



Library Expansion/Renovation Checklist: Creating Today's ARC Takes More Than Forty Days and Forty Nights



By

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**Library Expansion/Renovation Checklist:
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¹ The high density storage system in Georgia Southern's Zach S. Henderson Library is known as the Automated Retrieval Collection or ARC.

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Preface

Although my experience has been in academic libraries, I did my best to write a book designed to be useful in planning expansion and/or renovation projects in all types of libraries. Every effort was made to provide examples from different library settings and to remove academic references except in specific examples. My intention is to provide information that will be useful even for those with building experience who have not faced some of the requirements associated with more complicated projects involving several relocations of personnel and/or collections. No matter the size of the project, there are several things I recommend:

- Read specifications carefully and ask questions.
- Do not hesitate to ask questions about the specifications or any step in the construction process if you do not think an action is appropriate for your library.
- If no one in the library has building experience, seriously consider hiring a consultant. Even if you have someone with experience, a consultant may be needed if the project is particularly complex. If you cannot afford a consultant ask advice from librarians with building experience.
- Use the resources available through the American Library Association and the Library Leadership and Management Association (LLAMA) division. One example is the ACRL/LLAMA Guide for Architects and Librarians at http://wikis.ala.org/acrl/index.php/ACRL/LLAMA_Guide_for_Architects_and_Librarians The Buildings and Equipment Section of the LLAMA is the group within ALA most directly involved with library construction. Its web page contains construction related information at <http://www.ala.org/ala/mgrps/divs/llama/llamacommittees/besb/buildingsequipment.cfm>

Other suggestions are scattered throughout the following pages.

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Introduction

I literally grew up in libraries because my aunt was both a school and a public librarian. I was involved in my first library move when I was a senior in college. The college built a new library and invited faculty, staff, and students to assist in moving collections from the original library to the new library building across campus. While I was working my first job as a librarian, the college where I worked began planning a new library. In that project I had the opportunity to review the architectural plans, but I was more directly involved in planning and assisting with the physical move of collections from the library and one remote storage location into a new building.

While I was working at an ARL library with multiple branches, I was involved in several building and renovation projects. When a new branch was built, collections were moved from two branches and the main library by a library moving company. I chaired the publicity committee for that project. When the collection moves were complete, I was responsible for coordinating library volunteers who integrated the collections from the three different locations. During that same project, the government documents collection was moved from traditional shelving into compact storage, and I had my first opportunity to observe the use of stack movers to move loaded shelving. One of the units reporting to me as a department head was later relocated to allow a branch library to be moved into the main library while a new branch building was constructed. I was heavily involved in planning and implementation of that relocation.

Soon after I was hired as Associate Director of the Library at Georgia Southern University, I was given responsibility for all matters relating to library facilities. At that time the plans for library expansion consisted of building an addition to the original building to provide more room for book stacks. When I interviewed for my position, the library had not been automated, and the only computers were those used by staff and those used for word processing and other workstation based activities. By the time I arrived on campus, the library had been automated and the installation of a wide variety of electronic resources had taken place. The library was also in the early years of providing 24-hour service from Sunday through Thursday with a total of one hundred forty-seven service hours per week. While waiting for the eventual expansion/renovation project to be approved, I was the coordinator of two separate projects to expand electronic and data wiring in areas that eventually became forerunners of what today are known as information or learning commons. Three of the four floors of the library had new lighting installed, and two of the four floors had new carpet installed using stack movers to relocate collections during installation. Before new carpet was installed on the first floor, it was determined that there was not enough shelving available for the growing periodicals collection. As a result, all periodicals published before 1970 were moved to a storage area on the fourth floor that had housed university archives. Finally, one of the largest library departments was completely renovated. All of those projects were conducted while regular library 24-hour service was maintained.

The project I coordinated that gave me the most experience comparable to a major expansion/renovation was the creation of a reading room out of what had been an unfinished storage area when the university received a gift to complete that area and furnish it as a traditional reading room. Before construction on the reading room could begin, arrangements had to be made to relocate the pre-1970 periodicals stored there to another location. I worked extensively with physical plant personnel to locate an appropriate space for that storage. Once the space was assigned to the library, I was responsible for determining how the shelving could be installed in the storage building – a former classroom building – to house the periodicals collection. I worked with physical plant personnel to get the shelving installed according to the plans I created. A small part of the reading room area was a finished room that had been used for special collections. Before the reading room project began, I had to arrange for another area of the library to be modified so special collections could be stored in a secure area. Temporary walls were installed on another floor, furniture was removed, shelving was installed, and special collections were moved to the new area where they remained until the expansion/renovation project was complete. When the reading room was complete, I helped write the bid specifications for and select the furniture for that area.

The expansion/renovation project took much longer to complete than any other project in which I have been involved. When I began working at Georgia Southern in 1992, discussions of a library addition had already begun. I worked with campus architects to prepare the library's portion of the form required for requesting state funding for construction. It was not until the summer of 1998 that the project was formally presented to the Board of Regents of the University System of Georgia and was approved. At that time, my job responsibilities gradually began focusing more and more on the expansion/renovation project and eventually led to my serving full-time as the project coordinator for the library. The state legislature eventually voted to approve the sale of approximately \$22.75 million in bonds for the project. The architectural firm for the program design was chosen in 2000 with the library's full participation in the selection process. The program design included a recommendation for the installation of a high density storage system known also as an automated retrieval system (ARS). That feature was funded and eventually became known as the Automated Retrieval Collection or ARC. After the program design was accepted, the library was fully represented in the selection of the architectural firm that would prepare the building design. Work began with that firm in 2001. Construction began in June 2004 with substantial completion of the expanded/renovated building in August 2008. During the four and a half years of construction, all library departments except one were relocated twice and one was relocated three times. All collections were relocated at least twice and some were relocated three times. Three separate library moving companies and campus moving personnel participated in these relocations. Two buildings used to store collections and house personnel were scheduled for demolition so collections and personnel had to be relocated according to the deadlines for those relocations.

The contents of this book are heavily dependent on what I learned during the ten years required to plan and complete the expansion/renovation project. The book is intended to provide a checklist of items to keep in mind when planning expansion and/or renovation of an existing library building. It includes considerations from the beginning of the project until the final punch list. I hope it will also be useful to any one in a library who must plan an expansion and/or renovation or new construction without prior building experience. If I wanted to describe the

most important things I have learned about construction over the years, I would say “Be flexible, keep your sense of humor, and collaborate at every possible opportunity.”

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Chapter I: The Prequel

1. Does the library need a consultant?

The objective of any library expansion/renovation project is construction of a building flexible enough to meet the needs of current and future users and employees. If no one in the library or the parent organization is experienced in library construction, it may be advisable to hire a consultant for the planning process. Technology and library services are changing so rapidly that it is difficult to keep up with everything that needs to be included in an expansion/renovation plan. A consultant can help assure critical areas of services and support are included in the final project plan. If the library employee responsible for coordinating the project leaves before the project begins, the consultant's report can be invaluable to the next person to whom project coordination responsibility is assigned.

Consultants range from those who charge for their services to experienced colleagues who are willing to provide free advice. A web search can provide the names of consulting firms. However, it is important to distinguish between companies that simply provide consulting services and companies that are staffed by librarians with building experience. It can be helpful to query library listservs for recommendations and to search electronic resources. One helpful source is the Library Consultants Directory at <http://www.libraryconsultants.org/nselect.asp> It can be searched for consultants expertise with buildings and facilities. Finding a colleague at the state or regional level willing to provide free or inexpensive advice can be much simpler. Some states provide lists of consultants by type of library. A request for recommendations can be submitted to state and regional library association listservs and other similar lists.

No matter the cost, the most important thing to remember in choosing a consultant is to get recommendations from librarians whose judgment and experience you trust.

2. How do you know what space is needed?

No matter the size of the project, measuring collection and office space will be an important part of the planning process. As library representatives work with the architect(s) for the project, they will learn more about what will be needed. The employee time needed to measure current collections and spaces and estimating future needs will need to be included somewhere in the planning process. For example, if a collection will need to be stored during construction, accurate information will be needed to project shelving and other space needs while it is stored. The same information will be needed to estimate the amount of time needed to move and store the collection and the cost for moving and storage. Cost estimates will be needed if storage space will have to be rented or leased. Similar effort will be required if personnel will be relocated and/or equipment will be stored.

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It is advisable to be sure all measurements are double and even triple checked by several people. Mistakes in measurements can lead to expensive corrective measures. For example, if there is a mistake in measurements provided to movers, the resulting shifting or relocation of collections, furniture, or equipment can be costly or can require a considerable amount of extra work by library employees to correct resulting problems.

There are general standards for the amount of space needed for each employee and his/her work space needs. However, those standards are estimates that do not necessarily take into consideration the need to relocate existing furniture and equipment or individual work patterns. If personnel are going to be relocated during expansion/renovation, it will be important to provide accurate space needs based on existing furniture and equipment. If over time some or all affected employees have expanded work areas into whatever space is available, it is also advisable to insist that only mission critical items be relocated. This will be even more important if there is no storage space available.

3. Are collaborative opportunities available?

If space allows, collaborating with community stakeholders to enhance resources or services can offer exciting opportunities. Following the example of book stores, libraries are increasingly providing space for retail services such as coffee shops. Such services not only draw people who may not be regular library users but also offer alternatives to traditional employee spaces for breaks and meals. Depending on location, such spaces can also offer space for receptions or parties.

In academic libraries it is not unusual for space to be set aside for faculty to use for discussions, retooling, and other activities focused on teaching and learning. Such spaces require special attention in the planning process to see that they meet the needs of their users without presenting problems maintaining library security. The use of key card access can make this less challenging, but key card systems are most cost effective if included in original building design. If there is a possibility that the needs for such a space may be reduced over time because of technological or personnel changes, it is advisable to create a memorandum of understanding (MOU) with the non-library entity as early as possible. For example, such an MOU might include a clause stating that spaces no longer mission critical to the non-library unit will be made available to other library or non-library units as other collaborative opportunities arise.

4. Do you want/need a theme for the project?

Choosing a theme for an expansion/renovation project can make the process more appealing and less stressful for users and employees. With careful planning, project themes can improve employee morale and help relieve stress. For example, they can be used for parties and celebrations. If the theme is nautical, the project “ship” can be launched by breaking a bottle of and appropriate bubbly liquid against part of the building scheduled for renovation. The launch party can be fun for both users and employees. Many theme related opportunities can be relatively inexpensive. For example, themed book marks, web pages, blogs, wikis, etc. can be used to communicate construction related schedule changes and other project related

information. Colorful theme items can help alleviate the stress of interruptions such as temporary power outages in computer labs or excessive construction noise.

5. Can anything be done to improve the building before the project starts?

If there is going to be a long time before construction begins, it may be cost effective to complete small projects while waiting for construction to begin. Some examples of small projects include carpet replacement, light system/fixture upgrades, or restrooms renovations. With careful planning, small projects can help stretch funding for the major project. Careful planning includes asking questions like the following:

If new carpet is installed, can it be protected during construction or will it be subject to damage from carelessness or unforeseen circumstance?

If new carpet is installed, can it be easily taken up and stored during construction if conditions change and it cannot easily be protected in place?

If new light systems/fixtures are being considered, can it be arranged for any asbestos in existing structures to be removed before the work begins?

Will new lighting systems work with eco-friendly lighting solutions as they are developed?

Can restrooms be upgraded so that they will blend with other areas as they emerge through the expansion/renovation process?

If the answer to most of these questions is “no,” it will probably not be cost effective to proceed with the work before the major project begins.

6. What about asbestos?

Asbestos is hazardous to health if it is friable and will be affected by construction. Asbestos checking is required before an expansion/renovation project begins. Because of existing regulations, library employees should not be required to be proactive in the removal of asbestos from an existing structure. However, asbestos is a sensitive subject with regard to user and employee morale. Detailed regulations prevent asbestos removal from creating a health hazard, but misinformation about asbestos can create serious concern among users and/or employees. It is extremely important that accurate information be provided before and during the removal process. If possible, it is very helpful for a single person or only one or two people to be responsible for responding to inquiries about health and safety concerns. Experienced abatement contractors can usually remove asbestos with minimal disruption.

7. Can changes be made after the project is planned?

Once the final building design has been approved, the project is figuratively – if not literally – set in stone. Any change from the detailed specifications included in the building design, will

require a change order (CO) and change orders can be extremely expensive. They can also delay the project. The expense and difficulties resulting from changes in the original design specifications are an even more important reason for extremely careful planning before the project begins. Once the project is under way, the library should not request change orders except in critical circumstances. Most problems that emerge after a carefully planned and researched project can be addressed after the completion of the project.

8. Should you mount cameras to show construction progress?

Cameras can add interest and excitement to a renovation/expansion project at all stages. If data lines are available in nearby buildings and/or in various internal areas of the project, users and employees can watch the new and changing spaces develop. Interior and exterior progress can be monitored from any location with internet access. For example, if the architects are based in another city, they can review the project from their home office.

If changes are being made to the exterior, a camera mounted in a nearby building(s) will show both demolition of the old structure and construction of new spaces. It may also be possible to locate cameras within the existing structure in places that overlook exterior expansion or renovation.

Before mounting cameras, it is a good idea to discuss possible patron/employee concerns. For example, do signs need to be posted stating that cameras are being used? People may not want to be shown on camera. Signs can help assure that those with such concerns can avoid walking past cameras.

9. How do you plan new service spaces?

If the library plans to offer new or enhanced services, it is important to include the end user in the planning process whenever possible. Questions to be asked include

What units or individuals can contribute knowledge or expertise to the planning process?

Who will be the primary users/beneficiaries of the service?

How do you include stakeholders in the planning process?

An information [or learning](#) commons planned for an academic library is an example of a new or enhanced service that can be planned for that type library. Examples of individuals or units who might contribute to the planning process include representatives of the student government association, international student organizations, the provost or academic vice-president's office, student affairs, and campus technology services. The most obvious beneficiaries would be students. An advisory board for planning the commons can be established from those in a position to contribute knowledge or expertise. Such a board can assist in developing a survey to be administered to students to determine services they consider most important from a commons.

An expanded children's department planned for a public library is an example of a new or

enhanced service that can be planned for a public library. Examples of individuals who might contribute to the planning process include employees and administrators with experience in offering children's services, parents and grandparents whose children can benefit from the services, teens if teen services are to be offered in the department, and teachers who work daily with children in the targeted age group. If the expanded department is to be coordinated in any way with branch service, a branch representative should also be included. The most obvious beneficiaries will be children and parents. An advisory board for planning the children's department can be established from those in a position to contribute knowledge or expertise. Such a board can assist in developing a survey to be administered to children and parents to determine services they consider most important from a children's department. The design of the survey to be sure that it is child friendly will be very important.

10. Who will be responsible for planning the shelving layout for the completed building?

An architectural firm with experience in designing libraries should include shelving layouts as part of the building plans. However, one should never assume that design detail has been included. Determining who is responsible for shelving layout as early as possible in project planning can save time and stress later in the project when everyone involved is addressing the varied issues that arise during any construction project and multiply in more complex projects. If the shelving layout is not being provided by the architects, it may be necessary to hire a consultant to assist with shelving layout if no one in the library has that type planning experience. Even the work of an experienced library employee should be double or triple checked because mistakes in shelving plans can be expensive and time consuming. Within the layout shelving heights must be carefully checked near sprinkler heads to insure they do not violate fire codes. Failure to check heights can be another costly mistake.

