Building Design for Library Management

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The success or failure of a contemplated library building depends largely on thorough study of the project by the library management, both before an architect is appointed and during the development of plans. The term “library management” is intended to include not only the librarian and the principal staff members, but any board or committee sharing responsibility for getting a building that meets its purpose adequately. Obviously it is a prime obligation of such a group to provide wisely for the collecting, preserving, and use of books or other record material, and the design of the building can be a potent factor in promoting or hindering these ends.

Building design involves many factors, such as location, planning of areas, structure, equipment, and aesthetic features. A controlling program should be established by the library management at the outset to serve as a guide for the architect. Failure to have such a program usually results in an unsatisfactory building.

The management necessarily advises and assists the architect in locating the building as well as in the planning of the interior. It should approve the allocation of funds between essentials and luxuries, and between functional and aesthetic features. Artistic aspects should serve library functions but not dominate them. They may promote the use of books greatly, but also they may result in cramping and rendering such use inconvenient. When purely aesthetic features consume an unduly high percentage of building cost, they become the master rather than the servant of the library. The true purpose of the building is then defeated, regardless of how beautiful it may be. No one would argue that to devote 50 per cent of an appropriation for artistic appearances means good design, unless the practical library functions are first provided. While such a proportion is by no means rare, it can be justified only if a munificent donor insists on it and does not at the same time hamper the workability of the library.

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In calculating allocations of funds square-foot costs rather than cubic-foot costs are the better guide, as the management is primarily concerned with floor areas rather than volume of space. Costs per cubic foot are safe criteria only when they apply to a group of buildings of a single type and story height, such as office structures, hotels, or schools. On a cubic-foot basis it might appear that lofty library rooms are economical. On a square-foot basis it is clear that the reverse is true.

The preparation of a building program involves much balancing of relative values and requires judgment based on long experience. This is where a library planning adviser who has thorough familiarity with building construction, library needs, and architectural problems can well earn his salt. The management's program should not only guide the architect but represent a minimum standard of achievement which he can be expected to surpass. With such a governing program the architect will not have to spend an undue proportion of his fees, which are none too large anyway, for one series of sketches after another in endeavoring to put nebulous ideas of the management into concrete form.

At the very beginning of a project the management should acquire knowledge of area costs in other libraries of different types. Otherwise it will work in the dark and not know what total spaces it should expect from the funds in hand or anticipated. Some of the figures available are sure to be for low-cost modular buildings, and for examples of other types that meet library purposes sufficiently and at the same time are aesthetically acceptable. Such costs, after adjustment for location and year of construction, divided into the appropriation available, yield the approximate number of square feet that can be expected.

If an appropriation has not been made and its amount must be determined by analysis, then the management must first decide on the total area that will be required and the kind of building it prefers. Next, a fair cost per square foot for a structure of the preferred type, based on the data collected, should be assumed. The cost then should be multiplied by the total square-foot area needed. The result will be the amount of the necessary appropriation. If funds are tight the building will have to rely for its charm on such inexpensive devices as simplicity, good proportions, natural textures, and attractive colors. Such dependence can yield surprisingly good results, everything considered—better even than might be obtained if large sums were spent for polished marble, gold leaf, elaborate carving, charming patios, and
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murals. Over half a century ago the Boston Public Library was built with full use of such aesthetic resources and with all the skill of the great architect, Charles Follen McKim, of McKim, Mead, and White. Aesthetically this building was an outstanding achievement and became a mecca for tourists, including mostly those not interested in reading. Probably the features that have attracted casual visitors consumed 75 per cent of the building's cost, leaving no more than 25 per cent for those designed primarily to serve readers. As a library the building was unsuccessful.

