# Loss of Space and Relocation of Library Collections

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## Abstract

Space is at a premium on many college and university campuses. Libraries are often asked to vacate space for the expansion or construction of offices, labs, or learning commons. When this results in the loss of shelving space, libraries face the dilemma of what to do with those displaced materials. This paper examines the loss of approximately 7,000 linear feet of shelving space in an academic law library and the successful in-library relocation project necessitated by that loss. Planning is key to any project, especially one involving approximately 80,000 volumes. The author discusses the planning that went into the project and the outcome. Planning included measuring the size of the collections, mapping the relocation of materials, and identifying challenges. Readers will learn about a simple yet fairly accurate method for measuring library collections. The reasoning behind mapping the relocation of materials to specific areas is discussed. Challenges, such as allocating growth space, safety concerns, and lack of elevator access, are also covered.

Keywords: Academic Libraries; Law Libraries; Library Buildings; Library Planning; Library Space Utilization; Stack Management

## Introduction

The Louisiana State University (LSU) Law Library supports the research and educational needs of the LSU Law Center, Louisiana legal community, and the general public. It holds a collection of more than 444,000 volumes covering Anglo-American law and foreign, international, and comparative law. The Library is a selective depository for U.S. and Louisiana government documents.

The Library occupies space in the original law school building and adjacent annex. The annex space houses library staff offices, a reading room, study spaces, and library materials on four floors. The original building space houses five closed stack areas, herein referred to as stack levels. Those stack levels house restricted and superseded library materials. Although the annex and original building are connected, only the first floor and stack level two are on the same level. Also, while the annex area has direct elevator access, the original building does not.

Most library materials are classified using the Library of Congress Classification System (LCCS) and the Superintendent of Documents (SuDocs) Classification Scheme. Other materials, such as digests, reporters, and statutes, are unclassified. LCCS, SuDocs, and unclassified materials are housed together in sections on the floors and stack levels.

In the spring of 2012, the Library learned that it would have approximately one year to vacate approximately 6,000 square feet of space on the fourth floor to accommodate a new Energy Law Center. In addition to study carrels and group study rooms, the space included 39 double-sided shelving ranges representing approximately 7,000 linear feet (see Figure 1).