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Chapter II: In the Beginning

1. If possible, assign a single person to serve as coordinator for the project.

No matter the size, a renovation/expansion project is a complex undertaking. It requires attention to detail and extensive discussion and communication. In addition to library, other stakeholders in the building process include the organization's administration and its subunits, architects, construction companies and their subcontractors, the local community, and state or local government. A single person cannot do everything that needs to be done on behalf of the library, but assigning coordination to a single person will greatly reduce the probability of confusion and miscommunication. This is particularly important in a large organization such as city or community government or a college or university campus.

For example, when an expansion/renovation project takes place within a large parent organization coordination is required on numerous levels. If upper level administrators need information about the project to make a presentation on behalf of the organization, a project coordinator is the best qualified person to be sure that accurate information is provided. If the building is open to the community for service, maintenance and repair of portions of the building not under construction must be coordinated with maintenance personnel. If the project is taking place in phases, it becomes particularly challenging to determine whether a problem should be reported to maintenance personnel or to the construction company. New construction should be under warranty for at least a year, but determining what is under warranty and what is not can require extensive discussion among library, maintenance, and construction company personnel. A single library coordinator can simplify that process. Coordination with public safety can be another area in which a project coordinator is advisable. Public safety personnel can play a key role in maintaining separation of public and construction areas when construction workers are not present. Such separation is critical both for public and employee safety and library security. Fire safety personnel are another group who may play a role in the project. The coordinator must work closely with both groups.

If the project is funded by state or local government, a government representative may be added to the list of those with whom the project must be discussed and coordinated. Extensive work with the architects will be absolutely critical to the success of the project. Communication with the contractor is especially important in order to see that disruption to services is reduced as much as possible. Scheduling power outages during holidays or other times when the library will be closed is an example of that type coordination. Another challenge may be changes in personnel representing any or all participating entities.⁴ A project coordinator can help assure that the library's needs and concerns are consistently emphasized and communicated throughout the project.

⁴ During the four and a half years the Georgia Southern University library was undergoing expansion/renovation, the construction supervisor changed, the non-library campus representative changed, and the state representative changed five times.

2. Be sure the library has a good working relationship with those responsible for planning building projects within your organization.

In the twenty-first century, few libraries are planned solely by librarians. Most libraries are part of an external governing system whether at the local, regional, or state level. That circumstance makes it important for librarians involved in the building planning process, especially the project coordinator, to develop an effective working relationship with building planners in the larger organization. Getting to know and working with non-library planners before a project starts can facilitate work during the project and relieve potential stress on both sides.

It is much simpler, for example, to work within the parent organization to be sure expectations are either the same or closely aligned than it is to present two or more sets of expectations to architects and/or construction companies. Presenting different sets of expectations wastes time and energy that could better be devoted to the completion of a successful project. If there have been problems with the infrastructure of the building being renovated, a close working relationship between representatives of the library and the parent organization can help see that such problems are corrected and not exacerbated by the renovation/expansion process. For example, leaks anywhere in the structure need to be brought to the attention of everyone involved in the expansion/renovation planning process. Library representatives are in the best position to bring that type of issue to the table.

A cooperative, collaborative approach toward the planning process on the part of the library can be beneficial in other ways as well. Representatives of the parent organization are more willing to consider the unique needs of the library if they are presented calmly and logically than if they are presented in a more confrontational manner. If unforeseen conditions create the need for additional funding from within the parent organization, fund administrators are often more open to such requests if library representatives have been more cooperative than demanding throughout the project.

3. Learn as much as possible about funding resources for the project.

When a project discussion begins, it is important to determine potential sources for funding. Even if the bulk of funding for the project comes from state or local government, there may be other resources available. It is important to ask a few questions before planning actually begins.

Does the funding authority impose any restrictions on funding provided by other entities?

Does the parent organization have funds available to supplement funding from state or local government?

Are requests allowed to outside funding agencies such as foundations?

Are there restrictions on who is allowed to make requests to foundations?

Are foundation requests the responsibility of the library, another unit within the organization, or of collaboration among several units?

If library representatives are thoroughly familiar with funding opportunities and requirements, they are in a much better position to negotiate funding from multiple sources to meet any short fall in original project funding.

4. Make every effort to insure that the architectural firm chosen for the project has experience building libraries and works collaboratively with librarians.

Very few buildings require the level of attention to detail in design that is required by libraries. The combination of service, accessibility, and security requirements posed by a library are matched by few other building types. Designing a structure with that combination of requirements demands a level of understanding of library operations that does not necessarily exist in all architectural firms. Before the selection process begins for the project architect, it is advisable to stress to those involved in the process the importance of the chosen firm's having experience designing libraries. An understanding of that importance will go a long way in assuring the selection of an experienced firm. Prior experience on the part of the architects can reduce the amount of time library representatives must spend explaining design requirements unique to libraries. Interior designers and other representatives of the architectural firm will be better prepared to discuss and ascertain design needs with library representatives if they have worked with library personnel on other projects. Prior experience can also assure that the architect is prepared to assist the library in explaining its needs to the construction company if questions arise about specific design elements. An experienced architectural firm may also offer design options that have been successful on other projects that might be overlooked by library representatives without experience in library design. Not all experienced firms collaborate with librarians. Asking a potential firm to provide evidence of collaboration with librarians is a reasonable part of the selection process.

5. Prepare for the selection of the architectural firm.

It is helpful for someone in the library to carefully research potential architectural firms prior to the beginning of the selection process. A simple online search using Google, Yahoo, or another search engine can provide information about architects that have designed libraries. The web sites of both the Library Leadership and Management Association (LLAMA) of the American Library Association (<http://www.ala.org/ala/mgrps/divs/llama/llama.cfm>) and the American Institute of Architects (<http://www.aia.org/index.htm>) offer information about architectural firms and library design. Having a carefully researched list of preferred architects for the selection discussion can increase the likelihood of an experienced firm being chosen for the project.⁵

6. Require that the architectural firm have a librarian consultant on their team and require that the consultant be knowledgeable in preservation issues.

⁵ It is a good idea to check with the local or state agency funding the project for any guidelines or requirements regarding the selection of architect firms for projects funded by that agency.

Even an architectural firm experienced in library design may not be prepared to effectively address all library design needs. Ideally even an experienced firm should have a librarian experienced in design and construction serving as a part of their design team. For example, if an unusual design element like an automated retrieval system will be included in the building design, it will be important for the architects to employ a librarian who can assist in answering the library's questions about the implementation and use of such a design element. An experienced consultant can also be invaluable in assisting the library in appropriate planning for personnel and technological needs.

Preservation needs are increasingly important as collections and building age. An experienced consultant can work with the architects to see that such concerns are addressed from the very beginning of the design process. Preservation needs require additional attention in a project in which collections are being stored during renovation/construction. For example, a leak that develops in the middle of the night between old and new construction sections can endanger collections. A consultant can help see that the architects and/or the construction company are prepared to have qualified personnel available to assist in water removal and collection protection.

7. Are the architects going to be the same for all phases?

It is important to determine as early in the project as possible how architects will be chosen for the project. If more than one architectural firm may be involved in the design process, it will be helpful for library personnel to be aware of that possibility as long as possible before construction actually begins. For example, if the parent organization uses a phased process in construction, there may be more than one selection cycle for architectural firms. There may be a program design phase and a later building phase. There may be a separate application and interview phase for each of those levels of the planning process. If two different firms are chosen for the two different portions of the design process, there may be some challenges that would not exist in a project with only one firm throughout. Having multiple architectural firms involved in the design of a project is another example of a case in which having a single project coordinator can be an advantage. There is less likely to be confusion about which firm to which questions or external inquiries should be directed if a single person is the official contact for the project. Different firms may also take different approaches to the ways they interact with library personnel. The project coordinator can help bridge those differences.

8. Ask that a library representative be notified of and/or attend any meetings where the building project will be discussed.

It is important to the success of an expansion/renovation project that library needs be carefully considered in any decision regarding construction. This makes it extremely important that the library be represented at all meetings held to discuss details of the project. Exceptions might be meetings that deal strictly with the coordination of mechanical, electrical, or plumbing (MEP) systems.⁶ At a minimum the project coordinator or appropriate library representative should be

⁶ If the library's governing organization has a comprehensive physical plant department employing electricians, plumbers, and mechanical support personnel such as HVAC (heating, ventilation, air-conditioning) technicians,

kept informed of such meetings. If that person is copied on agendas for meetings, (s)he will be in a better position to determine whether or not discussion topics potentially affect library requirements. In extreme cases it may be necessary for the project coordinator or library representative to attend a MEP meeting, but in most cases being able to raise library concerns before the meeting will suffice. As a follow up, the ideal would be for appropriate library personnel to be copied on notes from such technical meetings.

9. Insure that the project coordinator has direct contact with the primary contact in the architectural firm.

Because library access and service needs are so different from those of other organizations, it can be extremely difficult to communicate library needs to architects. Even firms with experience in library design do not necessarily understand the specific needs of a particular library. For example, if the library offers twenty-four hour access, it may require very different security and access design than a building that is not open as long. The project coordinator or library representative is in the best position to raise library concerns with the architect throughout the planning and design of the project. It is much easier to address special needs during the design phase than later in the project or even after construction. For example, if public access needs to be restricted to certain floors during certain hours, doors and elevators will need to be locked down without violating fire code. The earlier in the project such complicated details are addressed the better. They are best addressed through direct communication between the architect and the library.

If someone else in the library's parent organization is required to be involved in all communications regarding the expansion/renovation project, there are several ways in which that necessity can be addressed. If communications are via e-mail or other electronic communication devices, that person can be copied on all communication. If the discussions are in person or by telephone that person should be present in person or via conference call. Solutions of this type should be discussed early in the planning process so that they are used consistently throughout the project.

10. If possible, visit new libraries that are similar to the one being planned.

Visiting other libraries and talking with those involved in the planning, design, and construction process can be invaluable in planning an expansion/renovation project. Ideally visits to other libraries should include several library employees. Including representatives of most or all library departments should increase the effectiveness of the visit. It is virtually impossible for one person to provide the same level of interaction with the host library as a group. The group cannot only benefit from learning about effective design decisions but also about those that were not effective or created unexpected challenges. The earlier such visits occur the greater the benefit will be to the planning process.

Prior to visiting other libraries it is very helpful to do careful research to find libraries that are similar in type and service to the one being planned. It will be important to contact the potential

representative of that department usually represent the organization at meetings coordinating MEP systems. In that case it is less important for library personnel to attend those meetings.

host library(ies) to determine if they are willing to host visitors and if so, the best times for a visit. Communicating with the host library before the visit will help assure that everyone's time is used more effectively.

11. It is important to consider future library services in order to insure the best possible space allocations for the completed project.

It is not always possible to get unity among employees with regard to future space needs. Visits to other libraries and presentations by librarians providing leading edge services at their home institutions do not always convince the majority of library employees that the same approach should be taken when the project is complete. Fortunately or unfortunately, short-term decisions have important space implications for the future. Flexibility is perhaps the most important building design criterion, but even the most flexible building cannot meet all unplanned space needs. It is not possible to address all future needs in the building design process, but the wider the discussions the better. Space is directly affected by financial resources, but the more flexible the design the more likely future needs can be addressed. Ideally the majority of those involved in the design will be committed to making the building as flexible as possible. If a specific area is not being planned for maximum flexibility, it may be necessary to utilize input in the design process from personnel from a higher administrative level than those using or occupying the area.

12. How will construction affect other agencies?

If the library has a tradition of collaboration with other agencies, it is important to consider those collaborative opportunities early in the design and planning process. It can offer exciting possibilities during and after the project. A library might invite faculty from the interior design department of a local college or university to plan a student project around a specific area of the planned building. For example, a small class of seniors could be assigned a charette⁷ to design an information commons for an academic library or the children's department for a public library. Such projects not only increase interest on the part of the community, but they may also offer some helpful ideas that can actually be implemented by those responsible for project interior design. On the other hand, if community suggestions and ideas are not going to be seriously considered, it is not a good idea to offer this type of community participation.

It can also be important for the library to communicate with other agencies within the parent organization to address long-term concerns for building maintenance. If the building size is increasing considerably, it will be important for those responsible for custodial services and maintenance to be aware of the potential need for additional staff to meet the increase in the need for their services.

13. Are there standards for fittings like restroom fixtures, etc. within the parent organization?

⁷ Charette (charet): a collaborative workshop focusing on a particular problem or project. **Oxford English Dictionary**

This may seem like a minor detail, but it can have long-term aesthetic implications for the project. The first question to ask is “Do standards exist?” The second is “If they do exist, are they communicated to architectural and construction firms at the beginning of the design process?” A lot of time and expense can be saved if everyone is on the same page from the beginning of the project. It is a waste of money to install nice soap dispensers in the counter by a sink if custodial services cannot provide the soap needed for such dispensers. It is also unattractive to have a foam soap dispenser attached to a mirror over a counter soap dispenser that is not used. It is frustrating to everyone if the installed toilet paper dispensers will not easily dispense the paper regularly purchased by custodial services. It may not be possible to include this type of concern from the beginning, but ideally it should at least be brought to the table.

14. Even monuments and plants require planning.

Anything that is considered part of the library needs to be considered in the planning process. If there is a commemorative or dedicatory item inside or outside the library, its relocation will need to be part of the planning process. For example, if there is a time capsule or a large piece of marble or granite, how and where will it be stored during construction? Will it be put back at the library when the project is completed or will it be moved somewhere else permanently?

Are there trees near the library that will need to be relocated during construction? For example, a tree near a public library that is unique to the area or is used as a teaching tool at a university may be of great concern to the community. The tree may have to be removed, stored with a tree service during construction, and returned after construction is complete. Such a process can be very expensive, and financial responsibility for necessary services will need to be carefully outlined as early as possible in the project.

15. Do signs need to be relocated?

It will be helpful to review the area surrounding the exterior of the building for the location of signs regarding such topics as safety and parking. Several questions need to be asked.

Will the sign be needed in the short term and/or the long term?

Where can it best be located for both?

Who is responsible for signage – the parent organization or the construction firm?

Examples of this type signage include fire lane signs and book drop location signs.

16. What about parking – particularly ADA parking?

Parking can also be a complicated question. Questions may need to be asked about parking if such questions will not automatically be addressed by the appropriate parking authority. For example, it will be important to see that ADA parking be provided throughout the project. Depending on the parent organization, the library may have to become proactive in insuring the provision of accessible parking. If building access will change during different phases of a

project, parking authority personnel may need to be reminded of the need to relocate ADA spaces to provide accessibility. It is helpful to determine responsibility for such issues before construction actually begins.

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Chapter III: As Project Planning Continues

- 1. Establish a planning committee within the library that represents employees, users, and any other appropriate group(s) and hold meetings of that committee throughout the planning phase and during the construction phase(s) as appropriate.**

A number of benefits result from providing the widest possible base for the planning process. It is very important to include employees and users as early as possible in the planning process. Employee involvement allows the process to benefit from their combined knowledge and experience, and it helps insure their commitment to the project. It also helps assure that library needs are addressed – especially if the planning committee includes all library departments. User participation is not quite as critical as employee participation, but users provide a perspective that is not available from employees because they are too close to the project. If they are included in the process, all major user groups should be represented.

