Building Planning and Equipment

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Much has been written about college and university library buildings in recent years, and this article merely attempts to bring the salient considerations together in topical arrangement. Current trends are taken to mean developments since about 1940, and for the most part they turn out to relate to North America. In dealing with them no sharp distinction between college and university structures has been practicable; and in order to be fully suggestive the paper takes account of the thinking on the subject as well as of what already has been embodied in wood and steel and stone. Its most comprehensive sources are the books and articles listed at the close, although it draws also upon many scattered items and upon information which may not have found its way into print.

The history of physical provision for college and university libraries of course is pertinent to recent happenings, but it is largely unwritten and can be touched only lightly here. In America it seems to have begun with the nooks and spare rooms utilized when collections were rudimentary and when patrons and their needs were few. Harvard elaborated on these in 1841, perhaps taking a hint from England, when it introduced its spacious and “church-like” Gore Hall with a system of tiered alcoves. This became a model for several other libraries, to the general regret as it finally appeared. Nevertheless, the juxtaposition of readers and books thus sought prevailed until a generation later, when Harvard with its growing collection was forced to follow the example of some European non-academic libraries and to add a stack. From then on the separation of reading and storage facilities gained, as instanced between 1880 and 1890 in new structures at the University of Michigan and at Dartmouth, Colgate, and Wabash colleges. The ways of relating books and readers varied, as experimentation pro-

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[ 136 ]
ceeded and as librarians contended for utility and convenience against the frequently opposing aims of architects, but it is clear that a new order had begun.

Some of these layouts looked cumbersome, and eventually something resembling the conventional Carnegie Public Library plan of the early 1900's was tried. This happened at Carleton College in 1897, and later at Hebrew Union College and the University of Oregon. The plan divided the reading area into two equal parts, separated by the entrance area and circulation desk. While making supervision less easy and interposing a noisy traffic lane between the parts, the arrangement offered few advantages and it failed to become a prototype.

A way seen to meet its weaknesses was to locate the main reading room on a second level, giving it right of way and suitable architectural interpretation across one facade. The reading room was balanced wholly or partially by a stack unit opposite, the intermediate portion of the floor then being devoted to service desk, public catalog and stair-well opening. The ground floor was utilized for entrance corridors, miscellaneous facilities, and lesser reading rooms. Examples of such a scheme at Grinnell College in 1905 and between 1910 and 1920 at the Universities of Missouri and Michigan suggested a more definite pattern than had been discernible since the days of simple, single rooms, and one which exercised much influence. It was by no means exclusive, and it was applied in various ways according to the sizes of buildings, the number of public rooms included, and the quarters sometimes imposed for non-library activities, but it recommended itself to a good many planners and it served well.

If 1940 is a fair dividing line between past and present, the decade preceding it still must be thought of as foreshadowing and even comprising much that came after. Those ten years brought tentative formulations based on lessons handed down from earlier periods. Underlying all was a sharpening realization that the duty of a library is to support the program of its institution, and that to have a chance of doing so its building must possess the workability librarians began to insist upon in the 1880's. This meant putting the structure close to the "scholastic center" of the campus, on a plot providing light, quiet, and room for extension, and planning it so as to assure convenient and economical interior arrangement, with an eye to adaptations and artistic aspects and barring extraneous features.

In reasonable measure the edifices of the 1930's embodied these principles. At the same time their projectors had to think anew of de-
mands for space. As they did so, capacity estimates rose, accompanied by continued concentration upon multi-tiered, enlargeable stacks, the survival of great reading halls and reserved book rooms, the spread of browsing rooms, and interest in departmental offices for staffs. With buildings having to be bigger, elevators and book lifts appeared more necessary. Also, the criteria for artificial lighting, air treatment, and noise control evolved by experts began to be considered, and there was increased concern about fire protection. Architects as well as librarians showed some appreciation of functional planning, and of the relation of library buildings to their surroundings.

As will have been gathered, what has happened since 1940 rests on concepts which are not new, but which have been refined and established in this period. The central idea, carrying further the fidelity to institutional purposes already mentioned, is that a building must fit actively the total program. Only thus can the library be truly a "teaching instrument," serving at all levels and for various disciplines, and supply the materials and conditions requisite for research, for administrative functioning, and for such off-campus demands as are entertained. Further, if the aims and activities of a college or university alter, its library will change and building requirements be modified accordingly. Suggestive expressions of the prevailing view are that the emphasis is "not on housing books but on housing students using books"; and that a library building is a means and not an end, and hence to be designed as one of the work-places on a campus.

