,500). The bulk of the collection, 158,000 volumes, went to the off-site storage (Library Annex). Fortunately there was enough space. For libraries where remote storage is not an option a good article on weeding is Hoesly's discussion about the University of Wisconsin, Madison.<sup>26</sup>

Moving a library requires considerable planning. It involves staff from technical services collections, stacks maintenance, library systems, reference, and circulation. Below are some items considered at Cornell:

- 1) Materials are divided into serials (ceased and current), monographs (single and multivolume), reference, audio-visual, microfiche, reserves, rare, and theses. There may be boxes of donations stashed in the stacks that have not been cataloged, and these must be gone through and decisions made to catalog or to withdraw. Bind as many loose journal volumes as possible, as the off-site storage facility only accepts barcoded and bound volumes.
- 2) Duplicates need to be identified and withdrawn/sold/recycled since the Library Annex does not accept duplicates.
- 3) Destination choices must be listed (Annex, other campus libraries, withdraw, sell, or cancel serials).
- 4) There are standard reporting criteria available to help analyze the collection: Publication date, language, circulation statistics, LC call number first cutter, serial status (ceased, current), already in annex, or duplicate.

- 5) Once criteria are established, systems staff can generate reports for librarians' review. After decisions are made about destinations, a picklist with barcodes is distributed to the movers to pull the books.
- 6) Destination libraries – consult with them before making final decisions. They may have special requirements (such as shelving by oversize) to follow or will need to make space to receive the books.
- 7) Google Books – Google scanned some 30,000 items from the Engineering Library collection for the Google Books project. In order to move books only once, the decision was made to move books immediately to the Library Annex after the scanning.
- 8) Reference books – are often handled individually by reference and collections staff, see below.
- 9) Theses – these were identified and moved together early to the Annex since they are high use, and doing so would minimize delays for patrons requesting them.<sup>27</sup>

The collection development and reference librarians were busy examining the reference collection to determine destinations. This was a time-consuming process of wheeling in a truckload of books to one's office each day and searching them for online availability. It was much preferable searching online in one's office to bringing a laptop to the reading room and disturbing patrons seated nearby. From about 2,500 reference books the majority went to the Library Annex, then another group to the Uris Library stacks. About 300 were selected to form a new Engineering and Physical Sciences Library Reference Collection within the Uris Library. A small number were retained in the Engineering Librarian's office. Many ongoing monograph subscriptions were cancelled where online equivalents could be found.

### Converting Journals Online

Going through the journal collection took months of work, transitioning as many as possible online, even if it cost more. This involved emailing technical services staff, vendors, and publishers on hundreds of titles. Many journals were cancelled if no online equivalents existed or were not available to institutions. This was frequently the case with some trade journals. While successful in converting 90% of the journals online, about 50 titles were kept in print because of licensing restrictions, non-availability of online coverage, and knowledge or evidence of use. These are shelved in the stacks of the destination library. About 20 journals continue to come in print even with reliable online subscriptions in place, and these are displayed in the old current periodicals area. Called "display and discard" they require minimal processing. Shelved by title; they are not checked in, and are sent to a backorder service when they exceed available shelf space.

### Patron Driven Acquisitions and E-Books

E-books are privileged whenever possible over print books. Most print approval plans were converted to online or to a patron-driven acquisitions plan. Records for e-books in a designated

profile are loaded into the catalog and available for the patron to use, and only the books that are used are purchased. Some new books are not available electronically in the first few months, so print book records are placed in the catalog where a user can request the book and it is automatically rush ordered for them. The library receives far fewer print books now, but still orders them on demand. The librarian increased purchases of e-book packages and sub-packages, such as ENGnetBASE, Morgan & Claypool, Knovel, Safari, Books24x7, and Access Engineering to make more online resources available.

Collection development decisions try to be flexible – if someone needs an item in print it is ordered in that format. A good example is a Cornell faculty publication. This seems reasonable to retain in print so it is permanently owned. However, the majority of our users are happy with the online versions.

The librarians anticipated offering tours of the new space or Uris Library to users; however, patrons seem more interested in tours of the Library Annex which have been scheduled. Besides learning about the interesting engineering aspects of operating a large warehouse with a capacity for 6.4 million books, they are reassured to see the books there being cared for, and observe how rapid retrieval and scanning is done for items.

The two engineering librarians stayed in their offices, and had an opportunity to rearrange the furniture. So, using surplus furniture vacated by other staff it was arranged to better suit identified needs. Cubicles were removed and desks were installed with an open floor plan. Equipment was added, such as a 2<sup>nd</sup> monitor and tables to enable group consultations and meetings.

## Collections

The Provost wanted to allocate more money for collections, and some cost savings from closing the circulation desk was redirected into the collections budget. The University Library also reallocated funding from within the materials budget to help close the 25% underfunded engineering collections budget. Hence more important resources were acquired. This was the best part of the transition. Several engineering society digital libraries that had been neglected for years due to lack of funds were added, including SPIE, ASTM, and SAE digital libraries. Backfiles of journals were also purchased. A new webpage was created of new resources purchased in the last 2 years, which has been well-used.