An example of an initial planning committee structure would be committees for collections, services, and furniture and equipment, and an executive committee to make final decisions. This structure is most effective if employee participation is as universal as service schedules allow. Employees can be encouraged to volunteer for the area in which they are most interested. Each committee would be responsible for planning all the details for its chosen area of responsibility. The collections, services and furniture and equipment committees elect chairs or co-chairs to not only facilitate meetings but also represent the committees on the executive committee. The executive committee would consist of the committee representatives, the project coordinator, and the head of the library and/or appropriate representatives from the administrative office. It would be responsible for coordinating the work of the other committees, making decisions regarding proposals presented by the committees, and communications within and outside the library.

If the project is being completed in phases, it may be necessary to use the committee structure in different ways at different stages in the process. If personnel and collections are moved at different times and in different ways over a period of several years, planning needs may be similar but not necessarily the same. Establishing different groups at different times can facilitate the inclusion of newly hired personnel who were not involved in earlier groups and offer the opportunity for more experienced employees to work with different topics at different stages. Variety can offer some relief to the stress that is part of any long-term project in which employees are subject to the noise and disruption that occur when a building is occupied during expansion/renovation. The term “committee” is used generically. At different stages it can be replaced by such terms as “group,” “task force,” “team,” or “working group.”

- 2. Hold public meetings to share information about the project as early as possible in the process and encourage comment.**

Stakeholders are much more likely to become interested in and excited about an expansion/renovation project if the details are shared well before construction begins. Open

meetings that offer the opportunity to see floor plans and design details and to ask questions of architects and other planners can be both popular and productive. If the library and/or the architects offer a detailed multimedia presentation about the project, attendees will have a much better basis for questions and suggestions. For example, on a campus with an interior design program students and faculty from that program may feel empowered to offer ideas and suggestions at the meeting and/or at other times during the project. In a public library setting, parents and grandparents may become excited enough about plans for children's facilities and services to dedicate themselves to providing long-term financial and volunteer support for those services. Because open meetings can serve as effective opportunities for generating useful ideas, it is important to assign someone to take notes before the presentation begins. With that in mind, it should be made clear throughout the meeting that ideas and suggestions will be taken under advisement since there will be financial and time limits to the project. This is an important step in managing user expectations. After the meeting the notes should be shared as appropriate with planners, funding sources, and other stakeholders. It is equally important to provide a facilitator for the meeting to insure no one's personal agenda derails the meeting.

3. Provide regular opportunities for input from employees and users

Employees are a vital part of any construction project, but they are especially important to the success of an expansion/renovation project. Occupying a building under construction requires a tremendous amount of flexibility on everyone's part, but especially on the part of employees. They are expected not only to do their jobs in the midst of the disruption of construction but also to help keep services as normal as possible for users. Providing regular opportunities for them to discuss the project and ask questions cannot only result in suggestions that help improve the final building but also help maintain morale. Even if the project does not allow changes to be made based on every single insight or idea provided by employees, encouraging discussion of them can help everyone prepare for the exciting opportunities for change that occur during construction and after the project is complete.

Users serve a different but vital role in the planning process. Their ideas help give planners a better understanding of what is expected from the other side of the service desk. This is especially important in an academic library. It is not unusual for students and faculty to be discussing recent research that can offer new approaches to library services that did not exist before the twenty-first century. Regular communication between users and library planners can help assure that current research is shared in a timely manner. For public libraries there are similar opportunities with the business community and other identified user groups. User involvement can help stimulate excitement about the project and alleviate some of the strain experienced by users during construction.

It is important not only to encourage input through face to face discussion but also through as many other avenues as possible. If a paper and/or online suggestion system is already in place, employees and users can submit ideas and questions. If possible, it is helpful to set up a separate link to an online suggestion system for questions and comments about construction that can be used by both employees and the public. Responses can also be posted online so that information is available to a larger audience than the individual who submitted the question or suggestion.

Blogs, wikis, listservs, and Twitter are some other ways to increase communications between stakeholders and library planners.

4. If possible, assign a single individual responsibility for accepting design suggestions from stakeholders.

There are a number of advantages to assigning a single individual responsibility for accepting comments and suggestions about an expansion/renovation project. The project coordinator or the primary contact - for a project without a single coordinator – is the person in the best position to provide appropriate responses. That person should have access to the most complete project information so that accurate information can be shared when questions are asked. That person should also be in the best position to be sure a suggestion that might improve the project gets communicated to appropriate persons so that it is most likely to become part of the project. If the comment or suggestion applies to library services during construction, that person is also in a good position to share it with appropriate library personnel. A single responsible person is in a good position to see that consistent information is communicated to all stakeholders throughout the project. This is both challenging and important in a project that takes several years for completion. Keeping stakeholders well informed throughout the process helps build and maintain excitement in spite of noise and disruption from construction,

5. Establish an electronic site where information about the building project can be updated regularly.

Web sites, blogs, wikis, and similar electronic sites provide excellent places to share information about an expansion/renovation project with both local and remote viewers. Links can be provided to floor plans for the finished project so that viewers can see where services and materials will be available when the project is complete. Perhaps more important is the ability to link to floor plans for the library as it undergoes transformation from old to new. If collections and personnel have to be relocated during different phases of the project, it will be critical to effective library services that users can find them easily. Floor plans can be extremely helpful during transition. If cameras are mounted to show construction progress, links to them can be placed on the same site with floor plans. Lists of FAQs for various groups of users can be posted, updated, and maintained as information changes throughout the project. Still photos of the project can illustrate progress and history. For example, if a large section of the original building such as a staircase is being removed, the resulting changes can be shown through still and/or live photos. If the project is featured in local and/or regional newscast, links to those broadcasts can be provided. This can be especially helpful if the broadcast displays a complex feature like an automated retrieval system. People who cannot visit the library can see how such a system works via a broadcast or a similar recording of the mechanism in use. Links can also be provided to any listserv or instant messaging system that offers direct responses to questions and comments about the project. As helpful as such sites can be to users, it should be kept in mind that establishing and maintaining them can be labor intensive. A library should not begin providing such aids if there is a possibility that they cannot be kept up to date.

It can be helpful to have one or more separate electronic site for sharing information with library personnel. Such resources offer ready access to minutes of construction progress meetings, library planning groups, and other similar records. Those records become a source for the history of the project that can be easily shared with new employees and for use after the project is complete. Time lines for the various stages of the project can be posted as often as necessary. Information that needs to be viewed by all employees for discussion can also be posted. Drawings for proposed collection and/or furniture locations can be posted for review as required. Documents that involve input from multiple sources can also be posted. For example, if there will be tours of the construction area which need to be scheduled, participants can sign up via a list posted on a wiki.

6. Establish a building feedback form.

A building feedback form offers the opportunity for stakeholders and other interested parties to submit questions and comments regarding the project at any time. It is probably more useful in early planning stages before web sites or other electronic resources have been highly developed. Completed forms should be sent to the same person who serves as the project coordinator or the primary contact. Responses to the form - like everything else about project communications - should be as consistent as possible. Comments submitted via the form and responses to them can be posted on the web site or whatever other electronic resource is being used as a primary part of project communications. It is not unusual for a number of people to have the same question with regard to a project. In that context posting comments and responses to the form can supplement whatever FAQ⁸ documents may already be posted. Maintaining the form and responses should not be particularly time consuming - especially when compared to the benefit of making the information available to the public and employees.

7. Provide detailed meeting notes and share them regularly with all library employees and other stakeholders as appropriate.

Detailed meeting notes can go a long way toward keeping employees and other stakeholders informed as the project proceeds. Ideally meeting notes will be provided by the architects. When they hold planning meetings with library departments and other units during any phase of the project, they should be keeping notes for their use. If they do not volunteer to send copies for library use, they should be asked to do so. When construction progress meetings are held, the architects or another agency involved in those meetings should be taking notes. Those notes should be made available for distribution within the library. If notes are being taken by the architects or another agency, the project coordinator or primary contact person should keep detailed notes of all meetings. As meeting notes are shared, the project coordinator or primary contact should be prepared to respond to questions and comments. This type of exchange can assist in identifying potential design or scheduling problems since a number of stakeholders will read the notes through the frame of their own interest in the project. For example, if the notes say that a power outage is planned for a time that will cause unnecessary stress for users and/or employees because the specified time is one of the busiest of the year, the construction company can be notified of the problem. In most cases such events can be rescheduled so that the impact on users and employees is minimized.

⁸ FAQ: Frequently Asked Questions

8. Keep notes on responses to questions to the architects, the construction company, etc.

It can be difficult to keep up with decisions that are made during a project that lasts for a number of years. It is to the library's advantage to keep careful records of responses that are received to questions and concerns raised at meetings. One reason is such decisions do not necessarily become part of the copy of the official project specifications available to the library. When notes of such decisions are maintained, the library is in a much better position to be sure that the decision is actually implemented as agreed. The need for this is more likely to occur in the early stages of planning. The notes on decisions can be particularly helpful in responding to questions from employees and other stakeholders. The kinds of topics that may be addressed in this way may include placement of equipment for public and employee use, location of specialized equipment like that for assisting users with disabilities, routes for access during construction, and similar areas of interest. If notes are stored electronically, the most important criterion for the software used is it should be easily searchable. If records are kept in paper format, note cards would be a good flexible solution.

9. Keep plan copies accessible during all phases and encourage comments and questions.

Physical plans for an expansion/renovation should include at least the project specifications and a complete set of floor plans. Although it is unlikely that stakeholders will need to review specifications on a regular basis, they need to be accessible for library employees to use in answering questions. For example, if the library is planning to install an automated retrieval system, there may be a number of questions that will need to be addressed during the project since technology changes almost constantly. An automated system is highly reliant on technology, and plans may need to be adapted to meet technological changes. It is logical that the project coordinator or the primary contact to keep the specifications in an easily accessible location.

Floor plans are needed for almost constant review. As the project proceeds, the groups and individuals involved in the library's internal planning process will need to refer to the plans at least occasionally. For example, when decisions need to be made about the locations for art works or security cameras, the group(s) making those decisions will need to view the plans to review furniture placement and exit pathways.

10. As soon as models and renderings are available put them on display in the library and on the web site or other electronic resource for the project.

Models and renderings go a long way toward making the expected outcomes of the project real to users. A model is especially useful for those visual learners who do best when they see something in three dimensions. Models can be whole or partial. A whole model can show what the final building will look like in its natural setting. A partial model may show a feature of the building like a multi-story atrium or an automated retrieval system. Ideally the architects will provide models that can be displayed in a prominent place in the library. Contact information should also be provided so that questions about the model can be addressed to the project coordinator or the primary contact. The model might serve as the centerpiece for a project related

display that can be modified and updated as construction continues. The display will probably have to be relocated several times to meet the changing needs of the phases of a multi-year project. Photos and descriptions of areas not visible to the public can increase interest in the display. As part of the display, a computer can be used for showing views from cameras mounted on the construction side and/or exterior views, recordings of special features or interviews about the project, time lines, and other appropriate information.

Renderings provide a two dimensional multi-colored view of the way the building will look when the project is completed. They add color and interest to the web site or other electronic resource used to promote the project. Renderings can also be used in products for sale to the public or for unique gifts for employees, board members, fund raisers, etc. The rendering can be added to such items as note cards, tote bags, clothing, and other items for sale to raise money for the library. Renderings may also be printed on fine paper and sold for framing. They are good for courting donors and other support because they bring the project to life long before construction is complete.

When models and renderings are added to web sites or other electronic resources, they offer viewers at remote sites a better idea of what to expect when the project is complete. Photographs allow all the items included in the physical display to be part of whatever electronic resources are being used in conjunction with the project. Being able to supply a link to an electronic resource can be a big time saver for everyone who responds to questions about the project. For example, the project coordinator or primary contact can send a link to live cameras to project planners who are off site so they can observe progress between construction progress meetings.

11. If you have any unusual services, e.g., 24-hour service, be sure that the ability to continue those services is included in all project planning.

All services need to be considered during project planning, but unusual services may require additional time and thought. It is important to start planning for those additional services as early in the planning process as possible. For example, if the library is open for 24-hour service all or part of the week, the construction company will have to be aware of the extra challenges that service requires. Electricity and other utilities must be maintained at times that they could be turned off for construction if service were not being provided except during common day and evening hours. Access routes planned during construction must be carefully reviewed and checked to see if they will be lighted appropriately – particularly during the less populated hours between midnight and the early morning hours. If reference services are offered electronically on a 24-hour basis, careful planning may be required so that data support is maintained throughout construction. This type of planning can be assigned to the group responsible for services during construction. If such a group has not been organized at the beginning of the project, brainstorming sessions with service personnel can identify potential areas of concern.

12. Planning for ADA accessibility must be included from the beginning.

One special population served by all types of libraries is persons with disabilities. Maintaining services to that population may require extra planning if access will be changed during construction. Existing ADA requirements assure inclusion of this population in the overall

design of the completed building. However, the actual implementation of planned access modifications during construction may require extra attention on the part of the library. For example, if temporary access for a year or more will be via an unpaved area, that area may create difficulty for persons with disabilities. It will also be very important that persons requiring accommodation for disabilities have an easy way to report problems or concerns during construction. Contact information for the building coordinator or primary contact person should be readily available within the library and through any local agency that assists with ADA needs.

13. Anything in the library that may require special attention during construction should be brought to the attention of the architects as early in the planning process as possible.

The earlier the architects are made aware of any special items such as unusual art pieces or other items that cannot be housed with regular or special collections the better. Including the installation of such items in the planning from the beginning can prevent the need for changes in plans after construction begins – a very expensive process – or the need for a post construction modification to the building. For example, if the library owns a large or particularly heavy piece of sculpture, it may be necessary to make special plans to properly showcase or support the piece(s). A large free standing sculpture may require a higher ceiling if it is too tall to fit under a standard ceiling. A wall-mounted sculpture that weighs several hundred pounds will require a reinforced wall so proper support is provided for its weight. Lighting for art should be considered early in the design process. It is usually better to give the architects too much information about these types of items than to risk their not being included in the planning process before the specifications are created.

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Chapter IV: As the Beginning Date for Construction Nears

1. Think of everything that is done within the library, how it is done, who does it, and where it is done and use that information for planning purposes.

This level of preparation serves the dual purpose of helping the library plan for the provision of services during construction and the preparation of a list of questions to be addressed by the architects and their consultants as the phasing of the project is planned. Items to be reviewed and discussed include departmental procedures, interactions among all departments, work flow during each phase, delivery access, and services provided inside and outside the building. This is an excellent assignment for planning groups and/or library wide planning meetings. It is important that a careful review of all operations be conducted and the details recorded.

The notes from the review can be used to determine how procedures may need to be modified during construction. This is particularly important for any departments that will need to be relocated during construction. For example, a department that has been housed in a single large area with offices offering clear lines of sight might be moved to another building where there are no visual connections among employees and space for some activities may be limited. Departments moving to new locations will need not only to review their internal procedures and work flows but also their interaction with other departments. Some questions to be asked include:

If the department responsible for receiving and distributing all library mail will be moved to another building, how will mail delivery be handled while that department is housed outside the library?

