



BROWN UNIVERSITY LIBRARY

II. Library Storage Program & Space Analysis

A. Storage Need Analysis

Critical to the realization of the long-range programmatic and spatial goals presented in section I is the successful implementation of a library collection storage and retrieval program. In parallel with the library overview, the feasibility of an off-campus storage facility was evaluated. Various collection storage models were reviewed, site visits were made to several different facilities, and existing library collections were analyzed to determine:

- What types of collections could conceivably be accessed from an off-campus facility?
- The amount of collection that would need to be moved off-site to achieve goals set forth in the library overview.
- Growth projections for current library collections and their effect on off-site storage capacities.
- The types of reader amenities and staff processing areas necessary to operate an off-campus facility.
- Necessary staffing for inventory control, retrieval/delivery and general operations of the Library's portion of the Annex.

The library planning committee visited 12 sites including the Yale University Library Shelving Facility and the Harvard Depository, which utilize a high density rack and tray storage system, and the Washington University West Campus Library Storage Facility that utilizes a mobile high density shelving system (compact shelving). While the compact shelving system is easier to access and allows the books to be stored in call-number order for better browsability, the shelving is more expensive and less efficient than the system used in the Yale and Harvard Facilities. In order to maximize the capacity of the storage facility in terms of volumes stored per square foot and to lower the cost of shelving, the Yale and Harvard high density rack and tray system was selected as a model for the proposed Brown University facility, to be called the Library Collections Annex.

Planning Assumptions

SBRA Architects and Dill & Company Inc., assisted the Library Planning Committee in defining the program components necessary for the proposed Library Annex based on the following planning parameters:

Site Requirements:

- Site location within 15 minutes from campus.
- Site with expansion capability.
- Secure site.
- Ample parking for staff and visitors.
- Archival quality, preservation environment.

Program Requirements:

- Provide high bay storage for the following collections. The amount of area required will depend on the specific storage system design, particularly the height of the collection storage racks, but will be in the range of 10-15,000 sf for 1.5 million volumes.
 - Approximately 900,000 volumes currently held in Brown Libraries.
 - Approximately 62,000 volumes, (250,000 volume equivalents) of Brown University collections currently stored at the Harvard Depository Library.
 - Approximately 37,000 volumes of projected collection growth per year, establishing a “zero growth” (one in, one out) policy for Brown on-campus libraries once the initial transfers to the Annex are complete.

- Additional capacity for Library archival materials, newspapers, and ephemera currently housed in the John Hay Library and in the Harvard Depository Library. Relocation of materials from the John Hay Library is particularly critical to address the current extreme overcrowding of collections and the attendant difficulties in maintaining standards of care and conservation appropriate to rare materials.
- Provide low bay storage for framed art currently held within the John Hay Special Collections Library and the Ann Mary Brown Memorial.
- Provide approximately 6,500 SF of processing and support facilities, including a dedicated loading dock, shipping and receiving area for book retrieval and delivery. The loading dock should be enclosed to protect material during transfer.
- Provide 500 SF for public areas, including a reception area and a library reading and conference room for on-site use of the collections.
- Provide 400 SF for 1 staff office and a staff lounge/kitchen.

In addition to storage and service requirements for the Library Annex, general university needs were also identified for accommodation within the same facility as outlined below:

- 40,000 SF of low bay storage for general university use
- 13,000 SF of printing press production spaces for Brown University Graphic Services.

Environmental Standards

Critical to the successful operation of the library functions included in the Annex will be the implementation of interior environmental standards for long-term preservation of print collections. The implementation of these standards is necessary to ensure adequate protection and to extend the longevity of important collection materials. The historical collections to be stored in the annex contain many valuable items that, if allowed to deteriorate, could be replaced only at a very high cost. In the case of the John Hay Library collections, many of the items to be stored are, in fact, irreplaceable. Analyses of the progressive deterioration of printed materials indicate that damage can be significantly slowed or arrested in storage environments with low temperature and humidity levels that remain stable throughout the year. This is particularly true for acid-based paper, which is still used for many printed materials.

