

SPACE PLANNING SIMPLIFIED

Modified from: Linda Demmers, Space Planning and the Building Program, in Electronic Learning Resource Centers: Guidelines, Planning, Examples. LRACCC. 1997.

In many building projects, the same consultant produces the building program and the space plan. This individual or firm will have the most detailed knowledge of your project, you, the client, and your program requirements. The building program consultant will help you to define the problem statements and calculate growth statistics for collections, reader spaces, and staff requirements, as well as alternate means of service delivery.

The most critical first steps are to define the project goals and objectives; identify all potential tenants of the facility; and identify all planning participants, key decision-makers, and method for planning participation. A building consultant will coordinate and document users' meetings of individuals, departments, or divisions.

Examples of divisions might reflect your own organizational structure, or planned future structure; e.g., stacks and readers; technical services and systems; reference and instructional services; access services, staff and auxiliary patron services; archives, special collections, and rare books; or academic and library computing services.

The programming consultant will define and describe each individual space in the facility using a format, such as the area attribute sheet. This will not only determine the space requirement, but also begin to assemble a body of knowledge about the space including the following requirements:

- Adjacency requirements
- Space requirements
- Lighting requirements
- Security requirements
- Power and data requirements
- Heating, ventilating, and air conditioning requirements
- Shelving requirements
- Reader seats (Tables, carrels, chairs, built-in's)
- Staff workstations
- Electronic workstations
- File cabinets
- Whiteboards, tackable surfaces, and projection screens
- Display requirements
- Plumbing requirements
- Floor, wall and window treatments
- Equipment
- Casework

Each area or room in the building plan will then be defined in terms of assignable square feet. To this is added a mark-up of non-assignable square feet for a total gross square foot building requirement. Libraries and learning resource centers are typically 65 to 75% efficient, which means they require a mark-up of 25 to 35% for non-assignable space. This non-assignable space will include elevators, stairwells, corridors, toilet rooms, storage, a general circulation allowance, and in most projects, the lobby, as well.

A good space plan will build upon the base of information developed during the programming phase and will be tested during the schematic design phase with the introduction of furniture onto the plans. However, a simplified space plan can often be developed to ascertain an approximate size for the project.

Space Planning Simplified

Identify the following:

- ❖ Number of volumes to be housed
 - Calculate 10 to 15 volumes per square foot based on type of materials
- ❖ Number and type of media to be housed
 - Calculate square foot allocation based on media type and how stored
- ❖ Number of general reader seats
 - Multiply by 25 to 30 square feet per seat
- ❖ Number of electronic workstations
 - Multiply by 35 to 45 depending on type, less for quick use "dumb terminals"
- ❖ Supporting equipment (printers, copiers, etc.)
 - Add approximately 45 square feet per copier or printer
- ❖ Public service desks, number of positions
 - Calculate circulation desks at 150 square feet per service point; reference slightly less
- ❖ Number of offices
 - Add 120 to 140 square feet per private office; 70 - 100 square feet per landscaped office unit

Reference/Information Services	Quantity	ASF per unit	Total ASF
Reference services desk station (stations plus materials)	4	150	600
Reference collections	6,000	0.10	600
Reference seating	50	27.5	1,375
Miscellaneous reference: Atlas, Dictionary stands, files			150
Vertical File cabinets	4	20	80
Index tables	4	150	600
Group Study Rooms	8	150	1,200
Electronic workstations, OPAC's, Microfilm readers	35	37.5	1312.5
Express workstations	5	25	125
Sub-total Information Services			6042.50

Simple space plan for Reference & Information Services

A more detailed space plan will explore the many decisions, which must be made during this stage of the planning process. These discussion areas will include Collections, Patron Space, Staff workstations, and Technology.

I. COLLECTIONS

Space planning guidelines recommend 10 to 15 volumes per square foot for circulating collections. Volume capacity for a full height double-faced unit of shelving is between 250 and 336 volumes. Design capacity for shelving is calculated at 8 volumes to the linear foot of shelf with approximately 25 -30% of the shelf left empty for collection management, shelving, and introduction of multiple volume sets.

With the recent introduction of compact shelving into publicly accessible collections (more efficient space use), wider aisle requirements (less efficient space use), desire for lower shelving units in areas such as reference and periodicals (less efficient space use), and Americans with Disabilities Act requirements (less efficient space use) planning for collections has become more complicated than across the board allocations. A good space plan will examine each collection independently and allocate space according to the goals for storing and accessing that particular collection. More libraries are opting for little to no growth of reference print collections, with fuller shelves on opening day; growth space for ten to fifteen years of circulating collections; and denser storage such as compact shelving for less used collections such as bound journals, archives, or government documents.

Using the library's collections as an example illustrates the kind of information gathered during the programming phase, which will then be used to develop the space plan.