If a department that assists with a special collection and that collection will be housed outside the library, how will access to the collection be provided after regular business hours while keeping users and employees safe and secure?

If library operations will be spread among several buildings during construction, how and by whom will materials and mail be retrieved and delivered among buildings?

If the space available during construction is considerably reduced from what has been available within the library, where and how will services be provided if there is no longer space available for a major service site?

How can security be maintained in all library buildings?

If the traditional delivery space will disappear during construction, where can deliveries be made during construction?

If all collections cannot be kept in the library during construction, what will be placed in storage and how will it be processed for storage?

Where can bike racks or other similar service points be relocated during construction?

The notes from the review can be used in conjunction with plans and specifications to assure the architects and the library are on the same page. The architects may have to be involved in finding answers to some of the questions listed above, but a number of questions that arise are more a matter of building design than of internal library procedures. Periodically the planning oversight group should prepare a list of questions that have arisen within smaller planning groups and conduct a meeting with the architects to get them addressed. Careful notes of the questions and responses must be kept so the library can follow through as appropriate as the project proceeds. Some questions to be asked include:

Will the temporary relocation of service desk(s) and/or other services require modifications to the security system to insure that users cannot bypass security?⁹

Are data and voice access available in the areas where service desks need to be temporarily located during construction?

What portions of collections must be housed outside the library during construction?

If collections are to be left in the construction zone, how will access be provided for library employees while preventing public access?

Will temperature and humidity be controllable in the construction zone to a level to allow safe storage of collections?

How can ADA access be maintained if normal requirements such as curb cuts will be blocked by construction fencing?

2. As answers to the library's questions are provided, prepare a schedule of what the library has to do to prepare for construction and who will be responsible for accomplishing those tasks.

A task or "to do" list for the project is a critical piece of planning that can be expected to grow and change throughout the project. Most of the work required of the library in preparation for and during an expansion/renovation project is both staff and time intensive. In most cases the task list assignments must be accomplished at the same time library employees are expected to perform their regular duties. As a result, maintenance of the task list becomes even more significant. As the list expands it may even be determined that there are not sufficient employees available to accomplish everything required. If that happens, the details of what must be done, how long it is expected to take, and the workforce required will be essential to efforts to secure

⁹ Security gates may need to be temporarily relocated and doors may have to be locked to prevent users from exiting the building without passing through a security gate. It should be kept in mind that no point of egress can be blocked without insure that such blocking does not violate fire code.

additional funding from the parent organization or other agencies or to recruit volunteers to expand the workforce.

Some questions that need to be asked in developing the list include:

How will voice and data access be maintained for the public and employees throughout the relocations required by the project? Who will be the primary contact with appropriate information technology personnel? Who will need to be contacted in case of failure in voice and/or data?

Who will be responsible for communicating relocation and other project information to stakeholders in a timely manner?

What departments will be moving? When is the best time for the move from both the department and service perspectives? Who will perform the move of furniture, equipment, and/or collections? Will the same movers who move collections also move office furniture and contents?

What collections – if any - will be put in storage? If collections must be put in storage, where will they be stored? How will their location be noted in catalog records? How much shelving will be required? Who will move the shelving and collections? Who will perform the necessary processing? How long will it take to accomplish the move and processing?

Will collections be moved that must be kept accessible to the public? Where will they be housed? How will their location be noted in catalog records? How much shelving will be required? Who will move the shelving and collections? Who will perform the necessary processing? How long will it take to accomplish the move and processing?

If some departments had remained in the library during the project, when will those departments move to their permanent locations? How will services be maintained during those moves? Who will be responsible for moving furniture and equipment? Will there be any special requirements for library employees such as moving computers for public access?

3. Plan extensive communications about the project so that stakeholders are not surprised by construction fences, loss of parking, and other disruption.

When information about the project is ready to be shared publicly¹⁰, the more methods of communications used the more effective the results can be expected to be. Since no one method is totally effective, it is important to convey messages in as many forms as possible. Flyers, bookmarks, posters, electronic messages, web pages, blogs, wikis, flickrs and twitters are only some of the forms. Others will continue to develop as technology changes. No matter what forms are used it is essential to keep information current. As soon as the project is funded, information should be shared with stakeholders. In addition to posting floor plans, it is helpful to exhibit

¹⁰ Care should be taken to insure that no confidential project information is made public.

plans for construction fencing, alternative parking (if parking will be reduced during construction), and any other areas inside or outside the building that will be noticeably changed as the project proceeds. Building updates will be needed most often for employees since construction will be a constant fact of life for them for the duration. The need for updates for other stakeholders will vary. In cases where power, lights, water, or data will be temporarily unavailable, every effort should be made to give users as much warning as possible. More positive information like expansion in public space or improvements in accessibility are also important but less urgent. Providing project overviews can be less pressing, but extremely effective. The project coordinator or primary contact can go to meetings of community members to talk about the project. Such meetings can expand information distribution beyond attendees because a well-planned presentation usually gets shared by attendees following the meeting. As a result, other groups may request presentations or individuals may choose to learn more about the project by viewing electronic or physical displays about the project.

4. If the building will include any unusual installations such as an automated retrieval system, search the literature for similar projects and contact other libraries with similar facilities for planning and/or phasing suggestions.

Searching the literature for similar projects can lead to genuinely helpful information that can contribute significantly to planning for the project. Articles may include details of how the same installation was implemented at a similar library. They may also offer advice on what to do and what not to do that can almost serve as a troubleshooting list for the project. Follow-up articles may refine the advice included in articles written immediately after implementation. The literature and information provided by the manufacturer can often provide lists of libraries with similar installations. Most libraries are willing to answer questions and assist others installing the same equipment. There may even be electronic exchanges of information available for subscription. For example, if the library needs to determine how many bins of what size will be needed for an automated retrieval system, getting lists of bin numbers by size from a number of other libraries can allow a review of options for similar libraries. There will not be an exact answer available since each site is different, but following general guidelines for other sites is much easier than starting from scratch.

5. If the expansion/renovation will take place in phases that require the relocation of collections, determine how access to collections and electronic resources will be maintained throughout the various phases of the project.

Determining how to keep collections and electronic resources accessible during an expansion/renovation project is necessary to maintaining an acceptable level of service during construction.

If collections are going to be kept in the library during construction but will need to be relocated once or more, planning to keep them accessible at all times will require detailed preparation. Some of the questions needing to be addressed include:

Where will the collections be moved?

Who will move the collections and the requisite shelving?

Will collections be directly available to the public? If not, how will they be delivered to the public?

How will temporary locations be communicated to users if collections are open to the public?

If collections will be moved more than once, how who will do additional work required for the moves and what will be the source of any necessary funds for the moves?

If collections are going to be stored off site, some of the questions needing to be addressed will include:

Where will the collections be moved?

Who will move the collections and the requisite shelving?

How will they be delivered to the public?

How often will materials be retrieved?

Are there any employee safety concerns related to retrieval of stored materials?

Maintaining access to electronic resources requires less detailed planning, but it also requires careful planning because it is totally dependent on access to data. Plans need to be carefully checked to see if areas intended for electronic access are fully wired and physically appropriate for temporary use with electronic resources. Some other questions that need to be addressed include:

Is all necessary furniture available to be used for electronic resource access in designated areas?

Will the necessary electronic infrastructure be in place in designated areas when needed?

How can [the](#) installation be planned so that disruption for users is minimal?

Can new access points be activated in a timely manner to provide successful relocation of electronic access points?

Who needs to be involved in arranging for activation of new access points?

Does the library have appropriate access to all decision makers so that all necessary preparation for electronic access relocation can be made?

6. Be prepared to adapt plans and schedules because something is almost guaranteed to happen that will require change(s).

In spite of extensive, careful planning on the part of the library, it is inevitable that one or more unforeseen circumstance will develop that will require large or small changes in planning. Such circumstances may be as minor as the relocation of a piece of equipment within a specific area or as major as a total change in how and where collections will be stored during construction. With this in mind the importance of remaining flexible in library planning cannot be overstated. In many cases unforeseen circumstances are in areas that can be addressed by the architects and the construction company with minimal involvement by the library. Stakeholders and employees may never be aware of the majority of unforeseen circumstances.

Circumstances that affect library services and/or function are those that will require revisions of plans and schedules. When faced with unforeseen circumstances that require major changes in plans or schedules, it is important to approach the change as openly as possible. The more positive the approach taken the more constructive the outcome. Change can lead to work that is very staff intensive, but that can also be approached positively. Involving employees not only in the planning process but also in the change process can contribute to positive outcomes. For example, if work is being done in teams, the teams may challenge each other informally. Informal competition can make the work more fun.

7. If collections will need to be placed in more than one location during construction, plan the best way to designate the different locations in the catalog and the best way to physically mark locations on each item.

Relocating collections during construction requires special planning. The level of planning required will vary depending on the size of the collection(s) to be relocated and the number of locations in which collections will be housed, An example of a complex project would be one in which collections are distributed among open stacks in the library, an automated retrieval system, and offsite storage. Preparing to relocate collections for that scenario is more time intensive than preparing for a move from the original building to a single temporary location.

Offsite storage can [require](#) both time intensive planning and implementation efforts. Once the decision is made to use offsite storage, some questions to be asked include:

Is a building available where temperature and humidity can be controlled for safe storage of materials?

What collection(s) will be placed in offsite storage?

How will storage be designated in the catalog so users know materials are not immediately available and what is necessary for retrieval? Is signage needed? Can there be too much signage?

Who will make necessary changes to the catalog or create signage and will additional personnel be required?

Will items in storage require special marking so they get returned to storage after use?

If special marking is required, who will mark each item, and will additional personnel be required?

How will shelving be laid out in the storage building so materials are easily accessible?

How will collections be organized on the shelves? For example, will collections be kept in absolute call number order or will oversized items be shelved separately? How will separate collections such as government documents or periodicals be shelved?

Will the relocation require the services of a library moving company, and if so how will the move be funded?

How, by whom, and how often will items be retrieved from and returned to storage?

How will security be maintained in the storage building?

Will furniture and/or equipment be stored in the same building?

If collections will be placed in more than one location in the library, a somewhat different approach is required. Some questions to be asked include:

Where will the collections be placed?

How will the different locations be designated in the catalog?

Who will make necessary changes to the catalog and will the changes require additional personnel?

Will items require special marking so they get returned to the correct shelving area?

If special marking is required, what mark will be used for each location?

If special marking is required, who will mark each item, and will additional personnel be required?

How will shelving be laid out in the new location(s) so materials are easily accessible?

Will the relocation require the services of a library moving company, and if so how will the move be funded?

8. If collections are to be relocated, what kind of processing – if any – will be required

before, during, and/or after collections are relocated?

If the relocation of collections will be simply a move from the original building to another area of the expanded building, there may be no need for processing. If books are going to be moved to two or more locations, some or all items may need to be physically marked. For example, if items are being placed in open stacks in the library, in an automated retrieval system, and in offsite storage, it will be essential for the physical location of each item to be clearly marked on the item. Without careful marking, items can easily be sent to the wrong location and become inaccessible until the mistake is discovered and corrected. The following questions need to be addressed:

What will be moved where?

What will be the most efficient method of physically identifying items?

Will all items need to be marked or can the largest portion of the collection be left unmarked?

Who will mark each item and will the process require additional personnel and if so how will that be funded?

If books are going to be moved to two or more locations, item locations will need to be modified in the catalog at the beginning and the end of the project and at any other time temporary locations are changed that affect public access. The following questions need to be addressed:

How will new locations be designated in the catalog so that users can find them easily?

Who will make necessary changes to the catalog and will the changes require additional personnel?

How will any additional personnel be funded?

When the project is completed, books that have been housed in multiple locations during construction will need to be moved back to the library. Planning and preparation will be required to provide the necessary processing to reflect final locations for some or all of those items. The following questions need to be addressed.

Where will each part of the collection be housed when the project is complete?

What parts of the collection will need new catalog designations?

9. If a special installation like an automated retrieval system will be installed, will any extra efforts be required to place collections in such a system?

If an automated retrieval system (ARS) is being considered for the project, the first question to be asked is whether or not it is compatible with the library's integrated library system (ILS). It is

required that the system that runs the ARS be able to communicate with the library's ILS for the ARS to function properly. If it is determined that the two systems are compatible, it is important to find out if extra software is needed for the ILS. Such software can be relatively expensive so establishing how the software will be funded is another important factor in the planning equation. If the library's ILS is not compatible with the ARS software, a study will need to be made to determine if an ARS is the most cost effective solution to the library's space needs.

Once the decision has been made that the expansion/renovation project will include an ARS, it will be necessary to prepare detailed plans for housing collections in that system. One of the most important elements of that planning process will be determining how books can be organized by size since the height of each book determines the size bin in which it must be placed. The organization of collections for storage in an ARS is time and staff intensive. The following questions need to be addressed:

What will be placed in the ARS?

Do all the items to be placed in the ARS have bar code labels?

If bar code labels must be attached to some items, who will handle that process and will additional personnel be required?

Where will items be sorted by size and how will they be moved from that place to the ARS?

Who will do the sorting and will that process require additional personnel?

Who will move the materials from the sorting area to the ARS and will that process require additional personnel?

How will the loading of the ARS be organized?

Who will create the loading schedule?

Who will be responsible for training personnel doing the loading?

Who will decide which personnel will be trained?

Will loading the ARS require any special equipment or materials such as bin dividers and if so how will they be funded?

If additional personnel are required, how will that be funded?

This is an area in which talking with other libraries with similar systems will be especially helpful to the planning process.

10. If collections will be placed in more than one location, will those locations be accessible to users?

The decision to make remotely stored collections accessible to users requires careful consideration. If the remote storage facility will be publicly accessible, the facility will require staffing and security at a level much higher than a facility that is not publicly accessible. Personnel must be provided for all hours the facility is open, and collections and personnel must be kept safe and secure. There are a number of questions to be addressed including:

Are the collections to be housed in the facility used enough to require public accessibility during all regular library service hours?

Does the facility meet safety codes for occupancy?

Does the facility have the necessary infrastructure to maintain temperature and humidity at appropriate levels for both personnel and collections?

Does the facility have voice and data access?

Is the facility in a safe location?

Is parking available for personnel and users?

How will theft be prevented with minimal personnel and/or equipment available?

What equipment will be required for circulation and security of materials?

Is it financially feasible to keep the facility publicly accessible? For example, what will be the service hours and what staffing will be required to provide adequate service?

11. If collections/and/or personnel will be placed in more than one location, it will be essential to carefully plan delivery and transportation for multiple locations.

If collections are going to be housed in multiple locations, it will be necessary to plan how items will be retrieved from remote locations that are not accessible to users. Like so many other topics for planning and discussion prior to construction, delivery and transportation require new approaches to the delivery of library services. Some questions to be asked include:

Who will be responsible for retrieving items from the remote storage facility(ies)?

How will those responsible for retrieval travel to and from the facility(ies)?

What will be the personnel requirements for the retrieval service?

If a vehicle or more than one vehicle will be needed for the service, will it/they be [leased](#) or purchased, and who will provide vehicular maintenance during the project?