Besides promising effectiveness, such an approach to planning finally outlaws all effort to make a library building primarily an ornament, an object of pride for donors or governing bodies or alumni, or a catch-all for sundry non-library facilities. It also renders clear that as institutions vary, each building project is individual. In summary, librarians at last are sure about the physical needs for their work, and architects are coming to view these requirements as an aspect of the functionalism many of them preach for buildings generally.

Moreover, librarians are alert and articulate because they know they will be severely handicapped unless they can have appropriate quarters and equipment. Novel and expanded activities for students and faculties depend upon spaces suited to the purposes. Individualized and enriched teaching and the extension of research call for collections differing from many of the past in size, matter, proportions of titles, location and arrangement. These in turn require adaptations in housing and storage. The very form of organization requisite to
success may hinge on the building. Pressed upon by all this, the heads of libraries more and more are disposed to assert their needs, especially when told how much present-day engineering can help toward meeting the conditions they face.

Against the background sketched above, and with recognition that the present began in the past, what marks the efforts and results of recent years? To begin with, planning has come to revolve around readers, whose claims for materials and services are becoming increasingly heavy and varied. Norms for the number of student population to be seated, for instance, have risen in a few decades from ten per cent to fifty or even sixty per cent. Moreover, the allowance of square feet per person desirable in reading rooms has gone up, especially where informal arrangement is intended. At the same time, it has become a truism that access to collections must be easier than before.

These standards have suggested larger capacities, as evidenced at their maximum in the proposal at the University of Iowa, with a total student-faculty population probably around ten thousand, to accommodate five thousand people. More significantly, they seek to put users close to the materials they require. Quarters for departmental libraries and the study associated with them are approved without the old misgivings. Distinct rooms, and in one case a separate library building, for undergraduates have appeared in large universities. Stacks are contrived conspicuously and spaciously, as at the University of Massachusetts even before 1940, and as proposed for Kenyon College, so that patrons can enter and linger comfortably in them. Open divisions for consulting the resources in the major fields of knowledge have been set up, following an early pioneering trial at Brown University, the leading later instances being at the Universities of Colorado and Nebraska and Rockford College. Finally, ample study areas are placed in what once might have been exclusively stacks, illustrations being found at Colorado State College, Rice Institute and Bradley University; and book ranges adjoin or are sprinkled over spaces that look like reading rooms, as happens at Harvard’s Lamont Library and at the Women’s College of the University of North Carolina. Supplementing such arrangements are listening rooms, phonograph tables and projection rooms, and well-appointed waiting sections near service points, such as that at Washington State College.

The motif in much of this of course is a revival of the one obtaining in the early college libraries, before stacks and the segregation of books in them were thought of. It encourages students to examine
and use their study materials at will, and, where desired, in consultation with their instructors or with librarians. As the idea has spread great reading rooms have tended to be outmoded and reference departments to be divorced from those that remain, while reserved book sections have assumed less importance.

To the somewhat general features just listed are added reading rooms concerned with restricted subjects, another feature in the Holland Library at Washington State College. Again, there commonly is generous allowance for independent work by faculties and advanced students in stalls, carrels, cubicles, private studies, typing cells and film-reading facilities for individuals—often near the book store—and various conference and seminar rooms for groups. Less utilitarian demands have brought wide provision for leisure reading, whether the conventional browsing room, a section in a general reading room such as Greenville College has set aside, or, going back to a 1938 example at the University of Virginia, a part of a central hall. Related features appearing here and there are lounges, conversation and smoking rooms, and outdoor reading terraces. Quarters for exhibits are general, and those for periodical reading frequent. Auditoria are gaining a place, being introduced at some mid-west universities. Accessory conveniences for the public represented are coat rooms, not necessarily attended, and telephone booths.

