

Struggle with Impossibilities

A Record of Development of the Matsushita Memorial Library
of the Faculty of Engineering, Keio University

不可能との闘い

慶應義塾大学工学部図書館のこれまでの歩み

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中 島 紘 一

要 旨

昭和46年から47年にかけて、慶應義塾大学工学部は東京都小金井市の校舎から横浜市港北区の矢上台新築校舎に移転した。小金井時代 100 坪余にすぎなかった工学図書館もこれに合わせて移転を完了し、新キャンパスでは 700 余坪の規模を誇る近代的な情報センターに変貌した。10 ケ年計画に基くその業務はまだ端緒についたばかりだが、一学部に付属する図書館としての規模と、理工系学部の主要資料の集中管理という企てについて、この図書館の将来は注目されてよい。

本稿では、1966 年に始まり、現在 (1972 年 9 月) に至った図書館の近代化計画の過程を、主として管理とサービスの面から回顧し、合わせて将来の発展のコースを展望した。700 坪の図書館の完成により弱小施設の悩みは一応解消された。しかし、運営の残りの 2 本柱である資金と人員の不足の問題はいぜん解決をみぬままに持越されている。これらの本質的な解決は一私立大学の一部局図書館の求めてとうてい得られる性格のものではないので、全国的な視野に立った情報の流通システムと協力体制の整備が一日も早く実現することが望まれる。

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I. Introduction

On October 4, 1971, a new library opened in a corner of the campus of the Faculty of Engineering, Keio University, in Yokohama. Specializing in physical sciences and engineering, it was named Matsushita Memorial Library after a wealthy industrialist, Mr. Konosuke Matsushita, who had donated the entire construction cost. Despite the newness of its three-storied building with 24,700 square feet of floor space, it was not an entirely new library but a newly housed continuation of the so-called library in a shabby storehouse on the abandoned Tokyo campus of the Faculty of Engineering.

The completed library in part reflected a growing awareness in society of the importance of information, but it was mostly due to strenuous efforts of a few people who, seizing upon the opportuneness of the campus move, planned and acted with firm belief that there must be a modernized library to meet coming user demands of diverse nature.

The possession of a library building, of course, was nothing more than a beginning. Library modernization, in the true sense of the term, must have something to do with library services. Thus, the building itself was only a partial realization of the ideas of those who were to work within it.

With completion of the building marking realization of one objective, it may be worthwhile here to look back to what led to the present and to consider what is taking place now and what must be done in the future. Desire to record the development of the library¹⁾ was the major incentive for the writing of this

paper, but the writer will be doubly rewarded through if others, especially persons in other countries, will come to know of the existence of a library which is trying to serve the Japanese scientific community as effectively as possible.

The Matsushita Memorial Library, introduced in the following pages, is still in a formative stage. Because of the brevity of its operation, the scope of its services remains rudimentary and its collections total only 55,000 books and bound periodical volumes, most of them from the former Tokyo campus.

II. Surrounding Features of the Library

A. Host Organization

The Faculty of Engineering, one of the six faculties comprising Keio University, has grown steadily since its birth 30 years ago. When it was inaugurated in 1942, the Faculty was an independent institute called the Fujihara Institute of Technology, named after its founder. The aim of the Institute was to produce technicians to satisfy the needs of industrial firms. Soon after it was transformed into a faculty of Keio University for financial and operational reasons, it suffered devastating damage from bombs, wiping out or crippling most of its laboratories and equipment. Its hardships lasted for some years after the war. Moving from place to place in pursuit of better facilities, the Faculty finally found a campus in suburban Tokyo, where it enjoyed relatively longer stability, enriching its educational programs and adding new departments. In early 1972, when it moved to the present campus in what is

supposed to be its final move, it had the following five departments:

Mechanical Engineering,
Electrical Engineering,
Applied Chemistry,
Instrumentation Engineering, and
Administration Engineering (Business Management, O.R., I.E. etc.).

These five departments offer more than one hundred courses, each covering a particular subject specialty.

The Faculty's many relocations were expensive, of course, and always there was a bitter shortage of funds, one consequence of which was that development of its library was seriously handicapped. Priority had to be given to betterment of laboratory equipment and experimental apparatus. The concept of the library as a common facility for all departments and all of their staff members and students had no place in the minds of administrators.