## The Unexpected

While much of the plans ensured an orderly move, there were unexpected impediments along the way. The engineering librarians expected colleagues in other campus libraries to sympathize with transition, and agree to help whenever possible. While some staff went above and beyond, this didn't always happen. Many humanities/social sciences librarians were resistant to receiving 20,000 science and engineering titles. They maintained they did not have the training to help users with these books. The receiving libraries asked for money to pay for shifting and bindery. Stacks supervisors had to deal with unexpected formats, such as a miniature robot that came with a book.<sup>28</sup>

There were challenges in interfiling the new books that took extra time to resolve. The destination library shelved books by size (+ and ++) and the Engineering Library did not. They shelved CD-ROMs in the back of the book and the Engineering Library shelved them separately. For the most part, the Engineering Library staff had to do the extra work marking oversized books and joining CD-ROMs to books previously separated.

Probably the worst thing to happen from a public relations perspective was the lack of generated email notices for overdue and recalled books with the new location. Cornell uses the Voyager system and Worldcat Local. Patrons could no longer renew their books after the location flip (staff had to do this manually), and when a book was recalled they never received a notice and thus accrued overdue fines. It is important to assign particular staff (in systems and circulation) the responsibility of being proactive in contacting patrons by generating circulation reports. Fines were readily forgiven, but there were many confused users for a few months. This will fortunately end after the first renewal from a book's new location. The circulation staff was also overwhelmed by the additional of a large reserve book collection, which faculty were used to placing at the last minute in their smaller branch library. Removing a reserve book location in the reserve system was more problematic than originally thought, especially for "cloned" reserve requests.

The remaining engineering librarians were constantly asked about their situation. Questions like "Isn't everything online?" "Aren't you leaving?" "What are you doing now?" appeared frequently. The challenge is to articulate the role of librarians in a virtual/bookless library, which many people find difficult to grasp. Much of our job duties are the same – answering reference questions, ordering books and journals, offering instruction classes, referring people to print as well as online material – but the new situation creates many questions about our roles.

Despite staff cutbacks a new position was created - an outreach coordinator and collection specialist. This person is supporting 3 libraries – engineering, mathematics, and physical sciences. Two of these libraries are virtual. As outreach coordinator she posts news items to the shared blog, Facebook, and Twitter pages, updates the webpage, and assists with teaching classes. As collections specialist she will create spreadsheets to help monitor journal usage statistics, costs, and citation metrics.

### Improving Discoverability of the Virtual Library

Assistance from communications and technical staff was provided to create a new web presence and create professional print bookmarks and brochures. Such support was relatively new for branch libraries, done in recognition of their new virtual status, and to help users who missed close proximity to the physical collection. The new website is based on Apache Solr software, and allows for the harvesting of resources in a system the Cornell librarians call Curated List of Library Resources (CULLR). CULLR is a blend of automated and hand-curated lists of resources. Curation is done by subject specialists. CULLR gives the patron the ability to browse a subset of the total holdings of the library, in this case 270,000 engineering resources. It is modeled after what used to be housed in the physical Engineering library. These resources are tagged either by call number, package name (from 899 field), or bibliographic record ID (see



tables) and assigned to one or more disciplines. One can browse resources by eight major subject areas (such as civil and environmental engineering), format (e-book, e-journal, book, database, etc.), and content (handbooks, dictionaries, encyclopedias, directories, standards, and theses). For example, one could search for handbooks on renewable energy or browse for biomedical e-books. CULLR is an improvement over a regular search of our catalog because its resources have been specifically identified by subject librarians as being relevant to a discipline by deliberative automated harvesting for large sets (such as call numbers for journals) and hand-selected items (such as bibliographic IDs for relevant databases).

The following tables are snapshots from curatorial work on compiling bibliographic IDs, 899 field package names, and call number ranges for journals and assigning them to disciplines and sub-resource type, such as handbook, encyclopedia, etc.

#### Sample Bibliographic IDs:

title	bibid	discipline	Sub-resource
Alloy Phase Diagrams (ASM) (r	7055187	materials science,chemica	handbook
ASM handbooks online (no 89	7055173	materials science,chemica	handbook
chemnetebk	5168655	biomedical engineering,bic	handbook
EngNetBase	6992502	biomedical engineering,bic	handbook
Knovel ebooks collection (see	4004406	biomedical engineering,bic	handbook