The arrangements for users outlined above indicate in part what has been done about books. On the one hand considerable portions of the stock have been dispersed from storage to reading rooms and service points, under a variety of plans. The fresh impetus to departmental libraries, stimulated perhaps by need for space and by discovery that centralized management is practicable, may entail an increased degree of scattering. Yet this is only carrying an old idea further, admitting at last the merit of such collections where there are major segregated units of instruction, such as those in the laboratory sciences and professional schools. The truly significant relocations of material occur at some of the institutions whose chief preoccupation is undergraduate teaching and study. They have done the most to mingle students and books; and when they make reading and book spaces contiguous or merge them, there remains slight occasion for a stack and it may dwindle to little or nothing.

On the other hand storage more or less pure continues necessary, in differentiation from the stock spread out for all, where collections of unrestricted scope and size grow up for research or other purposes.
Building and Planning Equipment

For best administration it is desired that the reservoir be central, concentrated, controlled, and susceptible of increase. No single pattern of arrangement has emerged, however, although there are some clear tendencies. Except perhaps where the utmost compactness is imperative the old multi-tiered self-supporting stack is giving ground to that of the slab-floor type, with free-standing ranges, making possible a readier approach for users and greater exchangeability both within the enclosure and with other parts of a building. Ceilings are apt to be low, to conserve space; portions of stacks commonly can be walled off at convenience with movable grills; and, for the sake of a clear deck and easy cleaning, there is some interest in having cases hang from above, rather than stand upon floors, as in the annex to the Library of Congress. The tower plan of Yale and Cambridge universities has lost popularity, apparently being judged “inefficient, inflexible, and uncongenial to modern library principles”, and the scheme of placing stacks in vertical relation to reading sections, perhaps borrowed from public libraries, rouses doubts lest it limit future capacities.

“Books” now being a generic term, the care of materials must include such items as maps, prints, graphs, type-scripts, autographic documents, slides, models, and multiform photographic products and sound records. All of these are having to be stored and rendered available, with safety to themselves and satisfaction to users, and often with the help of containers, devices and cabinets unknown a few years back. Because experience with them is scant they still present problems, some of which may take considerable time to resolve. While various institutions have had to improvise to care for non-book items, the University of Houston has put into its new building an elaborate original installation to accommodate films and sound recordings.

Looking quantitatively at the provision for materials, librarians are perplexed. Past rates of growth incline them to raise potential capacities anywhere from fifty to two hundred per cent, and in calculating areas and cubage for stacks to count on housing fewer volumes per foot than formerly. At the same time they hope that condensed forms of record will reduce the space required for conventional stock, and some look to collaboration among libraries to retard the speed of acquisitions generally. Amid the uncertainties the consensus still is to specify generously.

Time was when a new library building could be accepted with only a cubby-hole or two for the behind-the-scenes use of those who were to oversee and conduct its work. Such an error is less likely today,
since here again the interests of clients determine what is requisite, and it is seen that appropriate service can not be assured unless operative functions are efficiently provided for. This implies not alone space for the usual bibliographical tools and library equipment, but convenient arrangement of furniture and personnel, and economical flow of work—for administrators, specialists, technicians, those who deal with the public, and custodians. It necessitates quarters for the securing, repair and handling of non-book materials, such as the photographic laboratories now common; footage and connections for the business machines required in various departments in the modern library; for communication; and for fumigating devices. Some auxiliary features once slighted also are taken for granted, notably ample rooms for receiving, shipping and extension activities, with loading platforms, and adequate space for supplies, housekeeping materials and miscellaneous storage. As in the case of books, an increment of at least fifty per cent over past allowances is advocated for staff quarters as a whole, with emphasis on offices because of long-standing inadequacies there. In addition to provision for work areas, it is expected that staffs will be supplied all that is reasonable in the way of conference places, rest rooms, lockers, lavatories and refectories.

To locate the elements of a building correctly now appears almost as important as to have the proper ones. The ends desired are to save time and effort for patrons and staff, to reduce and control crowding, to confine noise, and if necessary to protect the library's holdings. A foremost principle is to place a major service floor at ground level, to include on it those portions of the structure frequented in largest numbers, such as delivery halls and undergraduate reading rooms, meanwhile pushing to remoter regions nad perhaps to upper stories, the more special and less used departments. A partial and satisfactory exception to this is to assign reserved book rooms, when they remain, to a basement, with their own approaches, as is well achieved in the plans for Queens College, New York City.