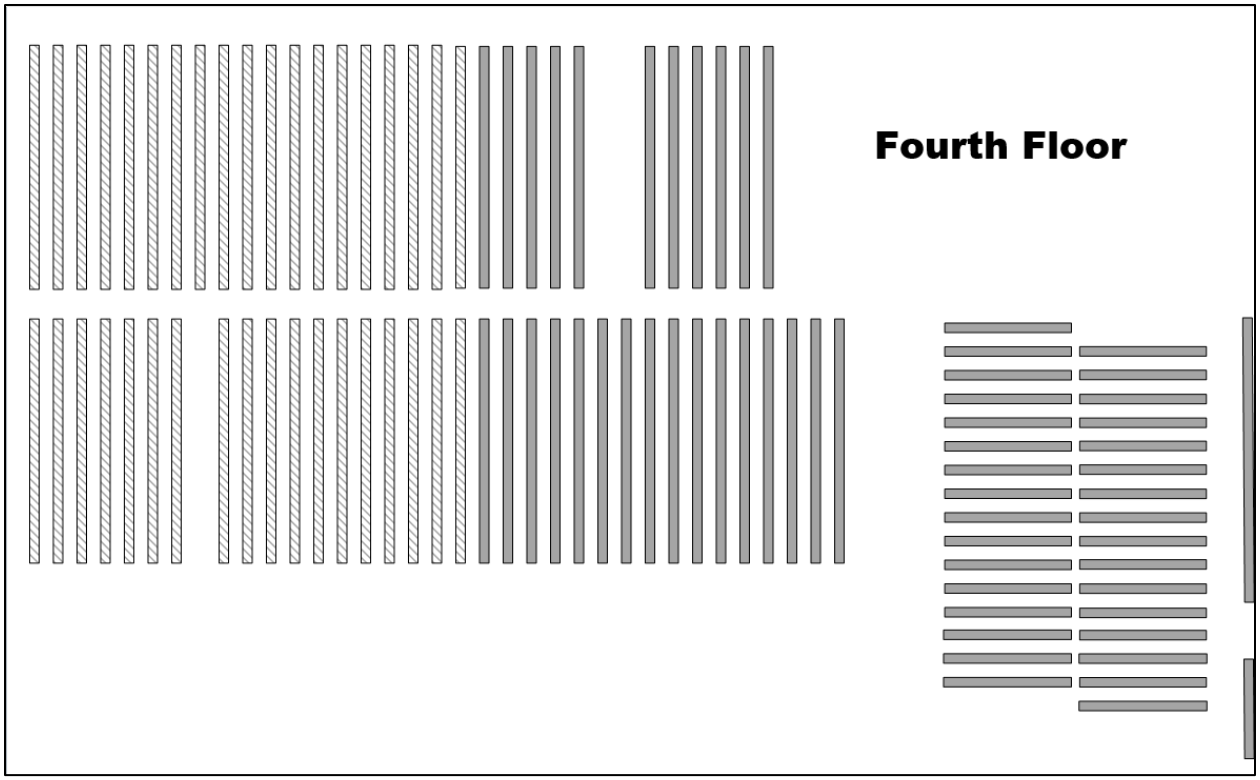


*Figure 1.* Layout of fourth floor of the original building. Lost shelving space is indicated by diagonal lines.

**Planning**

In 2005, Atkins's and Teper's study on temporary relocations of academic library collections showed that 29% of respondents experienced at least one major problem or setback. They noted insufficient project planning as the most common problem. Although the main emphasis of the study was temporary relocations, the importance of planning certainly extends to permanent relocations.

Within weeks of learning about the loss of space, the Library began planning for the relocation of the materials from the fourth floor. An informal project team was assembled, comprised of the Library Director, the Assistant Director for Technical Services, and two full-time library paraprofessionals from Technical Services. The

Library Director provided oversight and made final decisions. Responsibility for planning the relocation was assigned to the Assistant Director. The two paraprofessionals were selected because of their knowledge of the physical collection. One of the paraprofessionals was responsible for measuring the collections and the other one, who was responsible for stack maintenance, served as the Library's liaison to the movers. The planning process, which lasted several months, included measuring the size of the collections, mapping the relocations, and identifying challenges.

**Measuring the Size of the Collections**

The Library lacked a single area of available space that could accommodate the 7,000 linear feet of materials from the fourth floor. The majority of available space was spread out among stack levels one, two, and four. A coordinated series of relocations involving those stack levels and the second and fourth floors was required in order to absorb the materials. The success of those relocations relied on a measurement of the size (i.e., length) of the collections on the second and fourth floors.

To determine the best method of measurement, the project team consulted three sources pertaining to moving or relocating library collections, *Library Relocations and Collection Shifts* (Tucker, 1999), *Moving Library Collections: A Management Handbook* (Habich, 2010), and *Moving Your Library: Getting the Collection from Here to There* (Fortriede, 2010). The authors discuss estimated and actual measurements, each with their advantages and disadvantages. Although estimates can be done rather quickly and with fewer people, they are an approximation that could lead to unintended consequences. Estimation methods often use a random sample of shelves to calculate a fill ratio or average number of volumes per shelf and then the length of the collection.

Due to greatly varied fill ratios across the Library's collection, using a random sample of shelves could potentially lead to a lack of available shelving as the project proceeded.

Tucker (1999) recommends taking a physical measurement if at all possible and Habich (2010) recommends it "when the collection is large, the arrangement complex, the space and time tight, or the existing information not reliable." Physical measurement provides a greater degree of accuracy but requires significant time and staff. The project team preferred a physical measurement rather than an estimate and chose a simplified method that would not require the time and labor intensive exact measurement of over 10,000 shelves. The simplified method employs two people and a string or tape marked at intervals to measure either used or growth space on shelves. To save time, growth space would be measured because there was less of it.

Using the two-person method, one measures and the other records. The paraprofessional responsible for measuring the collection and a student worker served in those roles, alternating between measuring and recording. A 10-foot tape measure was made from a nylon tie-down strap and marked 1-foot increments. The measurer placed the zero end of the tape in the left hand at the end of the shelved books and slid the tape through the fingers of the right hand to the end of the empty space. The left hand was then moved to where the right hand ended with that becoming the starting point for the next area to be measured. The process was repeated until the end of the tape was reached. Fortriede (2010) describes this method in great detail with illustrations and photographs.