Incidentally, neglect of common facilities has long been characteristic of Japanese educational institutions, though in recent years it has begun to diminish. In this context, the emergence of a modern library on a campus of prestigious Keio University has much significance.

In comparison with the previous ramshackle Tokyo suburban campus with its commuting inconvenience, the new Yokohama location has at least moderate geographical advantages. Nearby is a station of the Toyoko electric line that connects directly with the centers of Tokyo and Yokohama. The most important business-industrial complex of Japan is within a 15-mile radius.

The ease of communication (particularly by telephone) and the close accessibility to the industrial center are both of great importance for the library, as its future depends, for reasons given elsewhere, on the extent of the use made of it by industrialists.

B. Users

The prospective users of the library include:
Faculty members,
Advanced (graduate) students in doctoral and master's programs,

Undergraduates, and
Non-campus users.

The Faculty had 3,400 graduate and undergraduate students and 170 faculty members as

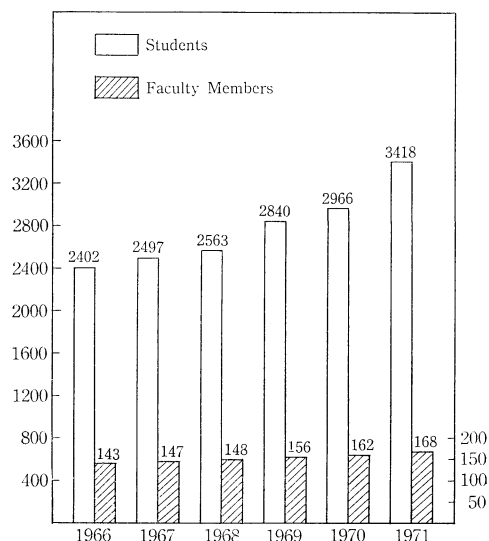


Fig. 1. Increase in Numbers of Students and Faculty Members: 1966-1971.

of June of 1971. Figure 1 shows the gradual increase in the number of students and teachers in recent years. All these students study on a fulltime basis, commuting either from homes or nearby lodgings. No dormitory is available at the school.

Since there is a clear distinction of library use between graduate and undergraduate students, it is necessary to handle the two groups separately. The graduate students, more research-oriented, tend to seek information from European and American periodical publications. On the other hand, students on the undergraduate level are likely to regard the library as a place to sit or chat, or at best to read Japanese textbooks of their own or library materials in Japanese. In general, graduate students are the heaviest users of the library among on-campus patrons. Fig. 2, which shows the number of inter-library loan requests in 1967 by user type, exemplifies the statement.

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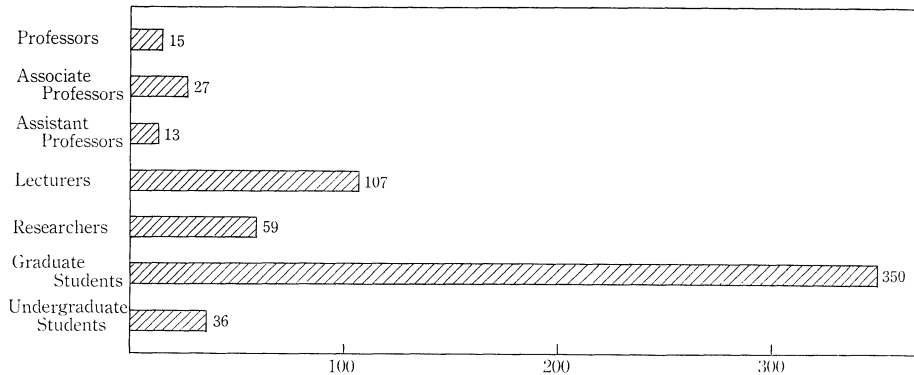


Fig. 2. Comparison of Inter-library Loan Requests by User Type (1967).

The reserve book system, typical of library use by American college students, has not yet grown popular as an adjunct to teaching in the higher education of this country. This is true in this Faculty of Engineering. Thus, there has never been explicit cooperation between faculty members and the librarian regarding student use of the library.