Companion measures for minimizing traffic lines are to group sections which call for much movement from one to the other, and, where that is not feasible, at least to keep them on the same floor. This applies, for example, to reference and bibliography rooms, and to acquisitions and preparation departments where they are not combined. A corollary effort, this time in the interest of quiet, is to avoid locating reading rooms in such a way that they must be crossed to reach other points. Finally, it may be advisable to arrange all public parts with
Building Planning and Equipment

a view to close oversight of them and of the passing to and from them. Similar precepts are advised and followed in the placing of equipment and activities within rooms.

Some long and arduous lines of movement are apt to remain even after parts have been related advantageously, since buildings are larger than once was the case, and compromise is inevitable in carrying out any project. However, they are being simplified by elevators for patrons and staff, with escalators receiving consideration; by lifts and conveyors for books; and by wire and tube systems for communication.

Librarians realize now that the wisest disposition of elements can be right only while given conditions last. Moreover, they are wary about future contingencies because of the numerous changes they already have observed, such as those in the claims of readers, the responses necessary to users' demands, the forms of library resources, the ways of treating stock, and systems of administration. The classic lesson is the experience of Princeton University which, during the years its building project was being studied, found it necessary to draft a succession of differing schemes to meet evolving viewpoints of the faculty and library staff. They know, furthermore, that obsolescence is as likely to arise from faulty distribution of space as from its exhaustion.

Adaptability and the avoidance of rigid assignments of sections can postpone obsolescence, hence has become a first principle. An early proposal, which only half met the problem, was to build inexpensively and with a view to replacement after twenty to twenty-five years, perhaps by capitalizing the sum a more permanent edifice would have cost. Another was simply to reduce or eliminate inside walls in an otherwise conventional structure, following the "open plan" in public libraries.

The preferred solution, however, turns out to be unit construction, currently referred to as "modular," with uniform spacing of supports horizontally and of levels vertically, and with only exterior walls, piers, and utilities immutably fixed. Normal story heights are kept low, although susceptible of multiplying; floors are strong enough to support whatever may be placed upon them, including stacks; divisions can be created by means of shiftable partitions or panels, or of book cases or furniture; and space allotted to a particular function or body of material can be reassigned to others with little effort or expense. Thus, following the example of loft structures, the utmost in flexibility

[ 143 ]
ERNEST J. REECE

is attained, bad guesses cease to be calamitous, and pleasing effects are achievable. All this may be accomplished at a cost which proponents assert need not be greater than for a traditional building, and which in any case probably could be justified by gains in usefulness. It would be too much to say that this scheme of construction prevails in actual buildings; but the idea seems predominant. A fair number of institutions has adopted it more or less fully, the most aggressive supporter being the University of Iowa.

With pressure for space insistent, to plan liberally is not enough. Despite the numerous proposals for limiting, compressing and dispersing collections, every possible measure for rendering extension easy and inexpensive seems imperative. Moreover, plans for enlargement patently should be made when a building is being designed. Additional merits appear therefore in the unit method; for if a structure is rendered adaptable through this it will be expansible as a matter of course, assuming the ground available is adequate. Sections which are uniform lend themselves to accretion without raising constructional or engineering difficulties, and shifts of contents and people naturally can be made to the new parts as simply as within the former walls.

At least one other avenue of growth has won favor. A few small and relatively simple buildings consist essentially of groups of wings, only slightly divided internally and not necessarily of uniform size, placed in ninety-degree relation to each other and perhaps joined by lesser blocks at the angles. Since each of the semi-independent sections tends to be restricted to some particular purpose, extensions can be made with little interior adjustment. Knox and Agnes Scott Colleges pointed the way to this device before the 1940's, and Carroll College and others have followed.

New measures for preserving order and protecting stock are having to be considered, in consequence of freer access to collections, the scattering of users to various rooms, and the growth of student bodies. It may prove practicable to disregard them in case time shows that conditions in libraries generally are becoming more quiet, and that fewer books are disappearing, as has been claimed under the divisional plan at the University of Colorado. There is some apprehension, however, that turnstiles and facilities for inspection at egress will be indispensable if losses are to be kept within tolerable limits. Institutions tend to shrink from such means and their annoying effects. Also, since building codes often insist upon a large number of exits, policing costs

[144]
Building Planning and Equipment

may be excessive. The problem is the more aggravating because, as was discovered at Columbia University years back, stacks may have to be equipped with so many doors as to vitiate immediate control of major collections. While some administrative questions remain to be answered and their implications for buildings therefore are not clear, it evidently is desirable to keep the points of surveillance few and, as implied in an earlier paragraph, to have them as efficient as possible. This may seek to discourage mutilations as well as to lessen improper withdrawals.