Each time the end of the tape was reached for a range, the measurer called out and the recorder made a tick mark on a data sheet. Any measurement less than 10 feet was recorded separately as extra feet. The information from the data sheets was then entered

into spreadsheets. The data sheets included the range number, beginning call number, ending call number, number of sections, total number of shelves, number of 10-foot strings, and number of extra feet less than ten. These counts and measurements were used to calculate total footage of allocated shelf space, total footage of used space, total footage of growth space, and percentage of used and growth space (see Figure 2). Fortriede (2010) provides data sheets in his book and in online format.

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Range | Beginning call # | Ending call # | Sections | Shelves | # of 10 ft. strings | # of extra feet | Total feet shelf space | Total feet used space | % used space | Total feet growth space | % growth space |
| 2 | 33A | AC1 .G72 | BM197 .J33 | 4 | 28 | 1 | 6.25 | 82.83 | 66.58 | 80.38% | 16.25 | 19.62% |
| 3 | 33B | BM197 .Z4613 | D141 .M33 | 4 | 28 | 1 | 7.25 | 82.83 | 65.58 | 79.18% | 17.25 | 20.82% |
| 4 | 34A | D148 .D66 | DC404 .R5413 | 4 | 28 | 1 | 2.25 | 82.83 | 70.58 | 85.21% | 12.25 | 14.79% |
| 5 | 34B | DC407 .D39 A33 | DS559.8 .M44 K68 | 4 | 28 | 1 | 1.00 | 82.83 | 71.83 | 86.72% | 11.00 | 13.28% |
| 6 | 35A | DS559.912 .N39 | E185.8 .N6494 | 4 | 28 | 0 | 9.00 | 82.83 | 73.83 | 89.13% | 9.00 | 10.87% |
| 7 | 35B | E185.8 .S74 | E748 .H93 A3 | 4 | 28 | 0 | 5.75 | 82.83 | 77.08 | 93.06% | 5.75 | 6.94% |

*Figure 2.* Spreadsheet with calculations of total footage of allocated, used, and growth space.

Total footage of allocated shelf space was calculated by multiplying the total number of shelves by the length of a shelf in inches and dividing by 12. The length of shelves in the annex and original building were 36 inches and 35 inches, respectively. An allowance of one half inch was subtracted from the 36-inch shelf and one quarter inch was subtracted from the 35-inch shelf to allow for volumes to be pulled from full shelves. The allowance for the 36-inch shelf was somewhat greater to enable volumes to be pulled from patron-accessible shelving. The shelf lengths used in calculations were 35.5 inches and 34.75 inches. Total footage of growth space was calculated by multiplying the number of 10-foot strings by 10 and adding the number of extra feet less than ten. Total footage of used space, which represented the size of existing collections, was calculated by subtracting the total footage of growth space from the total footage of allocated space.

Available shelving was also counted in order to determine total footage of available space. The number of available shelves was multiplied by the appropriate shelf length for the shelving area.

**Mapping the Relocations**

With the collections measured and available space known, relocation of materials could be mapped. The fourth floor housed the LCCS collections of A-HX, KF-KFZ, and L-ZA. It also housed U.S. government documents, including the *Serial Set*, and an unclassified collection of digests and reporters. The soon-to-be displaced materials were in the KF-KFZ and L-ZA collections. To maintain an organized shelving arrangement, the Library decided to keep the materials on the fourth floor. This meant that the A-HX collection, government documents, and digests and reporters would have to be relocated. Government documents were moved to stack level two and the *Serial Set* was relocated to shelving along one of the fourth floor walls. This left the A-HX collection and digests and reporters needing space.

Extensive weeding, which would have significantly reduced the amount of volumes being relocated, was not done due to time constraints. The Library weeded a few hundred volumes from tight areas of the collection. Although space was available in some of the stack levels, the restricted nature of that space made it inappropriate for collections, such as A-HX, that should be openly accessible to patrons. The first floor was not available because it serves as the reading room and the third floor had little available space. The second floor, which housed the general legal periodical collection, became the only option. Titles on current subscription were moved to patron-accessible shelving along the third floor wall. The majority of titles no longer on subscription, but

available online, were relocated to stack levels one and four. Stack level one had collections that were relocated to an adjoining room and to stack level three. The second floor would house the A-HX collection, Louisiana Collection (relocated from another section of the second floor), and digests and reporters.