The above comments are directed toward determining the type and floor area of a proposed building. Now some details can be considered. First, where should the library be located? As use is directly proportional to accessibility, there is a strong trend towards selecting a central location convenient to lines of heaviest traffic, either in a city or on a campus. Provision for future expansion is necessary, and that for car parking highly desirable. The main entrance should be placed so as to invite people into the building and bring them to their destinations with the greatest convenience and with the least disturbance to work in process. An entering flight of steps can be avoided by putting the entrance floor at grade level.

Only in the case of very large libraries should there be more than one entrance-exit in regular use. Where there is no more than one, the distributing of readers and the controlling of departures is simplified. These are important considerations during off-peak hours, when staff numbers must be held down to a minimum. Confining an exit to emergency use may be necessary, but is not easy. To locate the main entrance near the middle of the long side of the building usually is a safe arrangement. Exceptions can be worked out to meet special conditions.

Designing for economy and accessibility directs that there be a first-class story just below the level of the main entrance. The use of modern facilities for damp-proofing, lighting, and ventilation, and the practice of locating mechanical equipment in a roof penthouse, all can serve to abolish the old-fashioned, cluttered, unattractive basement. Its convenient space then can be converted into a "ground" floor that is just as good as any other story, except possibly for lack of windows. Being just a short flight of steps below the main or first floor, this area is too valuable to be demeaned. The ground floor, first or entrance floor, and the second floor usually have enough total space to take care of almost all reader needs. Easy accessibility makes their use independent of elevators. Where a library is set in grounds of
ample size, a wide and beautifully planted excavation around the ground story, like a dry moat, renders possible good windows and an attractive outlook.

Logical designing usually results in the location of stairs and elevators close to the main entrance and as near the center of a building as possible. This is convenient for readers, promotes easy control of arrivals and departures at the different floor levels, and minimizes the necessity for corridors. Reading areas should not be used as corridors. Toilets can be located most advantageously near the stairs and elevators, and one over another. The stairs and elevators should serve all levels of the library, in both main sections and stacks.

The flow of reader traffic to the different reading areas and the disposition of related sections requires diagraming by management as a preliminary to the starting of plans by the architect. Likewise the relationships of work spaces to each other and to the public must be plotted. The flow of processing operations should be laid out so as to be uninterrupted, and the arrangement should permit members of the staff easily to "pinch-hit" for each other.

The flow of receipts from the delivery entrance through the unpacking room, to the point for checking against orders, to storage before processing, and through cataloging and preparation for shelving, must be clearly shown for the architect's guidance. Both processors and the public should have easy access to the main card catalog.

At the delivery entrance an unloading platform at truck-bed level, with ramp to floor, is desirable. Unpacking rooms should be thoroughly fire-proofed and insulated against noise. As there usually is a story height between the unpacking room and the processing floor, an elevator is needed. This need not be a special freight elevator, except in large libraries. The public elevator can be used where freight traffic is infrequent.

Since library operations are constantly changing, elasticity for rearrangement is essential. Sections for various purposes should be interchangeable in location as far as possible, and movable equipment should be used to divide areas for different functions. It is preferable to think in terms of areas rather than of rooms, since rooms connote walls and walls mean rigidity. Interior structural walls of solid masonry, or those carrying air ducts and electric conduits, are virtually immovable and therefore inhibit flexibility. These mechanical elements can be taken care of better in outside walls and by enlargements of structural columns or enclosures. In the New York Public Library there

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are about fifty special rooms surrounded by solid, load-bearing, masonry walls. Elasticity is largely absent, and functional parts cannot be reallocated as needs demand. Furthermore, the task of supervision is too onerous to allow all rooms to be kept open during off-peak hours. Determining a policy in respect to ceiling heights is one of the initial problems of design. There are three customary solutions:

1. The building may have 15-foot or 16-foot main-story heights and a multiple-tier stack with 71/2-foot or 8-foot tier heights. Main floors then line up with alternate stack floors. This yields large and lofty public rooms, but small rooms and corridors outside the stack either are excessively high or involve the expense and waste of dropped ceilings.