With the aid of architects, librarians have been giving attention to some of the innovations in construction displayed in the general building field, such as thoroughgoing insulation, increased use of welding, and more dependable water-tightening of roofs. They have been more attracted, however, by the features particularly associated with the unit plan. Conspicuous among these are so-called "dry construction," standardized parts, transferrable members, abandonment of lofty rooms and windows, incorporation of wiring and ducts in piers, combining of light and/or air sources with the capitals of columns, and prefabrication—the last especially for its potential savings. All these have been much talked and written about, and they have been sufficiently adopted, with or without the unit arrangement, to help in giving a few structures novel form and to suggest that a new vogue is being set. There has been some utilization also of floor-to-ceiling windows, as at Houston and the Massachusetts Institute of Technology; and on the other hand interest in a windowless library, although no school so far has come to that.

Novel materials also are becoming evident, for a variety of reasons. Some commend themselves for lightness, others for durability, and a few for economy, while some contribute to the light supply, to safety or comfort, or to flexibility. Examples are precast blocks for bearing walls and partitions; acoustic compositions for ceilings and walls; plastic products for panels, light fixtures and hardware; and glass of various types for partitions, walls and doors. If evolving methods are imparting to buildings a fresh form, the materials becoming available may in time give them a new face. The two, joined with the know-how to employ them, inspire the claim that nothing which would enable a building to fulfil its requirements is now impossible, and that to get what they wish libraries have only to command the resources at hand.

This may be true where other hindrances are absent. There have
been fears, however, that building codes framed years back, to fit the only conditions envisaged then, may hamper the application of structural devices subsequently developed. If there have been serious instances of this in connection with libraries, they have not come to notice. A greater present hazard is restriction of supplies, which basically altered the plans of one major library a few years ago and again threatens as of 1952. Such shortages can affect materials both old and new, and force the use of one in substitution for another more extensively than would be preferred.

Most of the items making up library stock today are not irreplaceable or of more than intrinsic value, and yet the loss of a collection embracing thousands of them can be a calamity. Destruction by fire has occurred in enough instances to hold that danger before librarians, and demand for the smoking privilege has made them doubly aware of the perils. Happily, safety features are inherent in much modern construction. Also, fire doors have been utilized to shut off stacks; chemical extinguishers have found some adoption; and a sprinkler system has been installed in part of a building, although it supposedly is realized that where books are concerned water can do as much damage as flames. Security against fire caused by bombs, as well as against bombs themselves, occupied the minds of the heads of research libraries through the war period, the precautions chosen being isolated locations and concrete shelters for sequestering treasured materials.

Prevailing views about the insides of buildings are traceable to several origins. They represent revulsion from the surpassingly plain and neutral effects long dominant in libraries, conviction that a carefully chosen environment may tranquillize or stimulate occupants and train their tastes, and realization that walls and ceilings can make or mar a lighting scheme. More than whim and imitation accordingly lies in the eager advocacy and adoption of bright and varied colors. In addition they have been employed to differentiate divisions of a building from each other, so that patrons may more easily keep their bearings and learn their way about in the wide-ranging quarters to which they have access. In all such effort, as otherwise in recent structures, simplicity is intended, since anything verging on the bizarre might defeat the purposes sought. Accompanying the enhanced use of color has come that of draperies, and in minor degree the selection of building materials which are friendly to desired hues or serve well as media for them.