Overall, the project involved twelve phases of relocations affecting over 18,000 linear feet of materials (see Table 1) and representing approximately 80,000 volumes. Spreadsheets were used to map the phases for use by the movers in planning (see Figure 3). Following the relocations, the 39 double-sided ranges needed to be dismantled and removed. This project utilized the services of professional movers who were already under contract with the University.

Table 1.

*Relocation Phases*

| Collection | Linear feet | Old location | New location |
|---|---|---|---|
| Current legal periodicals | 251.46 | 2nd floor | 3rd Floor Wall |
| Government Documents | 2400.00 | 4th floor | Stack level 2 |
| Serial Set | 325.42 | 4th floor | 4th Floor Wall |
| Bound journals (K1 – K4) | 915.08 | 2nd floor | Stack level 4 |
| Early American Collection | 463.33 | Stack level 1 | Basement room S62 |
| Bound journals (K5 – K29) | 3147.77 | 2nd floor | Stack level 1 (basement) |
| American Digest | 103.54 | 4th floor | Stack level 3 |
| A – HX | 1789.38 | 4th floor | 2nd floor (left side) |
| Louisiana Collection | 633.79 | 2nd floor (ranges 5 – 9) | 2nd floor (left after A-HX) |
| Digests and Reporters | 1964.21 | 4th floor | 2nd floor (right side) |

| | | | |
|---|---|---|---|
| KF – ZA | 6447.96 | 4th floor (ranges 47 – 95) | 4th floor (ranges 1 – 52) |
| American Law Reports | 182.42 | 1st floor | 2nd floor |

*Note*. Linear feet measurements are approximate.

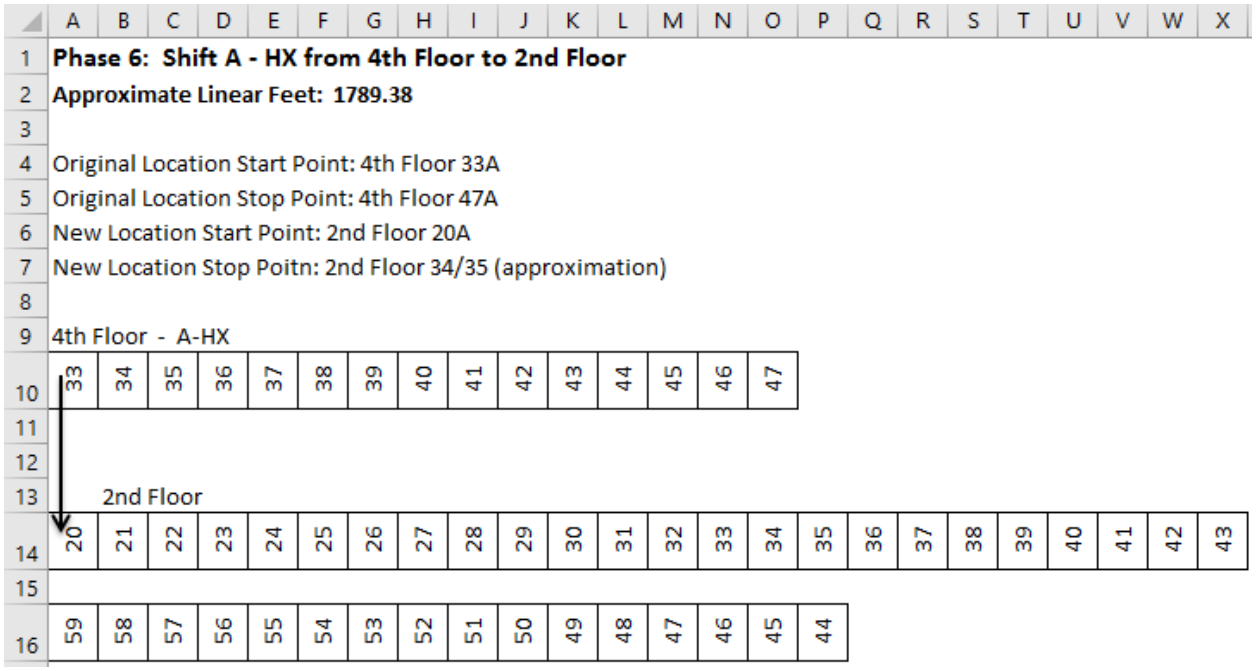


*Figure 3.* Spreadsheet showing map of phase 6 of the relocation project.