I.A. Collection Types

You will need to identify the various collections the library will be housing in the future building. Some of these might be:

- A. Circulating collections
- B. Reference collections
- C. Reserve collections
- D. Non-print collections
- E. Special or archival collections
- F. Electronic collections

I.B. Collection sizes

You will need to project the size of each collection and determine what method you will use to determine the size. Are you planning based on a state or local guideline or on a twenty year planning cycle, or are you planning based on a fixed budget for building construction which will determine how large your collections grow?

- A. Number of years in planning cycle or use of state guidelines
- B. Annual acquisitions or no net growth
- C. Changes in program, services or demographics
- D. Co-operative arrangements
- E. Electronic information sources, alternate formats

I.C. Methods of storage

You will need to determine how each of these collections is stored and where that storage is located.

- A. Open stacks, static shelving
- B. Open stacks, compact shelving
- C. Closed stacks, static shelving
- D. Closed stacks, compact shelving
- E. Display shelving
- F. Remote or off-site storage (See 3 a, b, c, d above)

Note: Although 10 to 15 volumes per square foot is a common space planning guideline, reference collections require more space and closed collections can frequently be housed more efficiently. Compact shelving is generally 200 to 250% more efficient than static shelving. Stacks mixed with reader seats provide greater space efficiency for both since they share aisles.

I.D. Stack specifications

You will need to discuss stack specifications and locations including:

- A. Height and depth of shelving appropriate to collection
- B. Aisle width. Will your stacks meet disabled access requirements?
- C. End panels, canopy tops, specialty shelving
- D. Signage
- E. Re-shelving areas. Have you allocated enough space both at circulation and in stack areas for end of the semester returns?
- F. Organization of stack areas. Are stacks and readers mixed or separated?
- G. Stack lighting. Is the stack lighting ceiling or stack mounted? What will your future flexibility for reorganization?
- H. Sprinklers, e.g., how high is the ceiling in the area, how high can your shelving be to accommodate the needed clearance for sprinkler heads

Note: Lower shelves decrease space utilization but address a number of other issues, including security issues. Alternating low and high shelving units in reference areas has become an effective way to provide reference tops in lieu of index tables, but decreases shelving space by approximately 30%.

I.E. Collections, Miscellaneous information

Other issues related to calculating collection space include the following:

- A. Remote storage, identification and retrieval procedure. Has part of your collection been identified for remote storage? Have you planned space for pick and return of these materials at both ends of the delivery process?

- B. Electronic information (see Technology) including: location and type electronic workstations, power and data requirements and infrastructure improvements, systems support, printing facilities, staff training, software and hardware budgets, integration of print and non-print materials.
- C. Security in stack area
- D. Movement of materials from circulation desk to reshelving or stack areas, book return to circulation desk, etc., materials processing, circulation workroom
- E. Inventory control system
- F. Disabled accessibility

II. PATRON SPACE

The accommodations offered patrons could greatly affect the final space plan for a building. For example, if a library only offers seating at tables for six or eight (which are not currently recommended), then the per patron seat allocation can be as low as 22 to 25 per square feet per seat. If each seat is at a fully wired electronic, or electronic-ready, workstation with room for a machine as well as a writing surface, then the square foot allocation of 35 to 45 square feet is required. In a building seating 1,200, this can be the difference between 54,000 assignable square feet and 26,400 square feet.

Again, ideally the process would involve a full discussion of the following:

II.A. Quantity

You will need to determine how many reader seats (user workstations) should the library accommodate. The number can be derived any number of ways including the following:

- A. Determined by state guidelines
- B. Determined by ACRL or other guidelines
- C. Specific institutional requirement
- D. Or, programmed from the "left-over" space after everything else in the program is accommodated

II.B. Type

You will need to determine what are the type and variety of these workstations, including the following:

- A. Electronic workstations (35 to 45 assignable square feet)
- B. Lounge seating (30 to 40 assignable square feet)
- C. Collaborative workstations (45 to 60 assignable square feet)
- D. Oversized study carrels (40 to 45 assignable square feet)
- E. Reader tables (20 to 30 assignable square feet)
- F. Group study rooms (25 to 30 assignable square feet)

II. C. Location

You will need to determine where these workstations/reader seats will be located. As the size requirements for individual clusters is determined, a number of seats will need to be allocated to each. For example, you may currently have several

hundred seats in the reference room simply because this is the only space available in the building for seats. This seating may not be an actual program requirement for reference services and given a *tabula rasa*, the department might require substantially less seating.

As noted in the sample space plan above, the reference department has five varieties of seating: table seating, index table seating, electronic workstation seating, group study seating, and express workstations. Each of these is calculated using a different multiplier. In fact, each of these is calculated differently in reference than in another part of the building because of the high degree of staff-patron and patron-patron interaction, requiring more space for movement through the space and for collaborative activity.