Choice of floors is getting close attention because it is seen to in-
Building Planning and Equipment

fluence the success of a building project in several vital ways. Floors may go far to determine how quiet the rooms and halls can be; they may help or harm the lighting; they may embellish or impair the scheme of interior decoration; and they may have some effect upon initial costs and a great deal on expense for maintenance. One guide in their selection emphasized today is that requirements differ from part to part of a building, and that there is no reason floor specifications should not be varied to match, particularly where structures are large and many of their sections specialized and separated. Thus concrete may suffice for some basement rooms; stone flags or terrazzo or ceramic products may be requisite where wear is heavy and yet pleasing appearances are desired; asphalt tile may serve well in work rooms, and even in some public portions if economy is forced; linoleum stands out as the chief all-purpose material, for use in numerous situations and where funds are neither meager nor lavish; and rubber recommends itself for the maximum merits consistent with pliancy, and where cost is not a great consideration. After the use of glass and colors, perhaps no aspect of recent buildings is more notable than the striking and efficient floor surfaces they display.

At last it is being admitted that if students, scholars, and librarians are to work with print they must be able to see print, for long periods and without discomfort. It is being learned too that while liberal supplies of light are required there is much more to adequate illumination than a given number of foot-candles. Of equal importance are proper distribution of the light and the avoidance of glare and strong contrasts. With the best of theoretical installations, furthermore, there may need to be particular provision for individuals. Finally, while natural lighting has its values, it is less essential than formerly in view of present-day artificial systems, and in some sections of a building it may make the control of illumination difficult or even be a detriment to the contents, besides necessitating “space-eating courtyards and light-wells” and complicating the treatment of facades.

In approaching the problems of lighting those responsible for library buildings seem alert to the standards furnished by engineers, and to the need for such wiring as will permit increases in loads. Library planners are pressing for higher levels of illumination and for electrical systems which will assure these. They tend to prefer adequate overall illumination rather than to introduce separate individual installations. So far there is no clear choice as among direct and indirect lighting and those in between, nor among incandescent, fluorescent and mixed
sources. In practice, however, little use is made of indirect lighting, perhaps because of its cost in current, and the vote seems predominant for fluorescent tubes, despite some indictments and prejudice against them. The building at Skidmore College probably was the first to adopt fluorescent luminaires exclusively. Others have utilized them more or less heavily, but some have stuck to filaments, in one case at least doing so after prolonged weighing of the factors involved.

As with lighting, librarians have been finding what has to be done to air to make it fully agreeable to people and books. Experience and observation have taught them too that the processes are costly if they include cooling, moistening, drying, and sterilizing, as well as heating, and cleaning. Consequently, while a fair number of new buildings claim air-conditioning, probably in few is it more than partial. Apparently the need has not seemed great enough to warrant complete installations, especially at the sacrifice of other features. Each case must be decided according to the local situation. Current views seem to call for complete air treatment in buildings and sections devoted to rarities, and possibly in stacks and assembly rooms, and for cooling and dehumidifying equipment in warm and wet climates. Otherwise planners are apt to be content with heating, humidifying, and cleaning systems, window ventilation, and such selected individual devices as may prove urgent in particular circumstances. Librarians who consider air-conditioning at all are unlikely to forget that space and construction should allow for whatever forms of it may be desired at any time in the life of their building.

The noises that once were a minor annoyance have grown into a menace as libraries have found themselves in the midst of teeming communities and heavy traffic and have themselves become generators of more or less disturbance. Hence it is felt imperative to limit the sound entering a building or originating or transmitted within it. Interest accordingly has strengthened in the sources of noise, in the sorts and levels that can be tolerated, and in the means for keeping its effects within reasonable bounds. Double windows and acoustical treatment of walls and ceilings have been utilized, the latter widely, and insulation of floors and walls is available. Apparently no complete or infallible correctives for noise are at hand, and librarians presumably realize they can not hope for perfect protection, particularly with such funds as ordinarily are at their disposal. Enough is known and sufficient devices are on the market, however, so that wise plan-
Building Planning and Equipment

Planning should save an institution from injurious conditions, once it decides what is necessary.

If planning to meet demands means as much as supposed, librarians hardly could fail to apply it to the furnishings for their structures. Consequently they have begun to study such things as the dimensions, lines and finish of chairs, and the width and design of tables. Frequenters of libraries are more likely than previously, therefore, to find seats which fit the human form, and are quiet and not apt to damage equipment with which they come into contact; tables which are small, which are capable of unregimented arrangement, and which interfere little with other furnishings and the movements of people; desks which are open beneath and free from dust-collecting features; and pieces generally which are consistently simple, informal, graceful and diversified. Some of the furniture favored is of lounge type; some of it employs shapes characteristic of so-called modern design; and much of it utilizes woods other than the traditional oak and mahogany, with light, non-glaring finishes, and bright and varied colors in the upholstery. All-metal furniture has appeared but has no great vogue, perhaps because of the weight and coldness of steel and the expense of aluminum. Glass is prominent in exhibit cases, and is appearing on counters. Standardized lines are thought advantageous for original cost and economical replacement; and “built-in” equipment has come to be avoided because it lessens flexibility.