**Challenges**

Growth space on the second and fourth floors needed to be addressed. Growth patterns for books and periodicals are different. Book collections can grow forward, backward, or in the middle unlike periodicals that usually grow forward (Tucker, 1999). Few current periodicals would be housed on the second and fourth floors. Continuing legal resources on those floors would grow forward, requiring more space. Those titles were identified by the Library's liaison for communication to the movers. General growth

space on the second and fourth floors was allocated based on projected growth of books. The digests had been cancelled and required no room for expansion. Five years' worth of growth space was allocated for reporters.

Ideally, the top and bottom shelves would be left empty for growth. This was not an option due to lack of space. There are various methods for determining growth space. Espinosa (2015) considers historic growth, projected growth, and available growth. Fortriede (2010) considers categories of growth from slowest (1) to fastest (5). The Library took a fairly simple approach of allocating one third of each shelf equal to 12 inches for growth space on the second and fourth floors to accommodate new materials and returned volumes. Growth space was not allocated for the stack levels because space was only required for materials that were checked out to patrons. Space for checked out materials was indicated to the movers by flags placed in the preceding volumes.

There was some apprehension about using the movers under contract with the University. Although they were certified library movers, they did not specialize in library projects. The project team was most concerned about materials being moved in the correct sequence and shelved in correct call number order. These concerns were addressed with the managers of the moving company who assured the project team that the work would be done to the Library's satisfaction.

Safety was a concern because classes were in session during the project. The second and fourth floors are heavily used by students during regular semesters. Some areas of the Library were closed to patrons as required by the movers. While the movers were dismantling and removing the shelving, the fourth floor was closed. These closures were announced to faculty, staff, and students via email and signage.

The different levels between the original building and the annex caused some logistical challenges (see Figure 4). The lack of direct elevator access affected relocations to stack levels one and three. In the original building, the movers constructed a ramp from the ground floor to stack level one in the basement (see Figure 5).

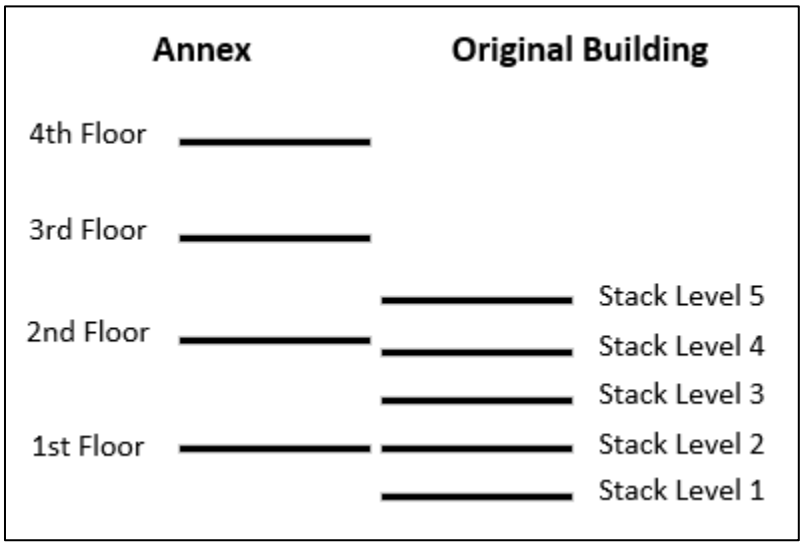


*Figure 4.* Representation of different levels between original building and annex.