How often will the retrieval service be provided?

If several collections will be stored in remote facilities, will any of them involve specially trained personnel for retrieval or can the same personnel retrieve items from all collections?

How will any extra expenses related to retrieval services be funded?

If personnel are housed in multiple locations, it will be necessary to plan how they will travel to and from the library for job related duties and special events. If personnel are housed in remote locations, plans will also have to be made for the delivery of mail and collections among locations. Some questions to be asked include:

Where will the library's primary shipping and receiving location be housed?

Will addresses for deliveries of mail and packages need to be changed?

How will materials be delivered between locations?

Who will be responsible for delivery?

If personnel housed in remote locations have work that must be done in another location, how will they travel between locations?

How will remotely housed personnel be included in library personnel activities so they do not lose contact with their colleagues or feel they are being excluded from project planning?

How will any extra expenses related to housing personnel in multiple locations be funded?

12. It is important to meticulously plan for the installation and support of photographic security systems.

It is important for the library to be closely involved in planning for security systems that involve cameras and other photographic equipment. Library personnel should work with the architects and the organization's security personnel to assure that cameras are located in areas that are not under direct supervision of library personnel. Security personnel can also insure that specified equipment meets local standards and is compatible with similar equipment in other units within the organization. This is especially important in large facilities that are open for overnight use. Library personnel are in the best position to describe patterns of service and to recommend the most effective locations for cameras. It would be extremely helpful for library and security personnel to have a demonstration of the proposed equipment early enough for requests for changes to be made prior to the installation of the equipment. This is helpful in determining which library department is best equipped to work with the system and whether or not the proposed equipment meets all the library's needs. For example, the equipment should allow

copies of recordings to be easily made and converted to still photographs if needed. If not, recordings of criminal activities may not be available for use by the police or other security services in apprehending those responsible for the deed.

13. It is essential to carefully consider the options for equipment to be used on emergency exits.

It is important to work with the architects to see that emergency exits are installed with the most appropriate alarm hardware to meet the library's needs. As early in the project as possible, the library project coordinator or other appropriate person should review the specifications for emergency doors with the architects. If the security system is to be monitored at one of the service points, it will be necessary for personnel to be able to view the exit that is about to be misused before anyone actually exits from that point. One way to help minimize the misuse of emergency exits as regular exits is to install time delayed locks that meet fire codes and provide a loud alarm before the lock will allow the door to open. If such locks are allowed by fire codes, it is best to install them during the construction process so that necessary data or electrical access is provided at each exit. Installing such equipment after construction is complete is a much more expensive process.

14. Carefully check to insure clear communications with the architect regarding what is included in the project budget and what is the responsibility of the library or its parent organization.

If the project has a budget line for "loose equipment," it is critical to determine exactly how much of the loose equipment the library expects to install is included in that budget line and what must be covered by the library or the parent organization. It is also important to continue checking on the funding in the "loose equipment" line as the project continues since it is one of the lines most susceptible to reduction if other costs increase. For example, there might be as much as a million dollars in the loose equipment line at the beginning of the project, but most or all of it can disappear if funds are not available in other lines to cover unexpected conditions or increases in the cost of materials.¹¹ Some examples of items that may or may not be covered in the "loose equipment" line are furniture (including shelving and end panels), projectors and other audiovisual equipment needed for training and meeting rooms, wall mounted televisions or monitors for information and instruction, exterior signage, donor recognition, hardware and supplies for special installations such as art security systems, teleconferencing equipment, and almost any other specialized equipment used by the library.

15. It is also important to determine how construction will affect access to and security and safety within the library and to plan accordingly.

The plans for the project should include drawings showing construction fences, trailer locations for offices of the primary construction company and its subcontractors, and any other

¹¹ For example, if a project is funded by a state or regional government, the decision may be made by that government entity to use funds originally allocated for loose equipment to cover shortfalls in project funding. Shortfalls in project funding are fairly common because there are so many factors that impact costs –particularly in large, complex projects.

construction related equipment that will be in place throughout the project. If the project is going to be done in more than one phase, there may be a different configuration for each phase.¹² Drawings can be used by library planning groups to determine the best means of access for users and how services can be provided as near as possible to access points. It is important to study the drawings carefully and consult the architects if there are questions or concerns. Although plans should be made before construction begins, they may have to be modified later. For example, if access will require users to travel through an area that contains construction debris, ADA access may be a challenge. Those kinds of challenges do not always emerge until after construction begins.

Since library employees are most knowledgeable about security issues, it is important for the planning groups to carefully review the drawings that show access during each phase and how the parts of the building being used for the public and those under construction connect. It cannot be assumed that the specifications address all elements of library security. Some of the questions to be asked include:

Do the specifications call for locks on the library side of any doors or other openings between the public side and the construction side?

If not, who will be responsible for providing such locks?

Do any parts of the construction side need to be accessible for use as emergency exits?

If emergency exits must go through the construction side are they clearly marked and are paths kept clear at all times?

Is it possible for someone to enter the construction side after hours and get into the public side through openings that cannot be closed?

If it is, how can any opening(s) be made secure?

One safety measure that should be taken before construction starts or as soon after as possible is the development of a temporary emergency plan for use during construction. It should include details on how to get users and employees safely of the building in spite of construction. Of particular concern would be methods for getting persons with disabilities off upper floors. It is advisable to conduct an emergency drill as soon as possible after construction begins to be sure the temporary plan is workable.

16. If at all possible, the library should be represented at any progress meetings held for the project.

During most construction projects regular progress meetings are held to discuss all aspects of the project. Attendees include representatives of the architects, the construction company, funding entities, the parent organization, and others as needed. Regular participation in such meetings by

¹² An example of a multiphase project could be one in which an addition is built during the first phase and the original building is renovated during the second phase.

at least one library representative is particularly important during an expansion/renovation project. The project coordinator is the logical person to represent the library when there is a coordinator. If there is no coordinator, another library employee should be assigned to regularly attend progress meetings. Progress meetings entail discussion of all aspects of construction including scheduling, work done between meetings, quality issues, payment issues, and questions that emerge between meetings. In a phased project during which library services continue during construction, library representation at progress meetings can help keep the impact of construction activities on services minimized. Information gathered at progress meetings can greatly improve communications with stakeholders throughout the project. If something is discussed at a progress meeting that will affect the provision of services to users or the working conditions of employees, the library representative should be proactive in assuring that library needs are given careful consideration during construction planning.

17. A very important question is how furniture will be provided for the expanded/renovated building.

When the project begins, funding for furniture may be included as part of loose equipment or in some other line. However, there is always the possibility that those funds will be needed for other expenses as the project proceeds.¹³ With that possibility in mind, it is advisable to carefully review all options for furniture before construction actually begins. Some questions to be asked include:

What existing furniture will be needed to support library services during construction?

Are there any areas – especially work areas - that require new furniture to be effective?

Is there furniture that is so old and/or worn that it is not usable for the present or the future?

Can furniture that is not needed be recycled within the parent organization?

Is there furniture that should be kept in case funding for new furniture is not available at the end of the project?

Can all the furniture that needs to be kept be used in the library during construction?

Is an alternative storage location available for furniture that needs to be kept but will not fit in the library in the short term?

If funding is available for new furniture, there are other questions that need to be asked.

Should public or office furniture take priority if there are not enough funds available to fully furnish the building?

Who will make decisions about furniture choices?

¹³ See note 7 above.

What will happen if a library furniture committee is put in place and the parent organization reassigns that responsibility by hiring the architectural firm or some other firm to select furniture?

Is an interior designer available within the parent organization to assist with furniture selection if furniture selection is not part of the contract with the architect? Does the interior designer make final decisions on palette and furniture or does the interior designer collaborate with library personnel making final decisions?

If furniture delivery cannot be made while the building is occupied, how will delivery be organized and scheduled?

How and where will furniture be delivered and installed if shelving and books are being installed at the same time by a different company?

Library Expansion/Renovation Checklist: Creating Today's ARC Takes More Than Forty Days and Forty Nights

Chapter V: Under Construction

1. Be prepared for unexpected challenges during construction and be flexible.

The importance of flexibility during construction cannot be stressed too much. It is impossible to know what may happen during an expansion/renovation project. For example, birds and other animals can get into openings in construction and into the library if separation is not carefully maintained. Safely removing animals from the library, while preventing danger to employees or damage to collections and equipment, can be difficult even at the best of times. Water can also find its way through almost any opening. When there are heavy rains, it is helpful to have connecting walls between the construction side and the library carefully inspected for leakage to help prevent damage to collections, equipment, or supplies. If excessive amounts of water penetrate construction barriers, the sooner it can be removed the better to prevent long-term damage. This is absolutely critical if flooding occurs in an area where existing floor covering is not scheduled to be replaced. Early in the project it is not unusual for construction to cause unexpected problems with electrical and security systems. For example, power may be cut off in a small area to protect construction workers and inadvertently cause problems for users and/or employees because they lose power to computers or other equipment. Minor changes of this type can also lead to malfunctions of systems such as emergency alarms. As all these challenges occur, it is important for the project coordinator or other appropriate library personnel to use them as an opportunity to increase communication and cooperation with the construction contractor. Establishing good communications and being proactive toward cooperation can greatly improve interaction with the construction contractor as the project continues. Ideally power and data interruptions will not take place without the contractor notifying the library in time to notify users and employees of potential disruption. Proactive cooperation also helps in arranging for severely disruptive activities to be scheduled when the library is closed or use levels are at their lowest.

2. Providing support and reassurance for employees who have questions or concerns during construction is critically important to maintaining morale – especially if construction lasts several years.

Noise, dust, offensive odors, and temporary blocking of entrances and exits are just a few examples of the disruption employees must cope with when a building is occupied during an expansion/renovation project. There is very little that can be done to change the impact of disruption, but it is beneficial to morale if the project coordinator and/or other library administrators express appreciation to employees for their patience and tolerance with these stressors. Even more important is providing information and reassurance in cases where employees believe they are being exposed to health or safety hazards. If asbestos removal is part of the project, employees need to be informed about that activity and provided detailed information on why it will not cause a health hazard as long as they obey warning signs posted to keep people out of hazardous area. It is not unusual for odors to seep from the construction side to the library side that cause alarm on the part of employees. Construction equipment may create

odors that make employees think there is a gas leak in the building. Questions and concerns about odors of that type should be respected and answered in as much detail as possible. It is also possible that construction work can lead to situations that would be dangerous if people are not kept out of the area. For example, a gas line can be cut accidentally. In that situation cooperation and communication between the construction contractor and the library can help insure that everyone is kept safe until repairs are made.

If the project lasts for several years, employees may begin to feel that the project will never end. In that situation it is important for the library administration and the parent organization to be creative in supporting personnel. Positive reinforcement from upper level administrators can go a long way in relieving construction related stress. Support can range from regular library-wide breaks to formal receptions and other expressions of appreciation. It is also important that mid-level administrators such as department or unit heads be reminded of the importance of sensitivity to stress levels among employees during extended projects. Almost anything that adds humor and a sense of fun during a project is beneficial in relieving the stress caused not only by disruption but also by the need to deal with the many unknown elements of building occupancy during construction. For example, employees might be encouraged to submit suggestions for a theme for the project. Regular opportunities for activities designed around the theme can offer both opportunities for creativity and for relaxation among employees. For example, a nautical project theme would allow parties and breaks to be organized around “voyages” to new places. Simple costumes and theme related games could create a sense of adventure without requiring excessive work on any person’s part.

3. Discussing how some of the potential challenges of construction will be addressed by library personnel is another significant step in the planning process.

This is a discussion that best begins in the group that oversees the planning process. As explained in number one above, it is not possible to predict what will occur due to unforeseen circumstances. However, it is important that a system is in place to deal with whatever occurs. This can be as simple as stating that existing emergency team(s) will be expected to take action in the event they are asked to do so. If that is not appropriate, a planning group or groups could be assigned special duties in case of construction related emergencies. The level of planning in this area is somewhat dependent on the level of support from non-library personnel provided through the parent organization. For example, if library employees deal with water intrusion on a regular basis, they may be trained to do so during construction. However, if non-library support personnel routinely deal with problems from water intrusion, they may be available to assist with similar events during construction. It is important to arrange this kind of support with the parent organization before such an event occurs.

During a project lasting for several years things happen that affect employees and users in the short term and the overall building in the long term. Some involve safety and require immediate action. For example, a gas line might accidentally get broken by construction workers. If users and employees are in immediate danger, action must be taken to route traffic away from the danger zone. It is much easier to handle this kind of temporary disruption if such possibilities have been discussed and a plan put in place to address safety and communications. The plan should include internal and external communication guidelines so that the project coordinator

and other appropriate library personnel are notified of adverse events. It should also describe who will do what depending on when an event occurs. One fairly simple way to create such a plan would be to modify the library's existing emergency plan.

4. It is essential not to assume that the specifications for the project include adequate data and power or wireless access to meet library needs.

An existing building structure may make it difficult to provide adequate wiring – especially for data or wireless access. If local facilities policies do not allow trenching in original floors, alternatives may need to be pursued. The important thing is to check to be sure the expanded/renovated building is being designed so that wiring is available everywhere. Requirements may change as wireless or other technological developments reach the same level as hard wired access to data. Even the best architects may not realize the level of data and power accessibility needed for a twenty-first century library. There may also be differences in how the architects and the construction contractor interpret the project specifications. The project coordinator or other appropriate library employee should check the specifications carefully to be sure that every effort has been made to make data and power readily accessible. It is also important that information technology specialists in the library and/or the parent organization be included in planning at the earliest stage in the planning process. Their input is important not only to insure that the building meets current technological needs but also is better designed to address developing and future technological needs.

5. It is important to keep in mind that - for various reasons - buildings used to house library personnel and/or collections may not stay available throughout a lengthy project.

Another challenge that may arise during construction is the need to vacate a building being used to house personnel and/or collections. If that happens, a lot of work will have to be done at least twice. If collections will have to be relocated, the same process described earlier for setting up a remote shelving location will have to take place in preparation for relocating the collections again. The same is true for personnel. Ideally some of the planning from the original relocation will be equally applicable to the new location, but that is not always the case. The same kinds of questions originally asked will have to be asked again so that all factors are considered when planning an additional relocation. Not only are these activities time and work intensive but they can also be expensive. [In most cases the parent organization should provide necessary funding since these kinds of non-construction activities are not covered in the project construction budget.](#) One of the most important responsibilities for the library is to provide support to any employees who have to move more times than originally planned or expected. Unfortunately, this is another kind of disruption that can occur even in a carefully planned project.

6. Change orders can be expensive so alternatives should be carefully considered.

Once a project has reached the construction stage, changes in design and/or implementation can only be made through change orders. A change order involves an alteration to the plans and specifications on which the construction company made its bid. Change orders can be very expensive if they are not required by the architect, the contractor, or the project funding agency.

In short, the library should avoid requesting change orders unless absolutely necessary and even then all alternatives should be explored first. This is a good example of the importance of involving as many stakeholders as possible in the planning process prior to construction and of maintaining flexibility at all times. Careful planning minimizes the need for change orders. Flexibility provides increased opportunities to find alternative solutions to change orders. Ideally the library can work with the architect or the construction contractor to find a compromise solution that will either eliminate the need for a change order or insure that the necessary change will not increase overall project costs. An example of a possible change order would be a modification of access to an elevator. An elevator that is only for library use would not normally have buttons for public access. If the specifications call for buttons instead of key access for an elevator that should be library use only, the removal of such buttons would require a change order.