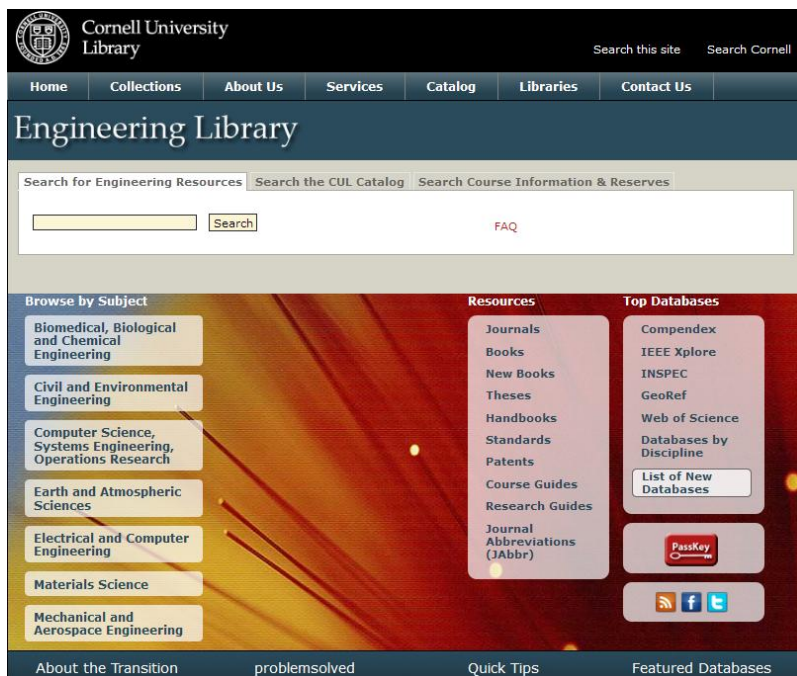
#### Sample 899 field package names:

title	899 field - package	discipline
IEEE journals (many have C	IEEEEX	electrical and computer ei
Lyell collection	lyellcollebk	earth and atmospheric sci
Morgan & Claypool	morgclayebkssdl	computer science,system:
MRS proceedings	MRSprocebk	materials science
Nanotechnology ebooks	nanonetebk	biomedical engineering,b

#### Sample call number ranges for journals:

Subject	call number range	discipline
general engineering	TA 1 TA 2040	civil engineering,en
hydraulic environme	TC 1 TG 1800	civil engineering
building constructio	TH 1 TH 9745	civil engineering
mechanical enginee	TJ 1 TJ 1570	mechanical and aere
electrical engineeri	TK 1 TN 9999	electrical and comp

Below is a view of the new Engineering Library website which provides access to the CULLR database:



The new website also contains documents relating to the library move, library news blog, quick tips, and featured databases. A curator interface allows subject librarians to weight certain resources, or add descriptions. Curators determined the sort order to affect the ordering of the search results. Relevant libguides were cataloged. In this case, the sort order is: research guides, course guides, databases, e-journals, e-books, journals, and books.

The library is actively looking at virtual shelf browsing systems to see what might work for the Cornell community. A committee is conducting focus groups and getting input on desirable features. For users who miss the ability to browse the stacks, the virtual shelf browse system should be an important new experience. It will potentially allow one to see book covers with titles, call numbers, dates, availability, table of contents, electronic resources, and designated course reserve titles.

## Conclusion

Having a committee with diverse membership improved the process for the transformation of the Engineering Library into a bookless branch. They strived to keep and expand on the library's best features while consolidating resources less used to save money. Most are pleased with the new resources and redefined spaces available to the engineering community. One graduate student stated the cornerstone of his thesis was an ASTM standard and he was thrilled to finally have online access to it and related standards. Further assessment with users will be necessary to see if their needs are being met. If we have any advice for other branch libraries facing transition, it would be to allow at least one full year for planning, designate a move manager, have frequent and open communications with staff (including systems and technical services staff), offer assistance to those facing layoff, and find a circulation point person to mitigate problems following the move. Follow-up is very important with circulation staff at the destination libraries so they can pre-emptively deal with renewals, recalls, and reserve lists. Contacting and

presenting at faculty department meetings is useful when possible. With only two librarians and twelve departments, this has been a challenge, but our meetings so far have been very beneficial.

The experience at the Cornell Engineering Library shows that a downsized library can still remain a vital study/computing space for undergraduates and also serve the necessary online information needed for research and teaching. At Cornell, money saved from the closure of the circulation desk and technical services functions has been redirected to managing and paying for more online subscriptions, because online is where the activity is. Nancy K. Roderer, director of the medical library at Johns Hopkins University noted this regarding the upcoming closure of this library:

“The tipping point came last year, she said, when the library staff calculated that on an average day there were 104 people walking through doors of the physical library, there were 40 people checking out books, and there were 35,000 articles downloaded.”<sup>29</sup>

There are many options for downsizing branch libraries, as mentioned in this article. Besides closing, there is the option of shrinking the collection, combining service desks, and transforming into a bookless branch. Sharing best practices, exploring options, and gathering feedback from many different groups on campus are important for considering all possibilities and achieving a result that meets the needs of as many users as possible.

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