Therefore, based on nationally recognized preservation standards developed in response to these analyses, it is recommended that temperature and humidity levels within the high-bay storage area of the library collection annex be maintained year round with minimum set points of 68° F and 50% RH. Many preservation facilities maintain even more stringent conditions with temperature and humidity set points of 50° F and 30% RH year round, and the cost estimates included in this report are based on a mechanical system capable of meeting this more stringent criteria. However, in further design work, the viability of relaxing HVAC criteria to the minimum set points (68° F/50% RH) could be evaluated as a means to reduce capital costs and operating costs.

Additional specialized environmental criteria necessary to provide a preservation quality collection storage environment include HVAC filtration of gaseous and particulate contaminants, UV filtration for all light sources, and an automatic fire suppression system. The general university functions share similar storage, shipping and service needs with the library collections annex, but will not require the same stringent environmental conditions. Because of this, it is recommended that the library functions be physically separated from general university functions to be located in the Annex, and that separate HVAC systems be maintained for the two areas.

B. Implementation Strategy

Collection Accessing

Dill and Company, Inc., evaluated the accessioning of the collection from the existing Brown University Libraries to the Annex. The facility is estimated to hold approximately 1.5 million volume equivalents. The following chart outlines the “push” project, which will take 5 years to accommodate overcrowding, future programs, and ADA upgrades at the existing libraries. This scenario fills the annex by mid 2011. The actual pace at which certain portions of the collection will need to be transferred to the Annex is dependent on the University’s schedule for renovation of campus libraries, as well as the approval of additional library staff for processing and transfer.

**LIBRARY BOOK DEPOSITORY
BROWN UNIVERSITIES
STORAGE REQUIREMENTS (REVISED 6-24-02)**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
COLLECTIONS											
HAY											
BOOKS		40,800									
SCIENCE LIBRARY		40,000	60,000	122,000	96,000						
BOOKS											
ROCKEFELLER		206,000	263,000	81,000	37,000						
BOOKS											
ORWIG		16,400									
BOOKS		37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000
ANNUAL GROWTH IN VOLUMES											
VOLUMES ACCESSIONED OTHER THAN HARVARD		340,200	360,000	240,000	170,000	37,000	37,000	37,000	37,000	37,000	37,000
FROM HARVARD DEPOSITORY (BASED ON TRAY QTY)	1,297	246,430									
TOTAL VOLUME EQUIVALENTS IN STORAGE (1,520,000 Capacity)	586,630	946,630	1,186,630	1,356,630	1,393,630	1,467,630	1,430,630	1,504,630	1,541,630	1,578,630	1,578,630
PERCENT OCCUPIED	16.03%	38.16%	61.59%	77.20%	88.26%	90.67%	93.07%	95.48%	97.89%	100.29%	102.70%
POTENTIAL STAFFING REQUIREMENTS											
TOTAL PERSONNEL		4.56	4.92	4.10	3.64	2.09	2.11	2.13	2.16	2.18	2.20

Mid 2011 = Full Capacity

Prepared by Dill & Co. Inc.

Project Schedule

The implementation strategy for this project must integrate the renovation of the Annex facilities with realistic operational goals for accessioning of its collection materials and the subsequent renovations to Rockefeller and the Sciences Library.