7. It is essential that construction information be communicated to stakeholders at every opportunity as the project proceeds.

The more information conveyed to stakeholders about possible impacts of construction the better. The more information provided the better users will be prepared to adapt to disruptions like loss of data or power access or excessive noise. It is equally important that employees be kept fully informed since many of them cannot perform their jobs without access to data and/or power. Using as many avenues as possible to communicate construction related information – especially if it will create serious disruption – is crucial. Posters, flyers, web pages, blogs, wikis, e-mails, and instant messages are some of the options for communicating scheduled disruptive construction activities. Since some disruption is caused by unforeseen circumstances, the immediacy of the communications media should be taken into account when unscheduled disruptions occur. It is useful for contact information for responses to questions or concerns to be provided to both users and employees. Personnel at service desks also need to be kept fully informed of what is happening with construction because they will be immediately accessible to users when questions arise.

8. Being prepared to provide information about the project and effective public relations can help make construction a more pleasant experience for employees and users.

In most cases an expansion/renovation project will create a great deal of interest within the community. Ideally the project coordinator or a primary contact should take the lead in providing details about the project. One key to offsetting stress for users and employees is insuring that timely, accurate, and consistent information is provided from the beginning. A lengthy project requires that library employees who might be asked about the project be kept informed. Information shared with employees by the project coordinator/primary contact person through regular meetings, electronic communications, blogs, wikis, and other appropriate media is decisive to clear communication with users.

The project coordinator/primary contact person should also be prepared to respond to requests for interviews and requests for special tours of the construction side and to hold meetings with

interested groups or organizations. In a college or university library, for example, it is not unusual to receive requests not only for interviews from the student newspaper but also from students doing special projects. In a public library there might be requests from civic or government organizations in addition to friends groups. At different points in the project, it may be advisable to provide assistance to the project coordinator/primary contact person. A communications committee or task force can be of considerable assistance in providing project related information to the general community.

9. Coordinating the scheduling of disruptive construction activities to minimize their impact on users and employees is required throughout construction.

If the project coordinator or other library representative regularly attends progress meetings and establishes a good working relationship with the construction company, opportunities to participate in scheduling disruptive activities are greatly improved. Possible disruptions include, but are not limited to, loss of power, loss of data access, loss of lighting, excessive construction noise, and testing of alarm and/or public address systems. Ideally any disruption that affects the entire building can be scheduled when the library is closed to the public. When that is not possible every effort should be made to see that disruption is limited to only certain sections of the building during any given period. For example, if disruptive activities can be limited to one floor at a time, users and employees have the option of moving to another floor to continue their work. Another option is to schedule the work before the library opens or at a time when minimal use is expected. It should be part of the specifications for the project that the library be given a minimum of twenty-four hours notice before particularly disruptive activities are to take place.

10. If the library is continuing to serve the community during expansion/renovation, internal library communications guidelines for interaction with construction workers and representatives of other agencies should be in place before construction begins. The project specifications should include some aspects of communication between workers and library user and employees - particularly harassment or offensive behavior

The library should establish guidelines for communications between library employees and representatives of the companies and/or agencies involved in the expansion/renovation project. Such guidelines help insure that miscommunication does not adversely affect the library, its users, or the project. All library employees should be instructed to refer all communications from those involved in the construction side of the project to the project coordinator or the library's designated representative. If guidelines are not in place or not followed, miscommunication between the library and the construction side may lead to increased disruption and stress for users and employees. The failure of critical information to reach upper level administrators can also lead to misunderstandings between the library and the contractor and/or other agencies. Communication can be particularly challenging because the primary construction contractor may extend its work force through multiple subcontracting firms. The more workers involved in a project the more opportunities there are for miscommunication and misunderstanding.

Some aspects of communication should be addressed in the specifications for the project. Specifications should be checked to insure they include specific requirements preventing

harassment or offensive behavior. Any type of harassment or offensive behavior on the part of construction workers should be forbidden in the specifications. Such actions are never acceptable, but they can lead to displeasure and distress for employees or users who are subjected to them when construction adjoins a functioning library. Any one experiencing harassment or offensive behavior should be encouraged to report the situation immediately to appropriate library personnel. The situation should be immediately reported to the construction contractor. If workers are not identifiable by badges or a similar form of identification, the contractor should be encouraged to provide identification so that any person responsible for subjecting others to harassment or offensive behavior is immediately identifiable. If library personnel work with the contractor to see that this type of behavior is addressed immediately, it should either cease to occur or become rare as the project proceeds.

11. Temporary walls between the construction side and the working library may create challenges at different stages of the project.

Temporary walls between construction and the library are necessary to prevent unauthorized entry into the construction area. Such walls not only keep anyone from accidentally wandering into the hazards of the construction zone but also prevent anyone from getting into the library after hours. The project coordinator or other appropriate library personnel will need to work closely with the architect and the construction contractor to be sure that any required openings within temporary walls can be locked from the library side. For example, if construction workers need regular access to utility closets on the library side, it may be more efficient to provide a door in a temporary wall than requiring workers to leave the construction area and take a long route to get back into the library proper. It is critical to library security that such openings can be controlled from the library side since construction hours and library service hours seldom match exactly.

Eventually temporary walls will need to be removed so that ceilings, flooring, and walls can be finished to match. The library will need to carefully consider how safety and security will be maintained between the two sides after temporary walls are removed. Once the temporary walls are removed, for example, it is more likely construction debris will be tracked on the new carpet on the library side. The nearly finished state of the construction side will tempt both curious employees and users to explore. Whatever barriers are put in place when temporary walls are removed will need to be low enough that no one can crawl under them and high enough that a ladder will be needed to get over them. Neither should they cause any damage to the surfaces that are being finished.

12. Specifications for security camera systems and public directional media should be checked very carefully to insure that they meet the library's current and future needs.

Security cameras are needed in any large library, but specifications should be carefully checked to be sure locations for accompanying monitors are effective and easily viewable by library personnel during all hours the library is open for service. If they are not, the cameras are not useful. Ideally any camera system should include provisions for copies to be easily produced within a reasonable time period. For example, if security cameras record the theft of a valuable

item, the recording is useless unless a copy is available for use by security personnel in identifying those responsible for the theft. It is even more important to include this capacity in case of personal threat or injury for employees or users. Specifications should also be carefully checked to be sure that they call for the most up-to-date media for directional devices and the locations of connections for those devices are the most effective for library purposes. For example, a connection for a form of media such as an analog television for posting announcements might have been current when the specifications were written, but it might be useless by the time the expansion/renovation project is completed.

13. There may be specification areas that need to be monitored throughout construction.

Good architects carefully review construction on a regular basis, but they are not onsite all the time like library employees. Collaboration between the library and the architect can lead to a better project outcome. Any problems that are observed should be brought to the architect's attention at the earliest possible opportunity. If the parent organization has someone onsite regularly, that person should be included in any discussion with the architect. One example would be protection of trees during construction. Trees that are to remain should be designated for protection in project specifications. Different levels of protection may be used by different construction contractors. If weaker protection such as plastic fencing is used, it may require greater supervision than stronger protective materials such as metal fencing. Over time less attention may be paid to this kind of environmental protection by the construction contractor and/or its subcontractors which can lead to damage if not reported immediately after it is discovered.

There may be other areas of concern within the building. Such concerns are more evident if new construction is occupied before the overall project is completed. Motion sensor lighting devices, door hardware and casework hardware are just a few of the items that may require adjustment or replacement once new construction is occupied for the first time. Alarm systems, door locking systems, and loading dock monitoring equipment are others. Their use in new construction can lead to a better understanding of what can be expected. Ideally any potential problems can be addressed without the need for change orders.

Library Expansion/Renovation Checklist: Creating Today's ARC Takes More Than Forty Days and Forty Nights

Chapter VI: After the Forty + Days

1. When the project – or any phase of it - is complete the punch list¹⁴ requires a great deal of time and attention.

Following the completion of any phase of construction, the architect should carefully review every aspect of construction and create a punch list of items that need to be addressed by the construction contractor before final payment can be made. Punch list preparation is an opportunity for the project coordinator or other appropriate library personnel to work closely with the architect. It is not unusual for library employees to notice problems that might be missed by even the most conscientious of architects – especially on a really big project. Problems can emerge only after the building has been in use for weeks or months. If the library has a good working relationship with the architect, there should be plenty of opportunities to offer input for the punch list. It may also be helpful for the project coordinator or other appropriate library personnel to assist the architect in reviewing the punch list after the contractor reports that a specific item has been addressed. It is possible that a subcontractor may not have addressed it to the satisfaction of the library and/or the architect. If the working relationship with the architect is not good, it is best for the library to create its own punch list to compare with the architect's.

There is really nothing in an expanded/renovated building that is not appropriate for the punch list except areas that were not changed or affected in any way during expansion/renovation. Such areas will be rare in a project that is reasonably well funded. Because punch lists are so inclusive it is useful for library employees and anyone else interested in the project to be encouraged to ask questions and report potential problems throughout the project. For example, if the glass in any window looks different from other glass used nearby, it is appropriate to ask if the correct glass has been used. In most cases the architect or someone else monitoring the project will have noticed that kind of discrepancy, but there are thousands of details involved in any expansion/renovation project. Even the most detail oriented architect can miss something. It is also essential that the project coordinator and other library employees not assume something that is incorrect from the library's perspective has been done according to specifications. It is always good to ask questions because that can help prevent minor issues from becoming future problems for the library after the construction contractor and the architect are long gone.

Some difficulties do not become apparent until after shelving and equipment have been moved into place during the late stages of construction. For example, a change order for lowering a soffit or the ceiling might lead to lighting problems if shelving is placed in the area. Ideally everything that is critical to effective library services can be corrected following the punch list process, but there are no guarantees. Some problems may have to be addressed later with funding from the parent organization. An example might be elevators that are not supposed to be

¹⁴ Punch list *n.* chiefly *U.S.* a list of items such as small repairs, unfinished work, etc., that must be completed in order to fulfill a construction contract, typically created at the end of a project. **Oxford English Dictionary**

accessible to the public during some or all hours the library is open. Such elevators would normally include key access so they are not accessible or can be locked off when appropriate. If the key access is not included in the specifications, it should be possible for the elevators to be modified after the project is complete, but that process can be quite expensive.

2. A careful review should be conducted to see if any procedures or services need to be changed and if adaptations need to be made.

During a lengthy project there may be design changes required by unforeseen circumstances or changes in technology and/or trends in library services. If such changes occur, it may be necessary to review original plans for services and/or the planned use of certain areas within the completed building. Some options for change may emerge some time after the building is complete because it will take time for personnel and materials that were in remote locations during construction to be returned to the completed building. For example, an automated retrieval system (ARS) that could not be used exactly as intended during construction may require considerable time and effort to rework it so it meets its original design concept. Most automated retrieval systems are designed to store little used materials. If the ARS was needed for storing medium use materials to keep them accessible during construction and little used materials stored in a remote location, it is not a simple matter to process the little used materials for the ARS and the medium use materials for placement in open stacks. The location for each item must be changed in the catalog, the item must be moved from its current location to its new location, and each item must be checked into or out of the ARS. In a large library that process may take several years to complete. Because the process is both time and staff intensive it may be necessary to place the little used materials in the open stacks and leave medium use materials in the ARS for months or even years. It should be kept in mind that this situation will also greatly increase the activity in the ARS so that it is much more heavily used than it would be if used as designed. This is just one example of the kind of change that may occur between the beginning of the building design and the completion of construction.

3. Another question to be asked is whether or not any service, procedure, or policy needs to be changed because something about the expanded/renovated building is different than expected or preferred.

Even when library personnel are involved at every level of the planning and design process, there can still be some aspects of the project that are not ideal when it is complete. Some simply have to be accepted because they result from codes or other requirements that are beyond the control of both the library and others involved in design and construction. A good example of this would be an original building in which all exits could be locked with a key from the inside so that only authorized personnel could open doors from the inside after hours – providing excellent levels of security if someone tried to hide until after closing. Current fire safety codes prevent doors from being locked with a key from the inside.¹⁵ Providing the same level of building security that was

¹⁵ All codes are nationally developed codes that are adopted by each state, so they are considered State Codes. The primary ones are National Fire Protection Association (NFPA) 101, Life Safety Code, & the International Building Code [IBC]. NFPA 101 primarily relates directly to the safety of the building occupants and the IBC deals primarily with the safety of the building construction itself --- fire, structural, wind, seismic, etc. (Barbara Cogdell, AIA, Cogdell & Mendrala Architects, PC, Savannah, GA)

possible in the original building may be almost impossible without extra staff and special vigilance during closing procedures – especially in a really large building. A more mundane challenge can result from something as simple as the need to display hours at an entrance where the only surface available is reflective glass. If exterior signage was not included in project specifications, finding a solution may be both time consuming and expensive. These are areas in which considerable flexibility and creativity will be required of library personnel involved in providing solutions to unexpected challenges.

4. Any opportunities for new collaborative efforts should be carefully considered.

Some opportunities for collaboration can be included from the beginning of an expansion/renovation project. For example, on a campus where coffee shops or other retail spaces are included in building design, a coffee shop or retail space may be included from the beginning. It should be kept in mind that the original concept in the specifications may change during the project if the space is to be assigned to a non-library entity. In that case the project coordinator or other appropriate library personnel should work closely with representatives of that entity to be sure that the space remains truly collaborative. Changes in design may need to be carefully negotiated among the non-library entity, the library, and the architect to be sure that the modified space meets the needs of both parties without adversely affecting the overall building design. A similar opportunity might be available in a public library – particularly for a coffee shop.

Additional collaborative opportunities may emerge as construction continues or even after it ends. Collaborative ideas may come from within the library or from other units within the parent organization. One of the more common collaborative efforts in today's libraries is between the library and the information technology services division of the parent organization. It is easier if that kind of collaboration is planned from the beginning, but it is possible to add it during or after the end of construction if the design is both flexible and focused on current and future needs. If enough personnel space is available, technology help desk personnel can be housed in the library and services can be provided through shared help desks. Flexibility in design and on the part of planning personnel can expand collaborative opportunities considerably.

Library Expansion/Renovation Checklist: Creating Today's ARC Takes More Than Forty Days and Forty Nights

Chapter VII: What do planners wish they had known in the beginning and how can they help other libraries after the project is complete?

1. What are some things often overlooked during the planning process?

Even in the most carefully planned project with regular contact among librarians, architects, and others involved in construction, there will be portions of the project in which planners wish they had known or understood more about how the design would function once it became reality. Ideally resulting problems or costs will be minimal, but it is important to keep in mind that in spite of everyone's best efforts, no building can perfectly meet everyone's desires or expectations. A sample list of areas that could warrant careful consideration during the early stages of an expansion/renovation plan includes:

Will there be costs for necessary equipment or services not included in the project budget?