2. With modular construction the stories are 10 feet to 12 feet in span floor to floor, yielding ceilings 8 or 10 feet high. Any public rooms requiring greater loftiness can extend through two stories. With these low ceilings, lighting and ventilation are simplified. Also, stair-climbing and construction costs are minimized. Book storage is somewhat more costly than with multiple-tier stacks.

3. A combination of 1 above with 16-foot stories, and a large general utility or convertible stack area having 8-foot stories and 71/2-foot ceiling heights, has many advantages. This utility space should be much larger than required for book storage and book consultation, as it is intended to house all functions that do not require large and lofty rooms. These commonly add up to a surprisingly large proportion of the total area of a building—50 or 60 per cent. The contrast between the high- and the low-ceiling sections is attractive, and the over-all square-foot cost of the building is moderate.

In the case of large libraries, book storage becomes an increasing problem as years go on, and differing provisions based on the varying uses of materials are indicated. For books much in demand the shelving should be openly accessible under the best possible conditions, such as wide aisles, the placing of books neither too close to the floor nor too high to be reached easily, superb lighting, and a policy of keeping shelving constantly cleared of inactive materials and replenished with new ones. A capacity of 100,000 volumes is ample for books in the readily accessible category, even for large libraries.

Rare items and those of high value require better protection than can be accorded on open-access shelves. For current reference books economical stack storage, combined with interrelated reading and

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working facilities, is indicated. Here again the shelves should not be cluttered with obsolete material. Very inactive stock can be kept in super-compact storage, where economy dominates rather than visibility. The facilities for reference resources can be designed to permit conversion into super-compact storage as space fills up.

A question that arises more and more frequently is whether or not to design for air conditioning, that is, ventilation with control of humidity, dust, and temperature in both cold and hot weather. In a small library dependence may be placed entirely on window ventilation, providing the outside exposures to dust, temperature, and noise are not too great. In large libraries mechanical ventilation is advisable, and generally required by law. If cooling and dehumidification are not parts of the ventilating system, generous amounts of air must be forced through it to remove the heat given off by people and lights. This requires large blowers and ducts, whose cost goes a long way toward offsetting the initial and operating costs of cooling and dehumidifying. Artificial cooling permits small blowers and ducts and simplifies planning, as windows and light courts become unnecessary.

There are some finishing touches to a good working library that should not be neglected:

1. Resilient floor tile makes for pleasant and quiet walking. White or light-colored rubber or plastic tile aids in lighting, particularly in stack aisles, where it is otherwise difficult to illuminate the lower rows of books.
2. Sound-absorbent ceilings yield good dividends in quiet, and are worth far more than the cost.
3. There is no factor of design more important than good lighting, and no more difficult problem than that of getting adequate, efficient illumination, free from both direct and reflected glare. Without glare, reading is comfortable under luminaires of relatively low intensity, which keep down the heat and the consumption of current. Artificial lighting can be made more dependable than natural lighting and, everything considered, is less costly. Consequently windows are not necessary except for psychological reasons. Management should see to it that sufficient electric outlets are provided and properly located, both for present and future needs.
4. Ease of maintenance is an important factor in selecting the materials for floors, walls, and ceilings. Saving in first cost often results
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in heavy annual maintenance expense. This is certainly true with painted plaster walls.

5. A collection of books for use in a particular section should be housed in a group of stacks close to the entrance of the section, so that readers can select readily those desired without disturbing other people. Wall-shelving is inconvenient, and expensive in space and capital cost.

The leading factor in getting a good library building is a clear-cut statement, in black and white, of the management's requirements. With such a program the architect can be guided and controlled. Without it he is likely to take the bit in his teeth and produce a monument rather than a library. If that happens the management must bear the principal responsibility, as the architect cannot be expected to meet needs of which he is not clearly informed. Preferably, architect and management will cooperate, each in command of his own field. Sometimes they will lock horns, and compromises will be necessary; but if these are made wisely and after careful consideration, a good, well-balanced building is likely to result.