The Byrne Memorial Library at Saint Xavier University in Chicago had long exceeded its functional space for book storage and staff. The current facility, built in the early 1950s, was designed to hold 100,000 volumes, but by 2002, more than 171,000 volumes jammed the stacks. Books were piled on top of each other, held at the circulation desk waiting for room, and stored on windowsills and in stairwells. Books were so tightly jammed in the stacks that some were damaged when pulling them off the shelf, and about 12 percent of the books were stored on their fore edges, which can lead to the text block falling out of its binding. To make matters worse, faculty librarians shared offices, and technical services employees were jammed into small, inadequate spaces. The consequences of overcrowding were obvious. The stack conditions were a disservice to the Saint Xavier community, and stack maintenance was very difficult, leading to large numbers of missing and damaged items. The library often could not add new items without withdrawing existing books. The budget was affected because, in an effort to address the problem, the library spent about one-third of its journal funds to acquire microfiche copies of many of its hardcopy journals and then disposed of the latter. Lastly, the staff’s morale and work efficiency were directly affected.

Solutions to the Space Problem

Overcrowded libraries are nothing new. For forty years, the professional literature has contained articles on the causes of and solutions to packed stacks and staff wedged into insufficient offices. However, almost all of the articles concern very large libraries and repositories that own and operate the facilities and delivery services. Smaller academic libraries are proportionately just as crowded as their larger relations but often have fewer options available. Unlike the large institutions that can afford to operate expensive off-site storage programs, many smaller libraries simply make do with the little space they have. The Byrne Memorial Library, after examining a variety of options and implementing several of them, contracted with a third-party vendor for storage and delivery of selected materials.

Beginning in 2002, a new director came on board at the library. The director faced many challenges concerning staffing, budget, internal procedures, services, and space. The space problem needed immediate attention because of its scale and because it projected a poor image to the campus community. The director wanted to find immediate solutions that were realistic, financially feasible, and obtainable. The library began by examining five options to deal with its space problems.

Maximize Existing Space

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Maximize Existing Space

The library began an evaluation of its storage problem by looking at the obvious: was any room left in the stacks? The answer was a resounding no. In fact, getting books out of windowsills and stairwells was difficult due to the lack of room. With literally nowhere to put items, the library began an ad hoc overflow collection. If no space was available to reshelve new books or books returned from circulation, items not checked out for at least fifteen years were sent to a temporary overflow location. In addition, about eighty new shelves were added to a storage space previously used as a break room for student workers. Little-used reference sets were transferred to this location and packed three deep to maximize available space. No other space was available either in the library or anywhere else on campus. Space was so limited on campus that other offices even resorted to storage under staircases. The library did not have any locations suitable for compact storage shelving.

To address this problem, the library began a campaign to clean out its existing storage spaces, eliminate any items not absolutely necessary, and move as many supplies and filing cabinets out of work spaces as possible. Everyone
was pleasantly surprised how much space opened up in the work rooms.

Replace Print with Electronic Resources

The library was in the process of converting some print journal titles to electronic media. However, the overall savings of shelf space were not substantial. Fifty journals were quickly cancelled, but this saved only about eight shelves per year, or enough room to hold approximately two hundred volumes. A number of reference print sources were also cancelled in favor of the electronic versions, but the existing overcrowding in the reference collection was so extensive that little room was saved.

Use Public Storage Facilities

The library examined the options for using public storage facilities, and created a list of requirements, including:

- load-bearing floors able to support the weight of books;
- appropriate shelving;
- temperature and humidity control;
- facility security; and
- a system for the retrieval and return of items.

Our investigations revealed that no public storage facilities offered the amount of needed space. Security in these facilities usually consisted of a single lock, and there was rarely any temperature or humidity control. In addition, the university would have needed to buy shelving and the library staff would need to retrieve materials. Based on the results of our investigation, the library ruled out using a public storage facility due to costs.

Weed the Collection

Saint Xavier University never had a large-scale systematic weeding program. While such a program is feasible, the initial process is fraught with political problems. A successful weeding program requires very careful—and very time consuming—cultivation of the administration and faculty. For many years the library replaced some older editions of works with newer ones, especially in the reference collection. However, little or no space was gained because new books replaced the withdrawn items. The sheer size of the stack space problem meant that a successful weeding program needed to be on a scale so much larger than ever attempted that the resulting political fallout was not worth the effort. Selected areas of the collection were targeted. For example, the school of nursing faculty required that its students not use library materials more than five years old, yet 88 percent of the nursing books were more than five years old. The library worked with the nursing faculty to develop a list of items to weed but, due to shortages of technical services staff, could not begin the actual weeding for more than a year.

Select Off-Site Storage

The library was faced with the following scenario: there was no space anywhere on campus, a massive weeding program was unfeasible, no suitable public storage facility was available, and no option existed to share a storage facility with another library. The last option was to use a third-party storage vendor. The Byrne Memorial Library director had experience with records storage vendors in his previous positions in archives and records management and believed they might prove the answer to the problem. Businesses often retain records-storage vendors to house, retrieve, destroy, or copy files and documents, but libraries have not used this option. In their insightful article about off-site storage at the University of Akron, Hill et al. noted three kinds of off-site storage but did not discuss the use of a third-party vendor. Nor does Slote mention it in his seminal text on weeding.