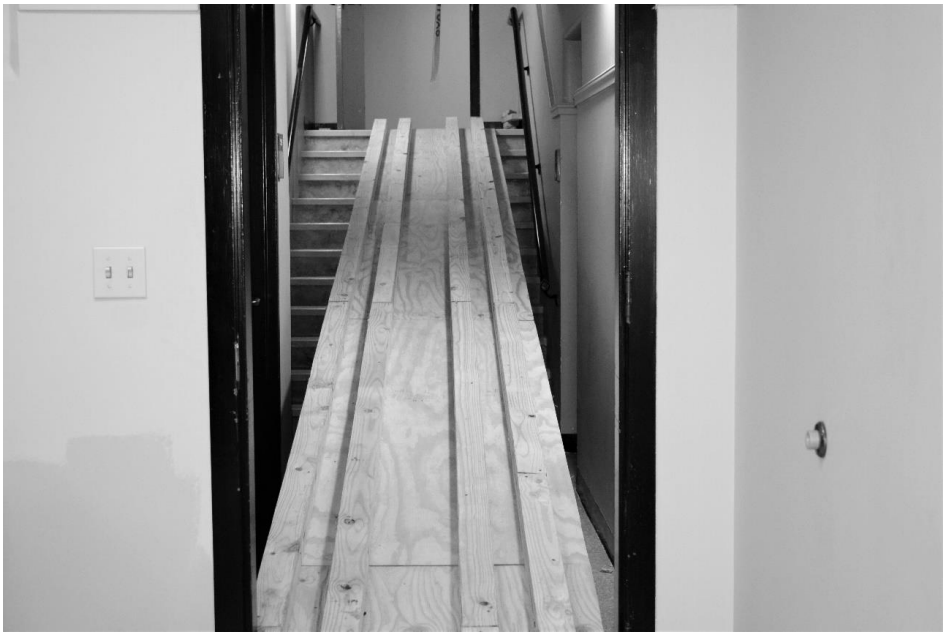

*Figure 5*. Ramp constructed over stairs leading from ground level of original building to stack level one (basement level).

A breezeway on the second floor connects the original building and the annex (see Figure 6). Relocating periodicals to stack level one required a trip from the second floor, down the breezeway, down the elevator, and then down the ramp. Materials moved to stack level three required a trip though the Library, down the breezeway, and then through a classroom. This relocation had to be scheduled around classes being held in that room.

*Figure 6.* Breezeway connecting annex to original building.

Periodicals relocated to stack level four from the second floor required a trip through a transitional entrance that was just over six feet high and then down a very short ramp with little room to maneuver full book trucks (see Figure 7). The movers had to carefully navigate all of these paths in order to avoid overturning book trucks and to prevent any injuries.

*Figure 7*. Transitional entrance to stack level four from second floor. Doorway to stack level is on the left. Book truck pictured on the right is smaller than those used during the relocation project.

**Outcome**

No matter how well a library plans a major shift of collections, there is a chance that something will go wrong. The movers began work during the second week of January 2013. The construction of the ramp to stack level one was delayed for a few days because it could not be mounted to the stairwell as first planned. Instead, the moving company had to design and construct a self-supporting ramp. Due to heavy rains, stack level one flooded during the early part of the project. The movers spent a day removing wet boxes of papers and books stored there, although it was outside the scope of the project. These were minor setbacks because some phases could be completed out of

order.

Any concerns about the movers were dismissed as soon as work began. A supervisor was on site each day during the project to ensure the work was done according to plan and with attention to safety. The movers were courteous and conscientious about doing a good job. They even completed some tasks that were not part of the project, such as shifting a collection on the second floor, installing shelving in the Archives Room, and replacing fluorescent light bulbs. The Library was very pleased with their work.

The movers used book trucks that were constructed for the project. One side was green and the other side was red. This was a visual cue indicating the start point. The movers worked in teams of two. One team member removed books from the shelves and handed them to the other team member for placement on the book truck. As the trucks were filled, they were taken to the stack level or floor where they were shelved by another team. The book trucks were kept in sequence. One team member removed the books from the book truck and handed them to the other team member for placement on the shelves.

The Library's liaison worked closely with the movers. This working relationship helped to keep them on task, point out areas needing extra space, and to help prevent errors. The relocations were done with minor errors. The most common error was books shelved upside down. The relocations were completed by the end of February. The final phase of dismantling and removing shelving was completed by the middle of March. The result was a successful relocation project that was completed on time. Figures 8 through 10 show stack levels one, two, and four before and after the relocations.