Non-campus users consist mainly of alumni, industrial scientists and engineers, and students from other engineering schools. Sometimes, the alumni users are identical with industrial scientists or engineers, as most of the graduates find employment in industry. Because good scientific libraries or information centers open to the public are rare in this country, alumni return to their school as the most easily accessible source of information. For this reason, it is a sort of requirement for every academic scientific library to provide these people with services on an equal basis with on-campus users. Nonetheless, in reality many libraries, notably national university libraries, discourage use by non-campus users by imposing cumbersome application procedures.

C. Strong Demand for Services

As stated earlier, the Faculty of Engineering has five departments with more than one hundred specialized courses. At the new campus in Yokohama, no department maintains its own library, though some formerly did in Tokyo due of disadvantageous location in rela-

tion to the main library.

Prior to the construction of the new campus, serious consideration was given to the way in which the limited book budget of the Faculty could be spent in the most effective manner. Alarmed by the increasing amount of information produced in Japan and abroad, the Faculty concluded that it could no longer afford the luxury of duplicate purchases and needed control of one kind or another over departmental purchase of books and periodicals. As a result, the Faculty found a solution for it, in spite of its inherent inconvenience, in the centralization of library functions at one point on the campus. The Matsushita Memorial Library, thus, was so organized that all books and serials to be purchased with budget funds should be selected, ordered, processed, and stored by it.

With this arrangement, requests for new book acquisitions and for library services increased visibly. Fig. 3 shows the effect of centralization on the photocopy service. Four months after the new operation began, the trend toward increased use in comparison with use in the period from October of 1970 to September of 1971 (before centralization) became clear.

For the library, with its obligation to serve a fixed total of 3,400 students and 170 faculty members, as well as numerous non-campus patrons, centralization obviously required staff improvement. Yet, this, naggingly persistent since the new library became operative, is the most difficult problem to solve. Blocked

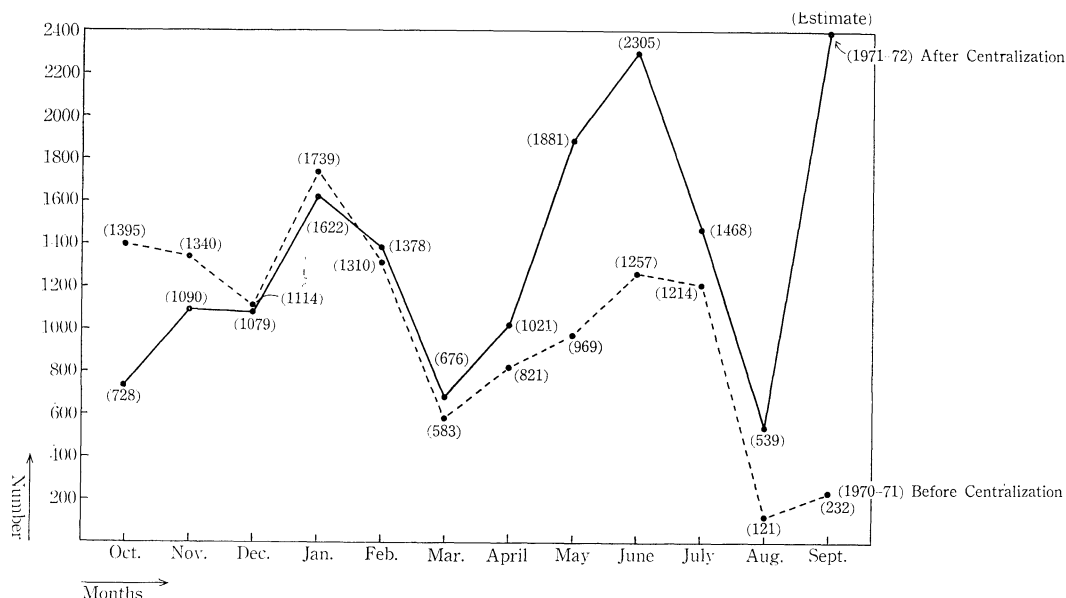


Fig. 3. Comparison of Monthly Total for Photocopy Requests Before and After Centralization.

by the insurmountably tight personnel policy of the university, the library is able neither to recruit new staff nor to reduce the work load created by the new arrangement. As of September, 1972, it operates with a total of twelve professional and clerical members, far short of the number necessary to maintain even the minimum grade of performance in its services.