III. STAFF WORKSTATIONS

Staff accommodations can account for between 12% and 25% of the total building space. Frequently staff participates in the discussions regarding their workspace and just as frequently there are guidelines in place dictating how much space of which type can be allocated for each employee by classification of employment. In either case you will need to determine the following:

III. A. Quantity and classification

You will need to determine the number and job classification of full time and part-time staff as well as task workstations that are unassigned, including growth projections.

- A. Professional
- B. Pre-professional or para-professional
- C. Clerical
- D. Media, tutorial, or other tenant sharing facility
- E. Task (non-assigned) workstations; e.g., processing, Inter-library loan, shipping and receiving

III. B. Type

You will need to determine what type of office or workstation each employee will be allocated.

- A. Type and number by staff classification
 - 1. Private Office (120 to 240 square feet)
 - 2. Organized by Department or cluster; e.g., Reference
 - 3. Open floor plan, systems workstations (60 to 90 square feet)
 - 4. Workstation specifications
 - a) High panel
 - b) Low panel
 - c) Power and data through workstations
 - d) Wall mounted, panel mounted

III. C. Location

You will need to determine where the office areas are to be located since this will relate to the size of the cluster. If the reference offices and reference staff workroom

were included in the sample space summary as illustrated above the cluster could increase by 1,500 square feet for a staff of eight. Since reference departments are typically located in "prime real estate" on the first or entry levels, this would increase the space requirement to 7,800 assignable square feet of "prime real estate" if the reference staff is accommodated adjacent to the public service department. Possible locations to consider for staff workstations include the following:

- A. Public area
- B. Adjacent to public service desk
- C. Near shipping and receiving
- D. Visual control of service desk
- E. Not even in this building (most frequently technical services or other specialized department)

III. D. Public Service Desks

Staff discussions will also focus on the size and number of public service desks and their locations.

- A. Number and location
- B. Number of workstations per service desk (approximately 150 square each)
- C. Ability to close workstations
- D. Ability to close public service desks
- E. Disabled accessibility
- F. Security issues

III. E. Other staff

Space allocations for students, temporary and part-time workers must also be included. These include:

- A. Lockers, sign in area
- B. Shared "task" workstations
- C. Changing areas

Other staff facilities to be included in the space planning process include:

- A. Staff conference room
- B. Staff lounge
- C. Staff entrance
- D. Staff parking
- E. Staff toilet facilities

IV. TECHNOLOGY

Many of the issues relating to technology do not relate specifically to the space plan, since a workstation is a workstation and sized similarly whether it houses a microfilm reader or a high end multi-media workstation. The space required for public use technology ranges from a work surface large enough to accommodate a monitor, keyboard, perhaps a CPU, and print materials as well – to a clear work surface (or lounge chair with a tablet arm) with power and wireless network available for the

customers' own hardware. Recent improvements such as flat screen technology decrease the size of the workstation required.

However there are many issues relating to technology that must be discussed during the space planning process. These include the following:

IV. A. Document Delivery

You will need to decide how you will deliver print to your customers.

- A. Local printers
- B. Networked printers
- C. Print distributed from a service point from a high speed printer

Discussions will include decisions about whether you charge for printing, how you enforce site licensing, and what the staffing implications are for each of these print delivery models.

IV. B. Network and systems support

You will need to discuss network and systems support and whether in-house personnel or a department outside of the learning resource center provides these. Each of these departments will require space for personnel as well as additional space for hardware, software, and documentation storage. Network departments require substantial storage space for receipt of equipment and storage for parts and repairs.

IV. C. Non- assignable support space

Typically elements such as communications closets and electrical closets are "charged" to non-assignable space so they won't be calculated in the ASF space plan, but if you don't plan for them, you probably won't get them. If you are housing your own CPU, you may require a room as large as 250 square feet for the equipment, systems workstation, system printer, tape storage, and for two individuals to work together -- and both of them in wheelchairs by the current disabled access guidelines.

IV. D. Self-service technology

Ample space must be allocated for self-check stations, smart sort systems, RFID technology, and other recent additions to the technology menu. Self-check stations need not be located adjacent to the Circulation Desk, but frequently are located near an area of shelving designated for self-service reserves.

SUMMARY

Good space planning is an art and not a science. Compact shelving and large group tables may save you enormous square footage, but be completely unacceptable to you and your community. Each element must be sized individually and compromises weighed if you are to stay within your space allocation budget. The Library's Plan of Service and Community Needs Assessment must be honored.

A detailed space summary chart is the result of hours of discussion and revision, and many meetings to find the right balance of elements to fit within the assignable square foot space allocation.

There is no single right solution for each project and no one planning a building project should accept the first solution or space plan before all of the alternatives have been explored. Using the simplified approach and then "publishing" that number can leave you without room for the much-needed classroom or short of reader seats once the funding has been allocated. The Librarian/Owner can and should do a great deal of homework in preparation for the bottom line.