The library received permission from the administration to proceed with preliminary discussions. Interviews with several vendors were very successful and focused on clarifying a number of points concerning costs, delivery schedules, and storage options. The three key questions for both the library and the vendors were: determining how the program would be paid for; determining how many items could be stored; and determining the methods of delivery.

The library quickly determined that no additional funds were available from campus administration. Any off-site storage program would require reallocating existing funds. Fortunately, they were available. Approximately one-third of the journals budget ($40,000) was spent on microform copies. The library agreed to cancel almost all microforms, keep the original print journals, and reallocate the funds to pay for storage and retrieval. The library calculated how many volumes could be stored and estimated the maximum number of deliveries that would not exceed the budget. As a result, the library settled on placing 20,000 volumes in storage, allowing for approximately 2,000 deliveries per year. It was estimated that the maximum number of deliveries would be lower in the first year because of the initial cost of boxes, moving, and barcoding the containers. Realistically, the library anticipated no more than several hundred deliveries per year and expected to reallocate the remaining funds. Assuming 30 volumes per shelf, about 666 shelves would be cleared. Preliminary discussions with vendors showed that they preferred books to be stored in 1.2-cubic-foot record center cartons. Experiments showed that boxes held an average of 15 books per box, requiring 1,333 boxes.

The library submitted a Request for Proposal to three vendors. Each vendor returned a proposal based on the following standards:
Over a three-year period, 1,333 boxes would be stored.
- Boxes would be 1.2 cubic foot record center cartons.
- An equal number of boxes would be delivered and picked up in same transaction.
- Vendor would be bonded.
- The university would be responsible for insuring the books while in storage.
- Materials would be picked up or delivered within one business day, Monday through Friday.
- There would be password-protected Internet access to the account and for inventory control and ordering pickups and deliveries.
- The vendor would have to provide information on temperature and humidity control.

Table 1 provides the financial estimates vendors provided. While each vendor could deliver and pick up materials, only vendor C allowed the library to pick up and drop off our own materials. Each vendor had different temperature and humidity controls. One vendor’s environment was fully controlled; another heated but did not cool its storage areas; and the third vendor provided no control, or full control at additional costs. Based on price and service comparisons, Saint Xavier University chose vendor C.

Once vendor C was selected, the library needed to develop its selection criteria. It was important to find selection criteria for both books and journals because the library successfully had lobbied to have its two main work areas completely remodeled. The remodeling projects were not originally intended to be linked to the storage program. However, the storage program and remodeling were addressed at the same time by the administration, which benefited the library because it received the green light for both the off-site storage program and the remodeling.

Due to the construction schedules, it was necessary to move journals and books in four phases. Phase one involved moving journal volumes to storage. At Byrne Memorial Library, current journal issues were kept in the current periodicals room, and older issues in stacks’ lower level. It was necessary to relocate journals to the stacks’ lower level because the current periodicals room was scheduled for remodeling as staff offices. Based on our previous calculations, we knew that a total of 20,000 volumes were to be moved. The staff examined several options for selection criteria and determined that about half of the volumes should be books, the other half journals. The library settled on placing in off-site storage 10,000 bound or boxed journal volumes not received in hard copy for ten years.

Once phase one was completed in late spring 2004, the library began to implement phase two, which will move 10,000 circulating monograph volumes that are fifteen years or older and have never been checked out during that time period, into storage. Following a review of the off-site storage program, scheduled for fall 2005, the library will implement phase three (moving additional journals) and phase four (moving additional books).

For political and administrative reasons, it was vital to obtain consensus from faculty and administration concerning the off-site storage program. The director held a number of meetings with faculty and administrators to discuss the need for off-site storage and obtained approvals from all levels of campus administration. Information about the program was also posted on the library Web site and delivered to academic deans and departmental liaisons. There was no serious opposition to the concept of off-site storage from faculty because they knew the alternative was weeding. The director tried to anticipate the expected questions and was particularly sympathetic to the loss of browsing by patrons, but noted there were no real alternatives. It was also politically useful to have the simple, easy-to-understand criteria (journal volumes not received in hard copy for ten years and books at least fifteen years or older and never checked out) for selection to off-site storage. Any complex formula, or preference for one subject area over another, would have opened an endless series of debates. It was particularly helpful to always ask for alternatives to storage because the end result was always the same, and potential opponents of the program recognized no other options were feasible.