In Japan, where the tempo of progress is painfully slow for the library of science and technology, the emergence of a centralized library is regarded as a noticeable advance. It is, however, awfully vulnerable to pressures from unsatisfied users. Failure in meeting even the most primitive demand will frustrate them and may lead eventually to destruction of the system altogether. To avoid catastrophe, the staff problem is the first hurdle over which the library must jump.

D. Detriments to Effective Library Services

Professional librarianship in science and technology is still in an early stage of development in Japan. Needless to say, effective library services need to be backed by a well-organized and nationwide network of resources and faci-

lities. What makes operation of the Matsushita Memorial Library difficult is the persistence of shortcomings characteristic of any system that is still in the process of developing. The stated difficulty in recruiting new staff is in reality doubled by the limited availability of professional librarians. As late as 1972, Keio University is still the only institute offering college-level education for librarianship. During the twenty years of its history, the school has sent out nearly 900 graduates to libraries of varying types ranging from public to special.²⁾ These people, mission-conscious with self-aroused discipline, have done much to upgrade the quality of library services. But, despite their impressive number, these graduates as a group have failed to constitute a healthy profession, the foundation on which any professionalism thrives. A partial reason for this failure may be that the majority of the graduates have been women, who, following the traditional Japanese life pattern, have retired to housewifely activity after a few years of employment. Thus, recruiting in practice has had to be limited to new graduates with no professional experience, and the recruits

can be expected to retire in a couple of years just as they begin to acquire knowledge and skill. This recruiting cycle obviously jeopardizes successful development of library operations. Moreover, it is relatively hard to find graduates who show willingness to work in a library of science and technology.

The shortage of professional librarians is having the profound consequence of delaying the upgrading of library activities. The lack of effective national union catalogs, for instance, deters the organization of a nationwide library network. An up-to-date scientific edition of the union catalog of serials, a vital tool in providing documents, is now urgently needed. With its out-dated 1964 edition for foreign serials alone available, the scientific library can hardly meet the varying information needs of its users, who want to be kept well informed of current developments. Especially because of the explosive increase in the number of scientific journals since 1965, efforts must be directed to collecting as many individual holding lists published in isolation as possible in order to maintain the quality of document procurement services. Such efforts are all the more needed because increased coverage in abstracting services has ramified sources of information.

Yet, even with well-organized bibliographic control over the location of information sources, it is still not an easy task to maintain service of first-rate quality. The reason is that there is no assurance that a certain requested document is available at such and such an institution. Notably uncertain is the availability of such information sources as technical reports, conference papers or proceedings, and monographs, most of them from the U.S. and European countries. The lack of an effective organization to function as a central depository has been a major factor perpetuating this deplorable situation. The Science and Technology Division of the National Diet Library, supposedly the central depository of the nation for the field concerned, cannot be relied on wholly until its operating principle is improved to give users easier access to its collections and

the services. Comprehensiveness in its acquisition of domestic publications, as well as enrichment of its books from abroad, is expected of the library, not to speak of elimination of operational red tape. The National Diet Library can be regarded as the central depository in the true sense of the word only after successful solution of these problems.

The Japan Information Center of Science and Technology (JICST), a profit-conscious organization intended mainly to serve the Japanese industrial community, has contributed notably to enhancement of information handling. Providing most of the conceivable services relating to scientific information, the center has succeeded, to some extent, in winning the confidence of its users, assuring that they do not mind the high prices charged for the services. Nevertheless, it has a peculiar weakness in that its collection consists mainly of foreign and domestic periodicals. Some well-known non-periodical sources such as NASA and AEC documents are also in the collection, but little attention has been paid to acquisition of research monographs.

Observing that its industrial users tended to concentrate on publications going back only five years, the JICST a few years ago decided to remove regularly from its stacks most materials more than five years old. It adopted this policy partly to save storage space. At the same time, however, it meant that the JICST gave up all semblance as a central organization in terms of storage of information sources.