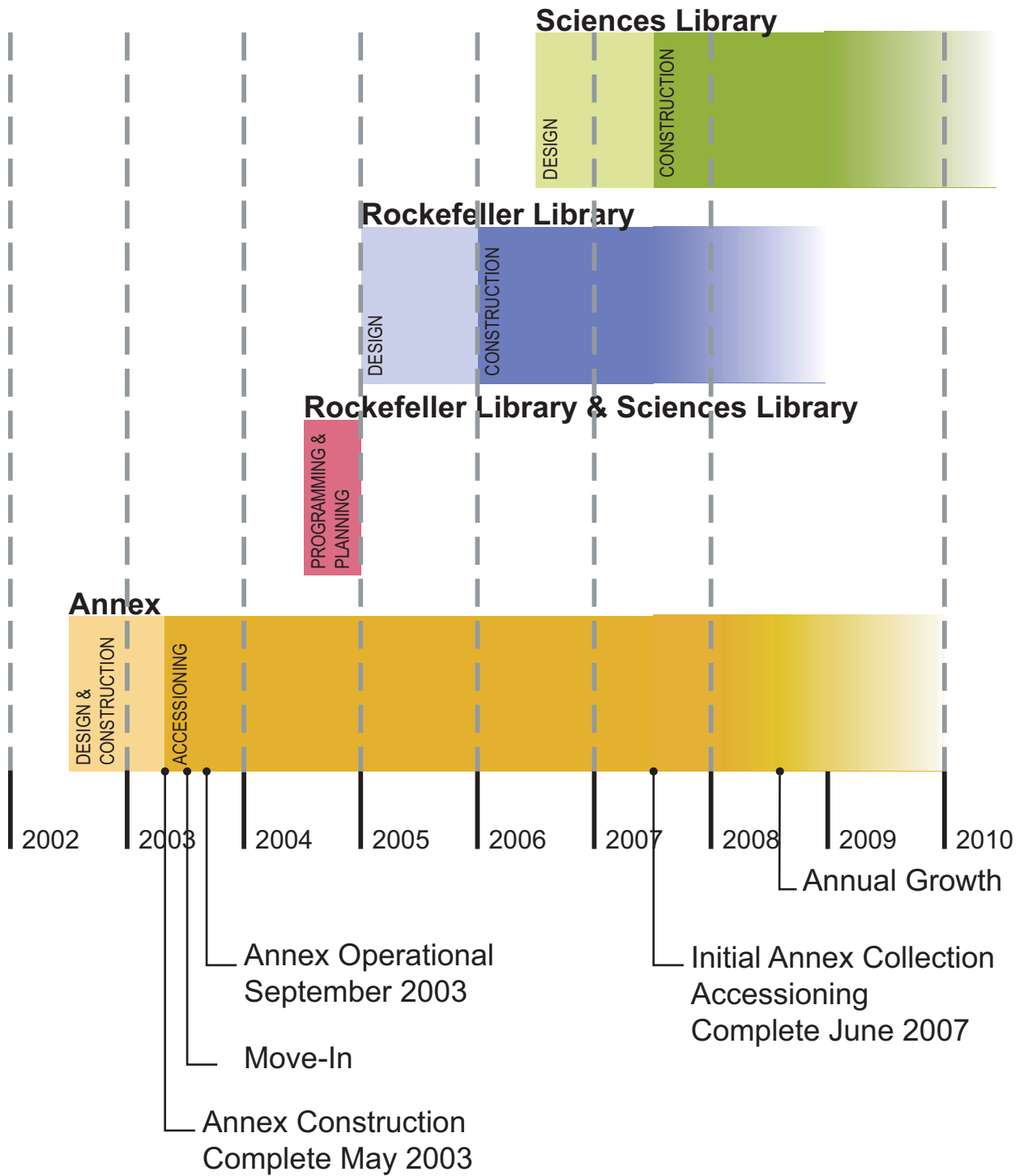
The recommended sequencing is as follows:

1. Purchase and Renovation of 10 Park Lane for use as the Annex
2. Relocation of materials currently housed at the Harvard Depository Library to the Annex.
3. Relocation of collections currently in campus libraries to relieve overcrowding.
4. Relocation of collections from Sciences and Rockefeller to allow for renovation that will provide ADA compliant 36" stack aisles and room for new program space.
5. Renovation of Rockefeller and Sciences Libraries, incorporating new program components and ADA compliant stack aisles as described in this report.

Significant improvements to the accessibility and browsability of materials remaining in existing campus libraries will be dependent on the successful accessioning of Annex collections. This cataloging and transfer of materials will be an extensive process that, under aggressive schedule scenarios, will still take four years to fully complete. Therefore, it is recommended that the purchase and renovation of 10 Park Lane be completed as soon as possible and that the accessioning of collections begin. If the Annex is ready to be occupied by the summer of 2003, the initial move-in can be scheduled for the summer months, allowing the facility to be operational by the start of the fall semester in 2003. Under this scenario, initial collection transfers to relieve overcrowding in the existing libraries could be completed by January 2005, and moves necessary to facilitate the ADA upgrades to the stack areas and new program components would be complete by June 2007.