For example, the automated retrieval system (ARS) manufacturer provides an extensive list of parts that are highly recommended for purchase when an ARS is installed. An ARS will not work with an integrated library system (ILS) without additional software that must be purchased from the company providing the ILS. The ARS specifications do not usually include bin dividers unless requested by the library nor does it include holders for slim or flimsy items such as pamphlets or small government documents. If an art security system is included in the building design, parts for that system may or may not be included in the project specifications.

Are cost-effective solutions available for modifying areas of the original building for which renovation funding was not included in the expansion/renovation project?

Although the project budget may be flexible enough to allow the majority of the original building to be renovated, it is possible that some areas not included in the original project design cannot be modified within the project budget. In such cases an interior designer may be able to help the library find cost-effective solutions that can be used by the parent organization after the construction project has been completed. For example, restrooms may have been partially updated prior to construction but not completely renovated. If painted walls were not tiled during that update, they may still be susceptible to graffiti. One solution would be the use of a specialty finish that is less expensive than tile but provides a surface that is much less susceptible to graffiti than walls covered with regular paint.

Are elevators designed to meet the needs of current and future library users?

For example, can they be locked off where necessary to prevent public access to secure areas? If an elevator is to be used for the public during one phase but eventually secured from public access, can it be easily converted from publicly accessible to secure without violating fire codes? Are the specifications for motors on all elevators the same? If not, elevators with smaller motors may move so slowly that users complain almost constantly.

This is especially important in areas such as entrances where an elevator and a stair are the only access to upper floors for thousands of users per day.

Are exterior emergency exit doors designed to discourage their regular use as exits?

This is especially important in a large building where the majority of exterior emergency doors are on one floor and the door alarm and monitoring systems are on a different floor. One way to minimize the regular use of emergency doors – even those with strident alarms at each door – is to include delayed-egress locks on each exterior emergency door. Delayed-egress locks meet fire code and prevent an emergency exit door from opening for several seconds after the exit bar is pushed. They can serve as a deterrent for both accidental and intentional use of emergency doors as regular exits in non-emergency situations. Prominently displayed security cameras trained on exits can be another deterrent.

Are there economical, practical solutions when the furniture or equipment budget falls short of expectations and/or need?

For example, a college or university library may be designed for expected enrollment fifteen to twenty years in the future, but enrollment may have reached that projected level by the time the building is complete. Even a well-funded project may not include funds to meet furniture needs for that kind of growth. An interior designer with the architectural firm or the parent organizations can be extremely helpful in finding ways to stretch the furniture budget to include durable, less expensive furniture. The loose equipment budget for a public library may not include all the surfaces needed for projection so that meeting spaces are maximized throughout the building. Presentation wall coverings can be cost effective solution that can make almost any wall a projection space.

Have the architects made every effort to use green building design principles for the project?

Green building design principles are most effective if included from the beginning of a project. If the parent organization has a practice of requiring or encouraging the use of green design principles, it is much easier to include them in a library project. However, if the building is not being designed for eventual LEED (Leadership in Energy and Environmental Design)¹⁶ certification, some green design elements can still be included. Examples include carpet and/or furniture made from recycled materials. The Library Journal Design Institute offers training in green library building design and planning.

Are lighting systems designed so they can be centrally controlled while at the same time being adaptable and environmentally friendly? Are motion sensors used where possible?

In a large building and/or one that is open extended hours, being able to control lighting from a single location can be an important design principle. If lights cannot be centrally controlled, managing lights at opening and closing can be both staff and time intensive. However, a single control can be a disadvantage both from an economic and an environmental perspective. Ideally lighting systems should be designed so that there is a

¹⁶ More information about LEED certification and green design principles is available from the U.S. Green Building Council at <http://www.usgbc.org/Default.aspx> .

central control for lights for each floor so that lights can be turned off when not needed. An equally important design feature that should be used in offices and smaller public spaces is motion sensor lights. The use of such sensors is helpful from both a budgetary and an environmental standpoint.

Are loading docks and other delivery areas designed to meet the needs of the library as it has been functioning and is expected to function in the future?

Even an architect who is experienced in library design may not know how delivery areas should be designed for day to day library operations. Neither is the design of these areas always included in discussions of library needs before the design process begins. For example, an architect may design a loading dock area that is perfect for deliveries by semi or other large trucks but less than practical for daily mail or vending deliveries. A loading dock without a ramp to facilitate smaller deliveries may not be as effective for even a relatively large library as one with a ramp.

Are signage systems designed to meet both internal and external communications needs?

It should not be assumed that building specifications will include display units for the display of such library communications as hours, special events, etc. In some cases internal signs may be carefully specified while external signs are not even mentioned. Another point for review is whether or not the parent organization has a building signage manual required for use in all building designs. Omission of all or part of the signage systems necessary to effective library service can lead to expense for the library and frustration and/or confusion on the part of users. For example, if the primary entrance to the building is a multi-story glass atrium, it may be difficult to find a reasonably priced means to effectively display information in a way that compliments rather than mars the glass entrance. If a signage system is specified in detail at the beginning of the project, it is still important to ask questions about how the signs will be created and how easily they can be changed and replaced. The responses to those questions will help in estimating the cost of maintaining the system. If exterior glass is reflective glass, it is important to insure that exterior signage has been planned to meet all the library's needs. Signs cannot be read through reflective glass.

2. How can other libraries or units within the parent organization be helped after the project is complete?

During the various stages of construction and when the expansion/renovation project is complete, there may be a number of ways in which help can be provided to other libraries in the state and/or region. In many cases, the project coordinator or person(s) with similar responsibilities would be in the best position to offer assistance. However, that is not necessarily the case for a project with special features like an automated retrieval system (ARS). During the preparation for the installation of an ARS, library personnel may receive considerable help from other libraries with similar systems. When the project is complete, they may have ample opportunity to share their expertise with other libraries – sometimes in new ways. For example, the head of Access Services at Georgia Southern University's library who has primary responsibility for regular support of the ARS established an online discussion group for libraries that have or are planning installations of similar systems.

Inquiries may be received from other libraries from the time a specific ARS is included in the project specifications and that information becomes publicly available. Most will be electronic, but a good many may also lead to visits and detailed tours.

When a project design includes an ARS, all of the shelving used in the original building may not be needed when construction is complete. When that is the case, there may be an opportunity to give or sell extra shelving units to other libraries. If that possibility is being considered it will be important to work closely with those in the parent organization responsible for inventory and redistribution of furniture and equipment. If furniture was placed in storage during construction that is not needed in the completed building, it may also be available to other units within the parent organization or to other libraries.

Library Renovation and/or Addition Checklist: Creating Today's ARC Takes More Than Forty Days and Forty Nights

Appendix I Automated Retrieval System (ARS or ARC)

What is the ARC?

In June 1998, Georgia Southern University proposed a library expansion/renovation of the Zach S. Henderson library to the Board of Regents of the University System of Georgia. The approval of that proposal led to a project that was completed at the end of 2008. The library expansion/renovation almost doubled the size of the original building constructed in 1975-1976. The expanded/renovated building includes more than 231,000 square feet for an increase of more than 122,000 square feet. The unique feature of this building for its area is an automated retrieval system (ARS) that provides space for the ARC to which the title refers. ARC is the acronym for an automated retrieval collection. When planning for the building project began, the official term for the new system was Automated Storage and Retrieval System (ASRS). Following advice from other libraries, Georgia Southern chose to drop the term "storage" early in the process since that word can strike fear into the hearts of faculty and other researchers. By the time the project was well under way, the general term had become Automated Retrieval System (ARS). The ARC allows materials that are used less often to be stored within the expanded building in the same type of high density storage used at California State University Northridge, Eastern Michigan University, Sonoma State University, the University of Nevada, Las Vegas, and a number of other libraries. As completed in 2008, the Georgia Southern ARC is a two aisle system with a capacity of approximately 800,000 items. There is room for a third aisle, and when that aisle is added the total capacity will be approximately 1.2 million items.

Why was an automated retrieval system (ARS) chosen?

When the building program design process began for the expansion/renovation, the library consultants for the architects for that phase of the project began reviewing options for maximizing shelving capacity in the planned expansion/renovation of a building that had housed growing collections for more than thirty years. Periodicals published before 1971 and other periodicals were already being stored in non-public areas so the need to expand growth space was considerable. The program design offered several options for growth space. The two that seemed most appropriate were compact shelving and an automated retrieval system. The cost comparisons provided by the consultants were as follows:

Traditional shelving costs \$20 to \$40 per book, compact shelving costs \$10 per book, and high density storage costs \$1 per book and \$5 for the equipment for a total of \$6.¹⁷

1,000 books x \$6 = \$6,000 ARC storage

1,000 books x \$20 - \$40 = \$20,000 - \$40,000 traditional shelving

¹⁷ Aaron Cohen workshop, San Francisco, July 2001.

When the consultants completed their inspection of the library, they determined that the only floor strong enough to support compact shelving was the first floor.¹⁸ When review of the program design was complete, the decision was made to include an automated retrieval system in the building design.¹⁹

What are some advantages to an ARS?

Because high use materials are in open stacks and less used materials are in the ARS, users find access to information more convenient.

Existing and expanded library space can be configured as "flexible space" for users.

The amount of user seating can be increased which is an important part of current library design which focuses more on space for people than space for collections.

Items stored in an ARS are retrievable in five to fifteen minutes depending on how heavily used the system is. This is a considerably shorter turnaround time than that required for materials stored in a remote location.

Requests for items stored in the ARS can be submitted from any computer with access to the local network used by the library

What are some disadvantages to an ARS?

Costs for extra parts are considerable and there are additional costs for annual maintenance contracts.

Processing large portions of collections for storage in the ARS is both time and staff intensive.

Portions of the collections stored in the ARS are not as accessible for browsing as they are when stored on traditional shelving.²⁰

What are some of the staffing implications?

The library or the parent organization will need to provide a person or persons trained to provide mechanical support as needed.

Library personnel must be trained to process cataloging records to reflect storage in the ARS.

Library personnel must be trained to maintain the software for the ARS and software for the library's ILS (integrated library system) and to insure the two remain compatible.

Library personnel must be trained to regularly store items in and retrieve items from the ARS.

Library personnel providing ARS service should be available during all hours the library is open.

¹⁸ At that time, it was not possible to modify existing flooring to increase the load bearing capacity to support compact shelving.

¹⁹ The program design and the building design were created by two different architectural firms.

²⁰ The usual response to users' questions about browsing from libraries with automated retrieval systems is to remind users that the number of items requested from the ARS is not limited nor are they required to check out every item retrieved from the ARS. As electronic access to book contents continues to increase, this may become of less concern over time.

Other commonly asked questions:

What are some of the long-range implications of an ARS?

An ARS with space for additional aisles can insure that in twenty or thirty years an aisle can be added instead of an addition being built. User space can continue to expand as more and more collections are stored in the ARS.

What if the system goes down?

If the system goes down, it can usually be brought back up in less than twenty-four hours so retrieval time for materials is still less than the average time needed for retrieving materials from remote storage.

What are some facts and figures for the ARC at Georgia Southern?

How do the retrieving machines operate?

When a user wants a book that is in the ARC, (s)he places a request through the library's integrated library system (ILS). That system sends the request to the ARC computer. The ARC software locates the bin in which the item is stored and tells the crane to pull that bin and deliver it to the nearest workstation. A library employee pulls the item from the bin. A receipt for the item is printed by a printer at the workstation, and the employee places the receipt in the book so it can be delivered to the requesting user. Books can be requested from any computer that is on the campus network. Periodicals and audiovisual items must be requested from computers in the library, but periodicals do not circulate so they have to be used in the library anyway.

What are the dimensions (height, width, depth) of the individual bins?

The bins are 24 inches wide by 48 inches long, and they are 6, 10, 12, 14 and 18 inches high. Books are loaded standing up just like on library shelves, and those heights accommodate the library collections from the small microfilm box to large "oversize" books.

What are the dimensions of each aisle of bins? (X feet high and X feet long, for example)

There are two aisles. Each aisle has a crane that runs on a rail and has a capacity of 750 pounds. Each aisle has two workstations so that the crane can pull bins from both the left and the right side of the aisle. The ARC is 45 feet high, 26.5 feet wide, and approximately 98.5 feet long. Each aisle is 34 bins high and 43 bins wide for a total of 5,848 bins. Each bin has a live load capacity of 500 pounds. The total ARC capacity is approximately 800,000 items

How wide and how long are the rails?

The crane rails look just like railroad rails. They are 112.5 feet long and they are the 3.5 inches wide at the base and 1 7/8 wide at the top.

Library Expansion/Renovation Checklist: Creating Today's ARC Takes More Than Forty Days and Forty Nights

Appendix II: Options for Moving and Movers

Overview

Moving can be relatively simple or extremely complex. This addendum is designed to give a brief guide to moving collections, furniture, equipment, etc., using several different methods. The method chosen should take into account library service requirements, available funding, the size of the move, time limitations or externally imposed deadlines, and necessary coordination. If no one in the library or parent organization has experience moving library collections, hiring a consultant or asking advice of colleagues from other libraries would make the process smoother and less stressful.

If all or part of the library will remain open for service during the move(s), planning will require much more attention to detail. Moving while a library is open can be extremely disruptive and should – whenever possible - be planned for times when service needs are lowest. Careful consideration should be given to maintaining safety and security for employees, users, and moving personnel at all times. If entrances are going to be blocked at various times, alternative entrances and routes to them should be clearly marked in as many places as possible.

Funding is a critical factor in planning any move. Hiring experienced library movers²¹ is the ideal solution for a large and/or complex move, but it can also be very expensive. In such cases, library administrators may be required to make a strong case for the importance of providing funding for hiring an outside firm – especially if the parent organization has access to movers without experience moving library collections. For example, if the library has had assistance from movers who are employees of the parent organization, it may be helpful to refer to outside movers as professional library movers instead of referring to them as professional movers. Persons who make their living as movers naturally consider themselves professional movers. When the case has been made and funding has been provided, appropriate library personnel will need to work closely with funding personnel to be sure that funds are used appropriately. If funding is not available, moves should be planned very carefully to be sure that they do overload library personnel and others involved in the process. More details for such moves are provided below.

Moving a small collection within a building is much different from moving portions of a large collection to multiple locations during a construction project that lasts several years. For example, moving a small periodical collection from one floor to another can usually be accomplished by a few people in a week or two. Moving portions of a collection of a half million items from one side of a building to the other and to remote storage sites takes longer even with

²¹ Care should be taken to refer to experienced library movers and moving companies instead of simply referring to movers and moving companies. Most moving companies do not have the experience required for a successful library move.

more people. Constraints are further imposed by availability of moving equipment and ease of access between locations. Plans must take all these factors into account.

Time limitations or externally imposed deadlines can make moves even more challenging. Time limitations can occur when a local agency is assisting with a move and it has a limited amount of time available. They can also occur in an academic setting when a move must be completed before the beginning of a new term. Externally imposed deadlines can include the scheduled demolition of a remote storage location or the loss of a lease on a remote storage location. In such cases plans must be made starting with the deadline and working backward.

Necessary coordination can be at a number of different levels. The most basic coordination is with the construction time line. Minimally the building must be close to completion before any one is allowed to install shelving. Another area of coordination may be with furniture and/or equipment deliveries. Such coordination is heavily dependent on loading dock scheduling and flexibility and cooperation on the part of vendors. It may also require flexibility on the part of library employees who need to assist with access to restricted areas such as gated lots and non-public entrances.