Thus, with both the NDL and the JICST lacking qualifications as a central depository for the nation, what is needed to fill the gap is an effective information network involving all research libraries ranging from industrial to academic.

In reality, however, industrial libraries, operating in isolation, are reluctant to open their collections for use by outsiders, reflecting the severity of their competitive business attitude. Academic libraries, particularly those of private colleges and universities, comprising a majority of such libraries, are struggling in varying degrees with lack of funds, lack of

personnel, lack of collection, and lack of physical accommodations. Moreover, by and large most of their information sources are decentralized in numerous laboratory branches with little or even no bibliographic control over them.

There is, admittedly, a movement to organize a nation-wide information network of libraries of one kind or another, consideration of it so far has been very abstract. No practical ways have yet been found to overcome the prevailing situation.³⁾

In addition to the detrimental factors described above, the scientific library in Japan has to cope with still another discouraging handicap. It is the absence of—or at best the difficult availability of—older portions of core journals, particularly for those published before 1940. Although demands for these are not as frequent as those for recent issues, they still are of vital importance in educational and research activities in the academic community. Such is a brief outline of the environment in which the Matsushita Memorial Library has begun operation as a library of science and technology.

III. Historical Development

A. Before Modernization

Until 1965, before any attempt at modernization was made, the predecessor of the Matsushita Memorial Library did not have the attributes entitling it to be called a library. Housed in a corner of the wooden quarters of the Department of Mechanical Engineering, it was staffed with four persons of little more than clerical competence and had less than 10,000 bound periodicals and a couple of thousands of outdated books of doubtful value. No services other than circulation and photocopying were provided, and the users were not allowed to enter the stack area. Besides, students were not given the right to take books out. No books of any type, even reference tools and bibliographies, were readily accessible to those who might want to use them. The card catalog was in disarray, with no usable serial records. The circulation desk was at-

tended by one of the four clerks, who took turns at this duty, going back and forth between the desk and the stacks carrying requested books.

Inside the office, more than half of the technical processing consisted of registering, cataloging and turning over books to laboratories. The morale of the staff was so low that drastic measures were urgently needed to vitalize the operations.

Faculty members and students, though some were totally indifferent, were increasingly irritated by the inability of the library to meet their growing needs for informational materials. Sometime during this period, the university authority decided to provide a new campus in a few years for the Faculty of Engineering with the understanding that its size and the extent of its facilities were to be identical with those of old campus. The requirement meant that the new library could not exceed 3,859 square feet for its entire space, hardly worthy of serious consideration.

From the library's viewpoint, it was imperative, therefore, to upgrade the quality of its services, demonstrate to the users the importance of the library on the campus, and gain their firm support. It needed to build reasonable foundation on which its development, in close cooperation with the patrons, could contribute to achievement of the educational goal of the Faculty of Engineering.

B. Beginning of Reforms

In May of 1966, the first stage of reforms began. Joined by a male recruit with a professional background, a graduate of Keio Library School, the reinforced staff began to contemplate what should and could be done to overcome its stagnancy. Through careful analysis and discussion, it was concluded that servicing reforms were immediately feasible without additional staffing and funds. The staff then began to prepare a timetable for action on the following measures:

1. Reshelving of materials by types of content:
 - a. To relocate reference tools, indexes, abstracts, etc. in a newly arranged

- corner of the reading area
- b. To reshelve bound periodicals alphabetically by title
- c. To display current periodical issues in a corner of the reading area
- d. To reshelve books in the order of their call numbers
- 2. Discontinuation of the closed-stack system:
 - a. Preparation of a library guide for an open-stack system
 - b. Relocation of the circulation desk
- 3. Introduction of new services:
 - a. Loan service to students
 - b. Inter-library loans
 - c. Reference service
- 4. Improvement of existing services:
 - a. Photocopy service
 - b. Circulation under the open-stack system

For successful reform of the user services, it was necessary to reorganize the records of materials owned by the library, particularly its serials, which a majority of users wanted to use. Thus, an extensive check of serial holdings, both current and retrospective, was made. Based on the result, a mimeographed holding list was compiled and distributed to prospective users on and off the campus.