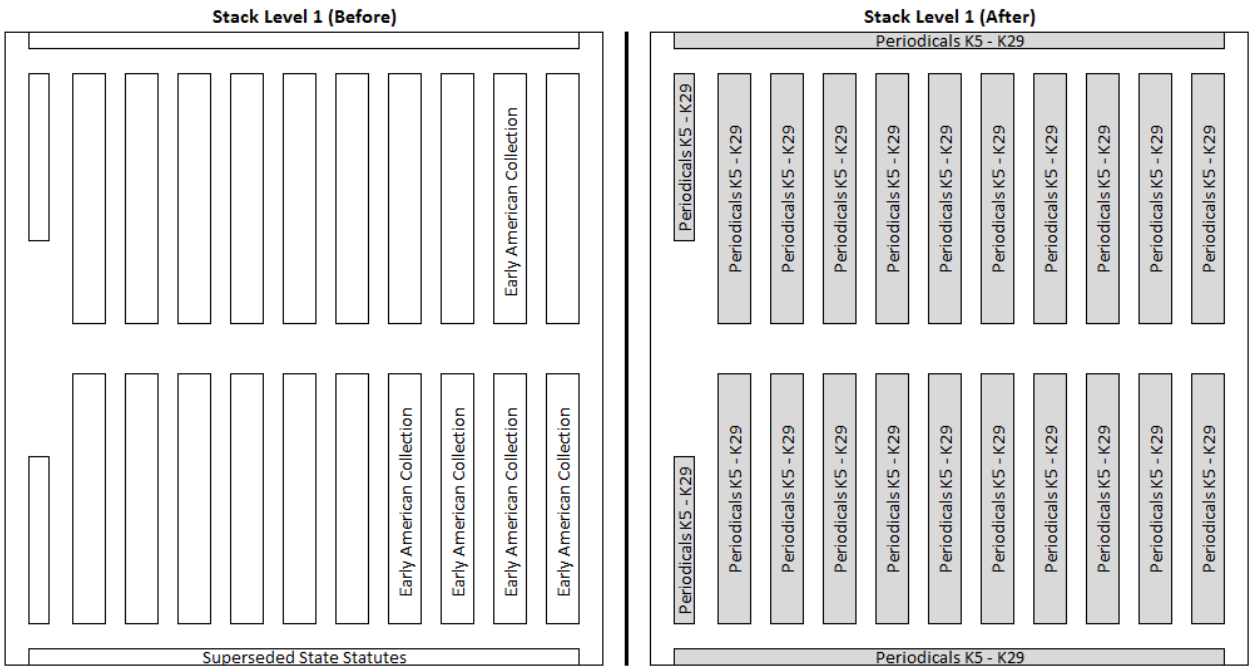


*Figure 8.* Stack level one before and after the relocation. Ranges shaded in gray indicate the new location of materials.