The staple and traditional requirements for the locating of library buildings, already referred to, have undergone no great change, nor has the fact that choices often are pre-determined. A quiet site may be a little less imperative since ways are at hand to reduce and deaden noise, and one assuring good natural light not so important as dependence on artificial illumination increases. Whatever emphasis is new has to do with the placing of a building on its plot in such a way that access and traffic to it will be the most easy and natural, and the best use can be made of the daylight if that is sought. Suitable orientation can be a leading consideration in picking a site.

In view of current aims library buildings might have turned solely utilitarian and perhaps plain or even repellent in appearance. On the whole they have escaped this because of what they owe to the general amenity of a campus and to the esthetic education of students. Planners desire that new structures have “architectural beauty,” of a kind growing from the fulfillment of purposes. Simple exteriors, unpreten-
tious interiors, rooms that are free from stiffness and even possess charm, and features generally that proclaim the ends and uses of the building—these are the effects sought, even where an archaic architectural form or devotion to unit construction renders it difficult. It is true that some singular results can be found, such as the fan-shaped design at the Oregon College of Education, the structurally odd circular reading room at Florida Southern College, and the box-like and seemingly stilt-mounted edifice at the University of Panama; but these are no more typical than were some of the Gothic curios of earlier years. Most of the new buildings make a good deal of horizontal lines, flat roofs and other earmarks of “modernism,” but have more than justified themselves in such examples as those at George Pepperdine and Fairmont State (West Virginia) colleges, the University of Oregon wing, the University of San Francisco, and the Department of Agriculture at the University of Minnesota.

Concern for harmony with the physical environment also has become more pronounced, whether to be achieved by following the previously approved style; by softening contrasts through judicious placing and suitable landscaping; or by starting boldly with a new motif to which it is hoped later neighboring buildings will conform, as was the intent at Gustavus Adolphus College. Where a regional or local architectural form prevails there may be little occasion to consider anything else, providing it is consistent with practical requirements. Such adaptations are notable at a number of institutions in the American southwest, particularly in New Mexico; and in Mexico itself in the many-storied structure at the University of Sonora.

The need for making funds go as far as possible is nothing new, but has been accentuated by war and post-war conditions. Even in advance of present exigencies there appeared such expedients as erection of an initial unit to serve for all purposes until a complete building could be financed, as was done at Skidmore College; and planning with a close view to inexpensive management and upkeep, which governed the placing of some reading rooms in so large a building as that of Tulane University. Later has come recourse to inexpensive building materials, such as the cinder block utilized for exposed walls at American International College. High prices doubtless have prevented the undertaking of some deserving and even necessary projects. Probably too the prospect of sustained operating costs, particularly with salaries on the rise, has deterred some institutions from programs and building arrangements which would call for larger and more
Building Planning and Equipment

extensively prepared staffs. Endowments which would help at this point seldom are reported, although Princeton University has offered a contemporary example.

Remodeling is no more popular than formerly as a resolution of building needs. Indeed, the devotion to clear and definite purposes may make it more unwelcome than ever, and the attempt to accomplish it more irksome and unsatisfactory. Sometimes, however, a renovation, perhaps with additions, has to be the answer, based usually upon the principles, methods, and materials commonly invoked for new structures. With this approach it has proved possible to rebuild and expand acceptably in a number of cases, notably at Mount Holyoke College before 1940 and continuing since then at Connecticut College for Women, Bates and Simpson Colleges, and the Ohio State University.

Comprehensive reconstructions are apt to entail a good deal of shifting of furniture and materials, and careful scheduling of operations to keep them going smoothly amid changes and confusion. These, together with the large-scale moving called for when a new edifice replaces an old, are being studied and practiced to the point of becoming an art. The planning which goes into them and the gadgets invented for carrying them out are ingenious aspects of present-day library management. Some entertaining illustrations of their use have occurred recently at California Polytechnic Institute, the University of Washington, and Rollins College.