Encouraged by the progressive attitude of the director, the staff members worked on the reforms. By the end of March of 1967, all the proposed changes listed above had been made, with the anticipated results and effects.

The most difficult and time-consuming of all the reforms was the introduction of an inter-library loan service. The service itself was indispensable to the functioning of the library, so limited were its own materials as against the diversity of user requests. What caused difficulty was the lack of effective tools to locate requested information, as well as the small number of institutions willing to cooperate.

The next step, after the remodeling of the reader services and part of the technical processing, was to do something about the staff inadequacy. Successful execution of the reform program needed more and better qualified professional librarians. However, it was absolutely

impossible to acquire additional personnel, due to the ultra-tight budget of the university. The only conceivable way, therefore, was to replace, one by one and year by year, the old personnel with new university graduates of professional background, leaving the total number unchanged. In this way, the staff inadequacy was to some degree to be alleviated through increased productivity of each individual staff member. By the time the new library opened in 1971, not a single person of pre-reform days, except for the writer, remained among the working members. Some were transferred to other positions, while others retired or quit. At the same time, through in-service training, the quality of work of members who had no professional training was improved. Through these reforms, the library, for the first time in its history, was on the right road.

C. Insurmountable Obstacles

As the reforms went on, it became very clear that some obstacles might soon bring operations to a total deadlock. Among these, the most notable was the shortage of space. Packed in an area of less than 2,000 square feet, the students were constantly competing for sitting space. Moreover, with floor space of 1,600 square feet for the library staff and the housing of books, an expansion was hardly feasible. The university administration turned down petitions for more space, pointing out that the campus would be moved sooner or later.

The collection housed in such limited quarters could never suffice quantitatively to meet growing user needs. Circulation desk statistics revealed that the library was hardly able to comply with three in ten requests. The collection included neither essential secondary publications nor some of the core journals closely related to the educational program of the faculty. Available journal titles rarely had complete back runs, with most of those of pre-war years absolutely lacking.

The weakness of the collection was made all the worse by the phenomenal increase in the number of new journals published. To have these, even to a moderate degree, was out of

the question because of the space limitation and shortage of funds. At this stage, the library found itself in a bitter dilemma: the better it wanted to serve the client, the more incapable it was of doing so. Better services can be realized only when a library has a good building, a well-organized collection of good materials and a capable staff of adequate size.

The situation of the library in the late 60s was exactly the reverse of what it should have been. All that could be done, however, seemed to be to wait for the new campus to be constructed, for the library to be planned anew, and for the patrons to support its ultimate goal.

D. Campus Transfer as a Turning Point

When the transfer of the campus became a matter of time, the library concentrated on planning for a new library building. As stated earlier, all planning had to observe the bitter guideline that the scope and size of every organizational unit must be no larger than on the old campus.

Following it dutifully meant planning a library with less than 4,000 square feet of floor space. To break this unrealistic requirement, an all-out campaign had to be waged for more awareness in the administration of the potential usefulness of the library. It was a basic campaign tactic to concentrate on particular individuals who were influential in policy formulation of the Faculty of Engineering. Every conceivable method, ranging from letters to direct appeals, was employed. The performance of the medical school library of Keio University as a model library was brought to their attention. The functioning of American academic scientific libraries were pointed out, helping them to visualize future courses. Equal efforts were directed toward an improved image of the library by showing its capability to perform services that the users had never before thought feasible.

Step by step, the situation turned hopeful with regard to space allocation. By the time the planning neared completion, the proposed size of the library was three times larger than initially allotted. When one considers the

severity of the competition for more space among many organizational units, the increase obtained must be regarded as satisfactory.

Yet, the approved size was only half of that specified in the library's plan, at least 25,000 square feet of floor space (See Appendix). Thus, the hectic preparatory stage was about to close with the library's goal only half achieved.