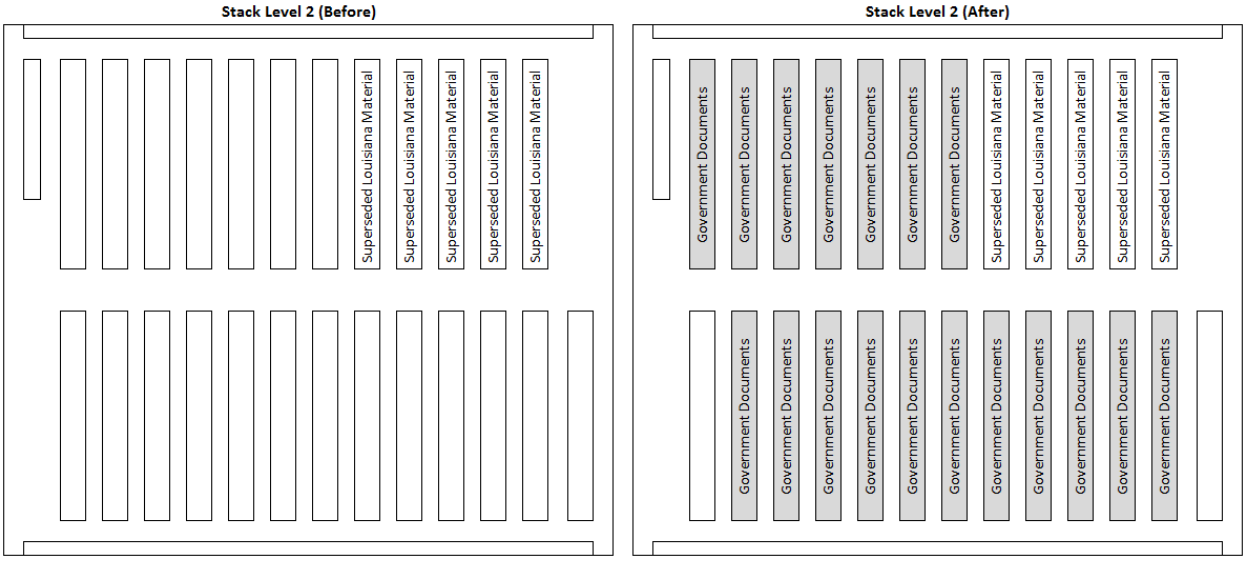


*Figure 9.* Stack level two before and after the relocation. Ranges shaded in gray indicate the new location of materials.

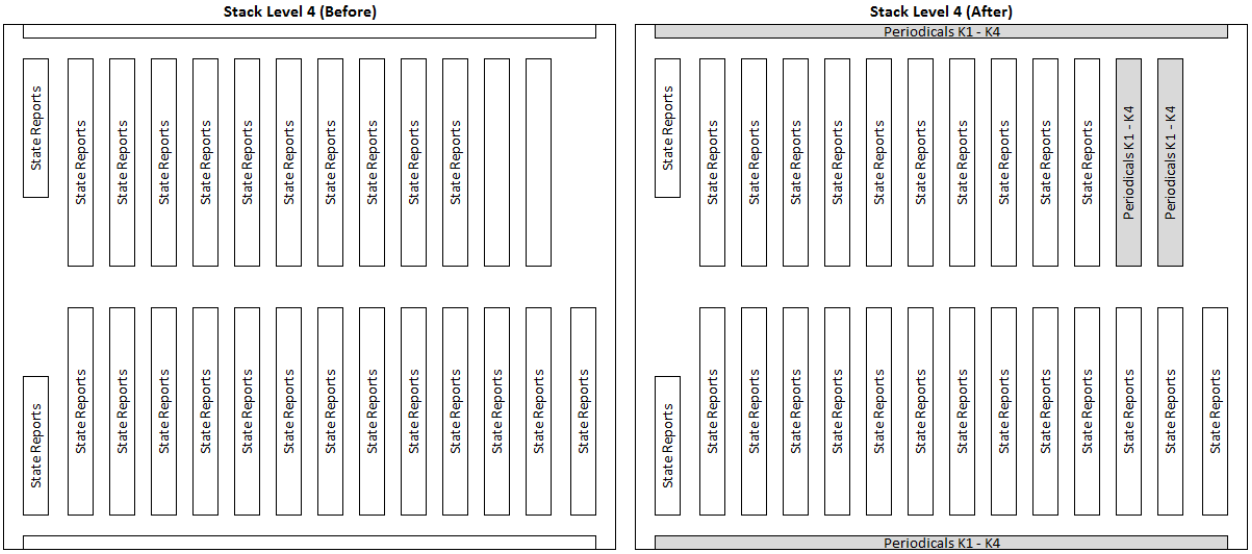


*Figure 10*. Stack level four before and after the relocation. Ranges shaded in gray indicate the new location of materials.

**Conclusion**

Thorough planning was key to the success of this project. Measuring instead of estimating the size of the collections reduced the chance of running out of space. Carefully considering the appropriate place for materials ensured patrons would have open access to materials. Mapping the relocations on paper made it easier for the movers to visualize the phases of the project. Identifying the logistical challenges and communicating them to the movers was extremely important. Eliminating that step could have caused more setbacks and possible safety issues.

This project could not have been done by library staff alone. Professional movers were better equipped and experienced. Constant communication between the Library's liaison and the movers kept the project on track and setbacks to a minimum. Having an on-site supervisor made it easier to communicate and handle changes to the schedule.

If faced with another loss of shelving space, the Library would follow the same

planning process. As a result of this project, the Library has learned that it needs to measure the collections on a regular basis. When space was not an issue, weeding was rarely done. The Library no longer has the luxury of extra space. Weeding must be considered as a tool for successfully utilizing space. By incorporating the measuring and weeding of collections, the library can successfully manage any future relocation project.

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