The developments recited have been fostered by a new and positive attitude to planning, and this in turn has been accompanied by increased attention to buildings in print, by activities relating to them on the part of professional organizations, by extensive conferring among architects and librarians, and even by the setting up of an agency to proffer paid advice. It has been evidenced further by earnestness and collaboration on the part of institutional representatives, other than librarians, in attacking their local problems.

The ideal today is to start with a clean slate, perhaps drafting a schedule of procedure and a check-list of possible items. Then there can be considered the aims, the operations implied, and the accommodations necessary, all with regard to the needs of users.

Such a process entails visualizing the requirements as expressed in capacities, forms of organization, facilities, and theoretical relationships and controls. It may involve study of tasks, equipment, and lines of traffic and work-flow, and lead to considering space standards and

[ 151 ]
determining areas. Further, it must look to the future as well as to
current conditions. The importance of such effort is attested by the
decade devoted each to the Dartmouth College building and to the
Lamont Library at Harvard, and by the twenty years of planning
which went into the Firestone Library at Princeton.

Those who take their task thus seriously often consult librarians
and building committees elsewhere, and examine other buildings to
ascertain what will and what will not work. They have been reminded
too that it may be worth while to inspect public buildings other than
those of libraries.

With these preliminaries has come commonly the preparation of
formal programs, to set forth desiderata, priorities and preferences,
together with the general information and details the designer may
need. Aside from their obvious uses, such statements can be indispens-
able in getting ready for conferences with architects. Representative
eamples have been produced at Antioch, Goucher, and Santa Barbara
Colleges, and at the University of Pennsylvania and the Massachusetts
Institute of Technology.

Several parties may share in drafting a program, but all are likely to
recognize the librarian as the one who must furnish the bulk of the
data and direction. They seem to know by now that without the librar-
ian a building can easily fail to be successful. This is a far cry from
leaving him out of the deliberations, as happened sometimes to his
predecessors of former generations.

Pursuant to his work on the program the librarian may become the
most constant spokesman for his institution on building matters, as he
supports and elaborates what he has specified. Incidentally, a code of
responsibilities tends to grow up, so that librarian and architect can
make their respective competences fully effective in their joint task.
Both participants these days seem to realize how essential such team
work is, and that ordinarily a project allows ample latitude to each.

Probably no one would hold that a library structure made even
“from the best elements of existing . . . buildings would be adequate.”

Much remains to be done in studying what it is suitable for college
and university libraries to undertake, and then what housing will best
forward their purposes.

Persons exploring library problems have commented on the gaps in
such knowledge, which involve curricula, methods of instruction, the
types of facility appropriate to the work of a particular college, the
reading interests of students, the size and contents of library collec-

[ 152 ]
Building Planning and Equipment

tions, the effects of various kinds of rooms upon use in a given institution, and the relative costs and benefits in such features as divisional libraries and special subject rooms. They point out that there exists no scientific basis for evaluating library buildings and therefore for planning them. And it may be inferred from previous paragraphs that the problem of growth calls for systematic investigation.

Criteria would be useful for estimating space allowances, particularly in such units as delivery halls and circulation rooms, and in those sections which may have to function in new ways if electrical and mechanical selectors become generally used. There are questions too about flexibility, and whether it should be applied to a building as a whole; and the same about expansibility, since even it must have limits.

There also are insufficiencies to be overcome on the constructional side. As already indicated, the possibilities here are fairly well established and available, except possibly on such matters as air-treatment, lighting, and the costs entailed in the unit method. Presumably for want of familiarity with known resources, however, or of funds or assurance to employ them, libraries have lagged in utilizing the contributions of engineering. This is recognized as the more unfortunate because of what that science may be able to do to correct the mechanical omissions which have handicapped administration and service in the past.

A dominant theme must be manifest to all who examine the thinking and developments of recent years. Librarians of the 1940's and 1950's have sought above all else to define the task of their institutions and to shape their buildings so as to get it done. This effort naturally has shown in their platforms of work, in the accommodations they have specified for readers, materials and staff, and consequently in the arrangements and fittings they recommend. It gives to functionalism the direction and meaning without which that much-bruited principle would have little application to the rearing of library buildings.

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ERNEST J. REECE


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