As it turned out, the drama had a second phase. In early January of 1970, it was learned that the chairman of the Matsushita Electric Industrial Co., had offered to donate funds for the construction of a new library building. On going over the building plan submitted by the school representatives, Mr. Konosuke Matsushita, a highly esteemed industrialist, intimated that he was interested in a larger library. He knew that the projected library would be too small to be functional in any real sense in meeting what is commonly referred to as the "Era of Information." Thus, the original plan, which had been rejected as too expensive, was suddenly revived, calling for a library twice the size the school authorities had approved.

The soul-exhausting struggle for library modernization, lasting nearly six years, finally had its first reward when the staff attended the opening ceremony for the completed new building late in 1971. Table 1 gives comparative figures of space for the old and new libraries.

The floor plan of the new library is shown in Fig. 4. The third floor, which is not included in the figure, is a large conference room inten-

Table 1. Comparison of Space Allocation for Old and New Libraries

	Old (Tokyo)	New (Yokohama)	Rate of Increase
Reading Area	sq.ft. 1,707	sq.ft. 10,348	6.1
Stack Area	1,671	5,192	3.1
Work Area	445	4,730	10.6
Conference Rooms	0	1,423	
Common Area	36	3,023	84.0
Total	3,859	24,716	6.4

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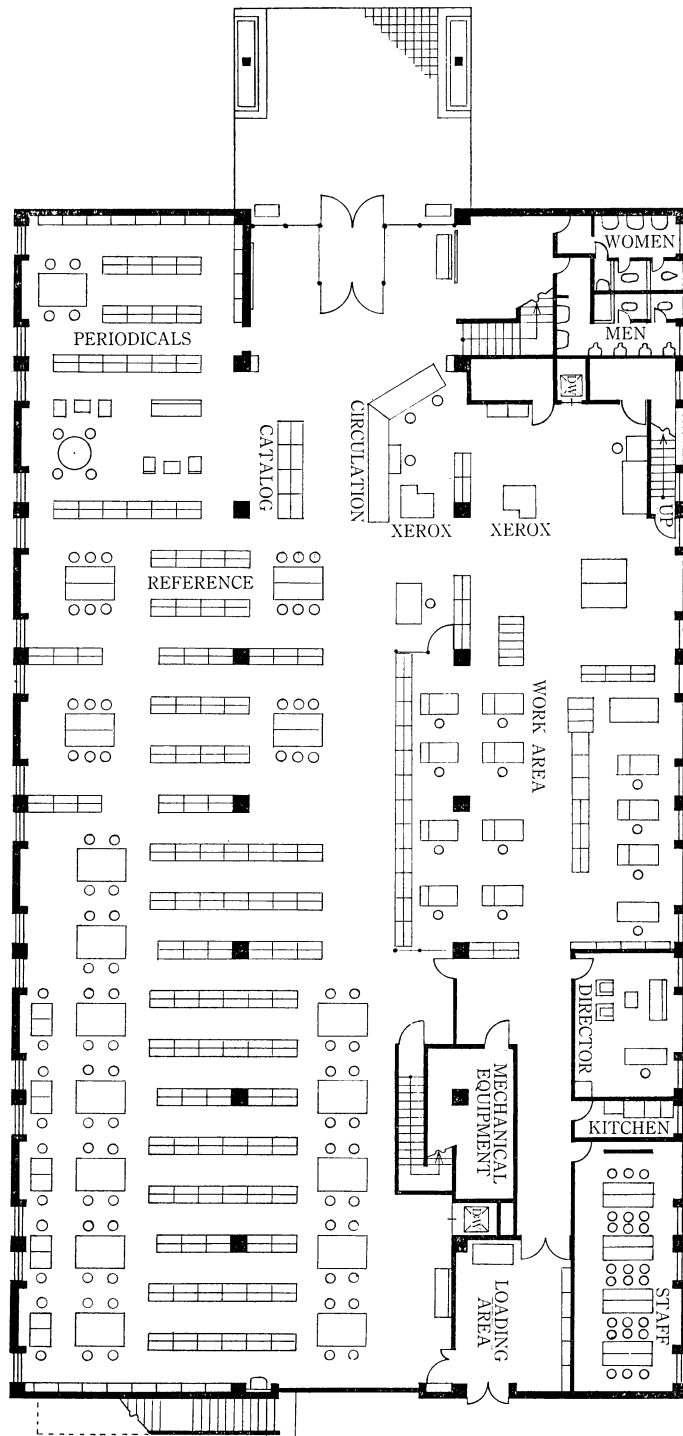


Fig. 4-1. Floor plan of the Matsushita Memorial Library: First Floor.