Who can move collections?

1. Volunteers ²²

Volunteers can be recruited from among library employees and the community. For example, a campus volunteer effort could include faculty, staff, and students in addition to library employees. Organizations can be recruited to provide special services that serve as incentives for volunteers. For example, a friends group might provide light snacks in addition to volunteers to move collections.

Volunteers can be a big help if collections are being moved from one part of a building to another or a short distance that can be traveled safely. Volunteers can move via book carts,²³ shelf holders, or boxes (see details below).

Volunteers can move collections from floor to floor or section to section within the library or they can move them from one building to another if the distance is relatively short, the weather permits, and enough library personnel are available at each location to oversee the process and be sure materials are reshelved in order whenever possible.

2. Library moving companies

When funding is available, the first step in hiring a library moving company is careful preparation of the bid specifications. If another unit within the parent organization is responsible for overseeing the bid process, the ideal situation would be one in which appropriate library

²²It is advisable to require each non-library employee to sign a waiver releasing the library from responsibility.

²³ It is best to use the term “book cart” instead of “book truck” to prevent confusion with vehicles (trucks) that may also be used in the moving process.

personnel write the specifications for the move so that they can be pasted into the standard bid forms. That type of collaboration is second only to the library's having complete control of the bid process. The bid specifications should include lengthy details of what is to be moved where – including furniture and equipment if needed, details for any shelving that is to be disassembled or reassembled in multiple locations, when the move should occur and end, who will provide moving equipment, and who will be responsible for shelving layout²⁴ and distribution of collections within that layout. (See sample partial bid specification below.)

A mandatory pre-bid meeting is the first step in insuring that the most qualified bidder can be selected for the project. The pre-bid meeting usually includes a description of the specifications for the move, a question and answer period, and tours of all locations involved in the bid. In a complex library move, it is not unusual for companies to drop out of the bid process once they have attended the pre-bid meeting and learned what is involved. Once the bids have been received, it is important for the library to participate in the bid screening process if it does not have complete control of the bid process. The same carefully prepared set of questions appropriate to the specific move should be used in interviewing references for each company that has submitted a bid. (See sample below.) It is also helpful to talk with librarians in the region who have used the company and to post queries to Movlibs or similar electronic networks.

Following the steps outlined above should insure that a reputable library moving company is awarded the bid. If there are any concerns about the company with the lowest bid, additional interviews should be held to address those concerns. It should be kept in mind that in a lengthy project, the library may work with two or three different moving companies. Once the actual move begins the project coordinator or other appropriate library personnel should meet daily with the project supervisor for the moving company. Library employees should be encouraged to immediately report any concerns they have about the move as it proceeds. When the move is complete, a punch list should be created for the move, and the moving company should see that all items on the punch list are addressed before the final bill is paid.

3. A combination of volunteers and a moving company or companies

If a project consists of multiple phases lasting several years and multiple locations, it may be necessary to use a combination of volunteers and moving companies. Such circumstances require flexibility on the part of both library and moving company personnel. For example, if materials need to be moved to an automated retrieval system (ARS) and funding is not available to hire an experienced library moving company to process materials for storage in the ARS, the best solution is to recruit volunteers from library employees to move and process those materials. Training for ARS processing is too expensive and time intensive to make it efficient to recruit non-library employees as volunteers. It may also be necessary for library employee volunteers to move or relocate small portions of collections to free shelving needing disassembly and reassembly by a moving company.

²⁴ No matter who prepares the layout, it should be double checked to be sure materials do not have to be moved more than once since multiple moves greatly increase cost. Within the layout shelving heights must be carefully checked near sprinkler heads to insure they do not violate fire codes. Failure to check heights can be another costly mistake.

How can collections be moved?

Methods for moving collections vary from very simple to fairly complicated. Examples include:

By shelf: If a relatively small collection needs to be moved a short distance from one building to another building, books can be placed on shelf length carriers and walked from one location to another. Carriers can be made with wood or other strong, light weight material with handles at each end. Two people can carry each shelf from location to location under library supervision. This method works best in moderate climates in dry weather.

By bundle: Another method for a small collection is to tie the books in bundles, label them, and hire a moving company to move the bundles. (This method does not necessarily require experienced library movers if library personnel are thoroughly familiar with how it works.) When the books have been shelved in their new location, the strings can be cut and easily removed.

By book carts: One of the simplest moving methods for moving collections - one that helps keep materials in order - is to load them to book carts, number the carts, keep the carts in order, and roll them from area to area with a single building or over short distances between buildings. For greater distances, carts can be loaded on trucks ranging in size from a large flatbed truck to a large moving truck. Trucks of a larger size make the carts very difficult to control. This method is most effective if materials are shrink wrapped as soon as they are loaded on carts. If volunteers or other non-library employees are loading and unloading carts, library personnel should be available at both origination and destination points to be sure the materials are kept in order. This is especially important when moves occur when the library is open for service and access to collections must be maintained.

By specially designed moving carts: Some moving companies use specially designed one-sided shelf-width carts to move collections, and some libraries have had these types of carts built for use in moving collections. The moving process for these carts is basically the same as described above for moving with book carts. Depending on the material used to construct them, specially designed carts may be heavier than book carts and may be more difficult to move from place to place. Ordering carts to be built is an expense that should be carefully weighed against other possible moving methods. This method keeps materials in order.

By large boxes on dollies: Another moving company method is to construct a cardboard shelf in the top of a large cardboard box and mount the box on a flat square dolly. The shelf should be deep enough to allow books to be placed face down in order. Because these units are made of cardboard they are not as heavy as the specially designed carts, but they have a fairly large capacity and require a good bit of strength to move from place to place. This method keeps materials in order.

By loading into small boxes: Books can be loaded into small boxes that can be lifted without risking back injury. Unless the boxes are specially designed for library moves, it is difficult to keep collections in order while maximizing the space available within the box. However, it is a

very good method for storing gift books and/or portions of collections that may be weeded instead of being returned to open stacks.

SAMPLE BID SPECIFICATION

(Library portions of the document are in blue.)

INVITATION TO BID SPECIFICATIONS AND INSTRUCTIONS TO BIDDERS GEORGIA SOUTHERN UNIVERSITY HENDERSON LIBRARY MOVE BID

Scope of Work:

Georgia Southern University, hereinafter called "GSU", is soliciting bids for a vendor to relocate the Henderson Library/stacks /storage, office furniture, office and public computers, and art collection to a renovated/expanded portion of the library, hereinafter called "REN," from one off-campus storage location and one on-campus location and the relocation of shelving, collections and furniture from the portion of the library currently in use, hereinafter called "LIB," to the REN. Work will include, but is not limited to, breaking down shelving at existing locations, moving and re-assembly at new locations for immediate use. This relocation includes movement of Library office equipment (including computers), office furniture and files, public computers, and the relocation of existing public furniture to new locations. See Appendix B for a list of furniture items to be moved. A critical part of the project will be the coordination of delivery and installation of existing furniture and shelving with the delivery and installation of new furniture by other companies during the same time period. That coordination may include separation of jobs by floor and/or delivery site. Collections and shelving, office equipment (including computers), and office furniture and files will be relocated from the on-campus location to the first and second floor of the REN. The art collection will be delivered to the LIB, but it will not be installed.

LIB has three (3) floors and REN has four (4) floors. The REN will be turned over to the university for occupancy on August 19, 2008. However, shelving and collections must be moved prior to this date to accommodate follow-on work. A schedule of those dates can be found in Appendix A. Elevators are available to all floors in LIB and REN.

Relocation will be accomplished in two (2) phases:

Phase I will involve relocation of volumes, shelving, boxed materials and furniture that are currently stored in the off-campus location to the REN. This will involve the relocation of approximately 250,000 volumes from the off-campus location in call number order and those volumes being placed on shelves in call number order on third and fourth floors of the REN. It will also involve the relocation of approximately 11,000 linear feet of government documents from the off-campus location in Superintendent of Documents (SUDOC) call number order and those volumes being placed on shelves in SUDOC call number order on first floor of the REN. Phase I will also include relocation of approximately fourteen hundred ninety-two (1492) standard double face sections of library shelving and thirty-two (32) double face sections of current periodical shelving from the off-campus location to the REN. It will include the

installation of these shelving units for immediate use beginning with the relocation of existing empty shelves from the off-campus location. Phase I will include the relocation of identified furniture from the off-campus location to the REN. Existing furniture identified on the attached list, Appendix B, will be moved from the off-campus location. Public and office computers will be moved from all floors of LIB to all floors of REN. All boxed materials must be moved and placed in designated areas so that markings are easily visible and readable. Collections and shelving, office equipment (including computers), and office furniture and files will be relocated from LIB and/or the on-campus location to the first and second floor of the REN. If this phase cannot be completed before September 8, remaining work will be moved to phase II.

Phase II will not begin until after September 19 and will involve completion of phase I and relocation of volumes, shelving, and furniture from the first, second and third floors of the LIB to the first, second, third and fourth floors of the REN. This additional work will involve the relocation of approximately 22,260 linear feet of books and periodicals from the second and third floors of the LIB to the first, second, third, and fourth floors of the REN. It will also involve the disassembly and removal of approximately 530 double face sections of shelving from the second and third floors of the LIB and delivery to a specified offsite location. Furniture identified on the attached list, Appendix B, will also be moved from the first, second and third floors of the LIB to the first, second, third, and fourth floors of the REN.

THE ORDER OF THESE TWO PHASES IS SUBJECT TO CHANGE, DEPENDING UPON THE DATE OF THE AVAILABILITY OF THE RENOVATED PORTION OF THE LIBRARY.

Move Schedule

This move is anticipated to begin on August 4, 2008. The move must be **completed not later than December 11, 2008**. GSU will notify the successful bidder of any changes in the schedule as soon as they are identified. No allowance will be extended to the contractor for the stoppage or suspension of work except as provided herein. If a stoppage or suspension is due to the fault of GSU, GSU will allow an extension of time corresponding to the stoppage or suspension.

MANDATORY PRE-BID MEETING:

A Mandatory Pre-Bid Meeting is scheduled for **?** to allow prospective bidders the opportunity to examine the current facilities. Bidders should report to the **Henderson Library, Room 1300** at this time.

Items to be Moved:

Microfilm and microfiche materials that are housed in existing microform cabinets shall be moved by the Contractor in the cabinets in which they are housed, unless otherwise specified. Contents will be secured so that they are not disarranged by the move.

Library Collection: Approximate size:

Books and Periodicals = approximately 480,088 volumes plus approximately 745,000 government documents

Additional materials to be removed from their current locations and placed in the REN include unbound periodicals.

See attached list of furniture and other items attached.

Shelving/Tagging/Padding:

The Contractor will be responsible for protecting from damage any elevators, hallways, floors, stairways, windows and windowsills used in the move. The Contractor must protect all surfaces within the LIB and REN. The buildings and its furnishings must not be damaged in any way and if damaged, will be repaired by the GSU and the cost of such repair will be deducted from the Contractor's payment. The utmost care shall be taken to prevent damage to the entire facility (LIB and REN) and its furnishings. The authorized representative of the Library reserves the right to determine the adequacy of the protection being provided in either building by the Contractor and to negotiate additional protection in any location as may be warranted in his/her judgment. The Contractor shall at all times, keep the premises clean from the accumulation of waste material caused by work or employees. All job sites shall be cleaned up and accumulated debris disposed of daily.

References:

Contractors are required to furnish a list of all library moves completed within the last five (5) years. Bidders are required to have successfully completed five (5) or more sizeable (i.e. 100,000 volume or more) library moving operations within the past five (5) years. List the name, address, and telephone number of the library and person(s) to be contacted at these libraries. References for work completed more than five (5) years ago will not be contacted.

SAMPLE BID QUESTIONNAIRE

GEORGIA SOUTHERN UNIVERSITY

Bid Number _____

Relocation of Henderson Library

Telephone Reference Check for

Company: _____

Reference contacted: _____ Phone _____

Library: _____

Type of Project: _____

Number and type of volumes moved: _____

Types of locations moved to and from: _____

Types of equipment used to move books: _____

Quality of work: _____

Supervision: _____

Workers: (locally hired or brought from home office?) _____

Strong Points:

Problems:

Would you use this vendor again?:

Library Expansion/Renovation Checklist: Creating Today's ARC Takes More Than Forty Days and Forty Nights

Appendix III: Potential Duties of a Project Coordinator

Potential duties of a project coordinator may include but are not limited to the following:

Helping assure the library's needs and concerns are consistently emphasized and communicated to appropriate individuals and groups throughout the project

Developing an effective working relationship with building planners in the larger organization to which the library belongs

Attending any meetings where the building project will be discussed – particularly construction progress meetings

Maintaining direct contact with the library's primary contact in the architectural firm

Raising library concerns with the architect throughout the planning and design of the project

Determining to which architectural firm to questions or external inquiries should be directed if more than one firm is involved in designing the building

Reviewing carefully project specifications that address library critical installations such as alarm systems, security systems, communications systems, power and data access sufficient to support current and future services, and special installations like automated retrieval systems

Bridging differences in the approaches taken by different architectural firms when they interact with library personnel

Asking questions of the architect and the construction contractor to prevent minor issues from becoming future problems for the library after the construction contractor and the architect are long gone

Using unexpected challenges such as water intrusions or the unforeseen presence of asbestos in fixtures as an opportunity to increase communication and cooperation with the construction contractor and/or other agencies involved in the project

Coordinating communications between the library and the construction contractor, subcontractors, and/or other agencies involved in the project

Being constantly aware of the need to maintain personal and collection security throughout the building during all phases of the project

Serving on or functioning as a resource person for library planning committees throughout the project

Sharing agendas for and meeting notes from construction progress meetings and other meetings with library personnel as appropriate and responding to questions and comments about those documents

Keeping project specifications and plans in an easily accessible location for review by library personnel and other interested parties

Providing regular building updates that inform employees and users about scheduled activities that will cause disruption of services or rerouting of building access and egress

Contributing to the improvement of morale during construction by regularly expressing appreciation to employees for their patience and tolerance with such stressful construction factors as excessive noise and disruption from power and data outages

Accepting and responding to design suggestions received from stakeholders – including those submitted via building feedback forms – and serving as a primary contact person for the project

Working with representatives of collaborating entities to be sure that the space designated for them remain truly collaborative

Responding to requests for interviews and requests for special tours of the construction site and holding meetings with interested community groups or organizations

Insuring accurate information is provided to upper level administrators needing information about the project for presentations about the library on behalf of the parent organization

Coordinating maintenance and repair of portions of the building not under construction with maintenance personnel if the building is open to the community for service during construction

Determining during a multiphase project whether a maintenance problem should be reported to maintenance personnel or to the construction company

Determining during a multiphase project what is under warranty and what is not through discussion among library, maintenance, and construction company personnel.

Coordinating the separation of public areas and construction areas when construction workers are not present with public safety personnel

Coordinating the work of fire safety personnel responsible for other safety issues during the project

Coordinating the work of any third party companies - such as companies delivering furniture and/or equipment and/or library moving companies - with the work of the construction contractor

Working closely with the architect and others as appropriate to be sure that any areas of concern for the library are adequately addressed in project punch lists – including after the contractor has reported the item has been addressed