The library experimented with a variety of procedures to undertake the off-site storage project. The staff generated a spreadsheet of journal titles, volumes, and years from its Voyager catalog system that met the storage criteria. It settled on an effective routine that required one or two persons to locate and box the materials, and one or two persons to update the spreadsheets and bibliographic records. The library shipped about eighty boxes to temporary storage per week. The procedure involved four general steps:

**Locate and Box the Volumes**

The actual boxing of materials was the easy part of the project. Using the printed spreadsheet, staff located the

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Boxes</th>
<th>Barcoding</th>
<th>Pickup of boxes</th>
<th>Annual storage</th>
<th>Retrieval and delivery (first item)</th>
<th>Delivery (additional items)</th>
<th>Cancellation fee</th>
<th>Return charge after cancellation</th>
<th>No. deliveries first year</th>
<th>No. deliveries following years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor A</td>
<td>$2,000</td>
<td>$2,666</td>
<td>$1,533</td>
<td>$14,396</td>
<td>$33.00</td>
<td>$1.50</td>
<td>$7,332</td>
<td>$1,533</td>
<td>376</td>
<td>564</td>
</tr>
<tr>
<td>Vendor B</td>
<td>$2,332</td>
<td>$999</td>
<td>$1,347</td>
<td>$4,798</td>
<td>$18.50</td>
<td>$1</td>
<td>$2,332</td>
<td>$1,347</td>
<td>1,272</td>
<td>1,524</td>
</tr>
<tr>
<td>Vendor C</td>
<td>$2,000</td>
<td>$933</td>
<td>$1,670</td>
<td>$3,199</td>
<td>$12.50</td>
<td>$2.50</td>
<td>$0</td>
<td>$1,670</td>
<td>2,015</td>
<td>2,384</td>
</tr>
</tbody>
</table>
selected items, boxed them, and added a sequential box number to the list. To our surprise, few journals were missing. More notable were the several hundred volumes located that had never been added to the catalog. The staff updated the spreadsheet with any corrections and added the box number and vendor container number.

Store the Boxes until the Vendor Makes a Pickup
The library was able to store about 110 boxes at one time. When storage capacity was almost reached, the vendor was called and they picked up the materials within one business day.

Update the Spreadsheet
For insurance purposes, the university wanted an accurate print and computerized listing of all volumes that went into off-site storage. The vendor maintained a box listing, but only the library would keep a detailed volume and box list, so the spreadsheet was updated as soon as possible. As boxes went to off-site storage, the vendor supplied the library with its own box numbers (necessary for their inventory and location control), and the staff added these numbers to the spreadsheet. When materials were ordered from off-site storage, the staff used both box numbers.

Update the Bibliographic Record
The most time-consuming and complex part of the project was updating Voyager records to indicate what titles, volumes, and years were in each specific box. In the process of updating the holding records the staff found myriad problems, many of which involved long-standing errors in the catalog. In addition, as technical services staff added a new holding record, they found that the previous holding record unnecessarily contained item records. In order to delete the existing holding record, all items attached to it had to be removed, one at a time. The staff then added the volume, date, and box number information to the new holding record. The data input and cleanup were an enormous amount of tedious but essential work.

The library also established procedures for retrieving and returning materials to and from off-site storage. The director wanted to establish tight control over deliveries to ensure that the library did not incur unnecessary expenses and that patrons received the correct items. The administrative procedures for delivery and pickup included:

- Limiting the number of persons authorized to contact the vendor for pickup or delivery of materials or ordering new cartons.
- Declaring that items in off-site storage were not available for inter-library loan.
- Designating the circulation desk as the holding location for boxes. For security purposes, the vendor ships entire boxes, not individual volumes. In most cases, the staff found it more effective to just leave the boxes as they were until the patron came in to use the materials. All items removed from the boxes have return tags attached to help ensure their proper handling. The library found it was not necessary to add a temporary location for returned materials in the bibliographic record.
- Not returning boxes to the vendor unless a delivery is requested at the same time.

Effects of Off-Site Storage
The selected vendor performed professionally and efficiently, beyond the expected levels of satisfaction. The correct boxes were picked up and delivered on time, and the vendor’s staff resolved any problems quickly and efficiently. The library found immediate resolution to its space crisis. As the stacks opened up, further plans were undertaken to move journals from the current periodicals room to the stacks lower level. Enough room was saved that additional cleanup was possible. Patrons, including faculty, reported no problems with the off-site storage program. Indeed, many were grateful for the “house cleaning” and general improvement of appearance of the journal collection and stacks. No patrons complained about the one-business day delivery, and many noted that other libraries with remote storage often require a week or more for delivery. The actual number of deliveries has been low, as expected. Off-site storage cost one-tenth that of buying microfiche and microfilm, so the library was able to reallocate the remaining funds to developing the book and electronic resource collections.

In summary, the third-party off-site storage program at Byrne Memorial Library resolved many longstanding space problems efficiently, in a cost-effective and novel manner, and has not impaired any research services to patrons.
third-party storage and delivery vendor may be a practical and effective alternative.

References and Notes

1. In fall 2003, Saint Xavier University had a full-time student headcount of 5,581 and a full-time employee count of 4,189.
7. The container contains a box number generated by the library and a separate number and barcode supplied by the vendor. When ordering, both numbers are used.
8. Item records in Voyager are designed for materials with barcodes. At Byrne Memorial Library, barcodes had never been added to journals. The author wishes to thank Anita Morgan, technical services librarian, for explaining the cataloging process succinctly and clearly.

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### LAMA Endowment Contributors

**Diamond ($2500+)**
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- Richard Waters

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- Charles Kratz
- Nancy R. McAdams
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