Following the successful start up of the Annex, the completion of this accessioning program would provide room within the existing libraries for the realization of programmatic and organizational goals outlined in this report. It is recommended that the University undertake further, more detailed programming, planning and existing facility evaluation for the Sciences and Rockefeller Libraries. Building on the recommendations of the library overview, this would entail the identification and development of program alternatives and design scenarios that reflect library organizational changes and facility upgrades to be addressed as part of the proposed renovations and expansions of these buildings.

Design and construction timeliness for this work would be determined based on funding strategies and campus operational issues, with an expected design phase of 12 months followed by 18-36 months of construction for each library. In order to illustrate the dependency of these major renovation projects on the successful accessioning of the annex, the timeline included in the report assumes that the Sciences and Rockefeller renovation projects will begin as soon as the Annex is operational and be done consecutively.



IMPLEMENTATION TIMELINE

C. Annex Site Selection

The University is in the process of evaluating the purchase of the existing industrial facility at 10 Park Lane in Providence to meet the identified program needs. Initial structural, mechanical, electrical, and architectural investigations indicate that the high bay storage portion of the facility could be renovated to accommodate the Library Annex Collection storage to hold approximately 1.5 million volumes, and that adjacent low bay space could be renovated for Annex library staff areas, general university storage, and the university graphic services production space. In addition, the site would allow for future expansion of the library collection storage areas to house an additional 2-3 million volumes through the construction of two new high bay storage units contiguous to the existing high bay area. The existing storage area is somewhat less efficient for the storage of library collections than a new facility would be because the roof height and column spacing are not designed specifically for the types of storage racks used for high density library collection storage. However, the advantage of having a readily available facility appropriate in size and location outweighs this disadvantage. While costs to renovate the facility for the proposed uses will be significant, the projected costs are less than what would be proposed for the construction of a new facility. In addition, Brown University Planning Department investigations of available vacant lots suitable for new construction in the Providence area did not yield any for consideration. Therefore, it is recommended that the University continue to review the feasibility of purchasing the 10 Park Lane site for renovation to accommodate the Annex.

The following site plan illustrates proposed locations of major program components within the 10 Park Lane facility. The subsequent floor plan, prepared by Dill & Co., illustrates proposed layouts for the library collection and processing areas, including the high-density shelving racks.

Insert 10 Park Lane Site Plan

scan

D. Project Budget

Based on the existing conditions surveys and recommendations prepared by the University’s consultant team evaluating the 10 Park Lane site, preliminary cost estimates have been prepared in current dollars, and are summarized as follows:

ANNEX RENOVATION BUDGET (Library Areas Only)

CONSTRUCTION COSTS:	\$2,030,000
FF+E:	\$1,700,000
PROJECT COSTS:	\$1,400,000
SUBTOTAL:	\$4,600,000

ANNEX OPERATING BUDGET*

BASE BUDGET STAFF:	\$215,000 annual
BASE BUDGET OPERATIONAL:	\$32,000 annual

PUSH PROJECT STAFF: **\$2,620,000**

(Total over 5 years, and in addition to annual base budget).

PUSH PROJECT OPERATIONAL: **\$1,100,000 one-time**

Renovation costs were developed by Daedalus Projects. Operating costs were developed by Brown University working groups. Estimate details are included in the Appendices of this report.

*Does not include Records Management, see Section IV.

E. Conclusion

The construction of an off-site library shelving facility is the initial critical step in positioning the Brown University Libraries for the next several decades. With space on the Brown central campus at a premium, the University must pursue options that provide for continuing collection growth and accessibility without requiring the physical presence of less frequently accessed collection materials in Brown’s central campus libraries. Once the annex is in place, the library can utilize more of its high demand space, particularly in the Sciences and Rockefeller libraries, for expanded user services. The library Annex will not only resolve the University’s collection storage space issues, but will also provide a physical environment that contributes to the long-term preservation of the collection. This, combined with an access and retrieval program that promotes the availability and use of all parts of the collection, regardless of where it is housed, will greatly strengthen the library’s role within the Brown University Community.