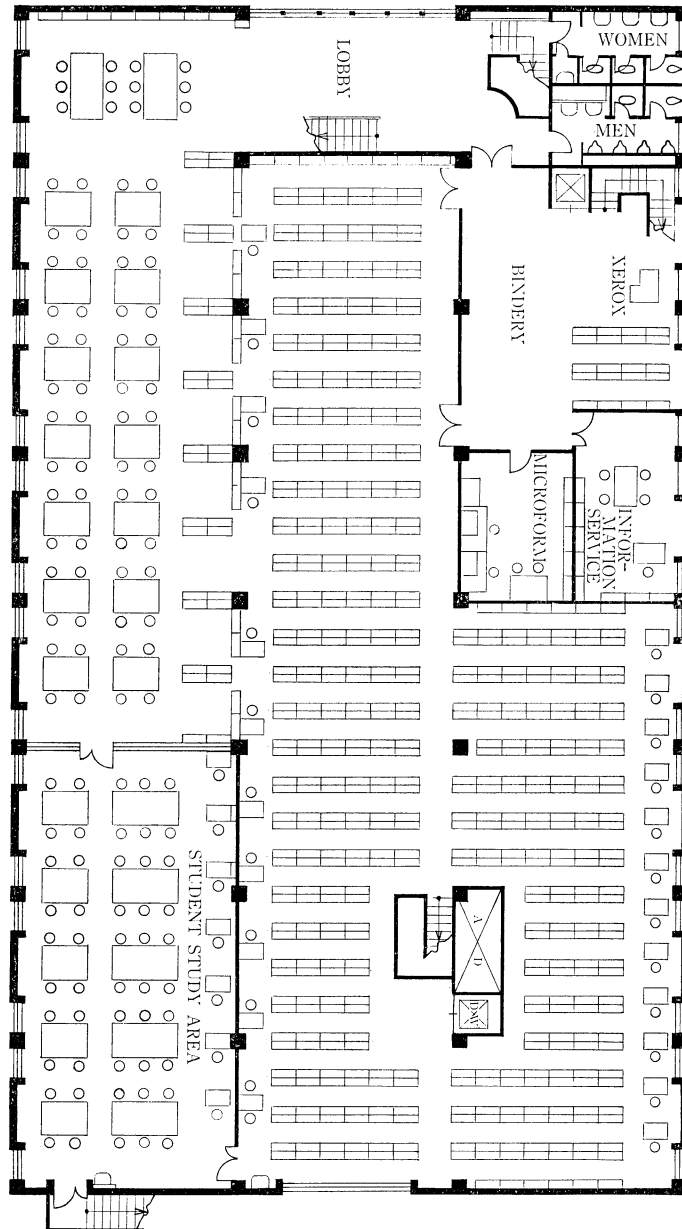


Fig. 4-2. Second Floor.

ed for use by Faculty professors. In the new library, the number of seats increased from 40 to 270, while the shelving capacity for the collection increased from 12,000 to 88,000 volumes.

Given such an improved physical foundation,

a new phase of modernizing the library could be started. In this sense, the transfer of the campus was truly a turning point in the history of the Faculty of Engineering library.

In sharp contrast to the markedly improved physical facilities, however, the staff was not

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Table 2. Monthly Total of Photocopy Requests from JICST October 1971—September 1972.

	1971 Oct.	Nov.	Dec.	1972 Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
Requested	514	678	687	732	810	772	632	701	761	688	500	680
Processed	476	608	609	665	766	711	586	651	707	631	458	604
Balance	38	71	78	67	44	61	46	50	54	57	42	76
Rate of Unprocessed	(%) 7.4	10.5	11.4	9.2	5.4	7.9	7.3	7.1	7.1	8.3	8.4	11.2

proportionately increased. This was because the planning of the building had not been coordinated with organizational adjustments. Bureaucratic inflexibility was largely to blame for this, but a contributing cause was the relative neglect of this in the modernization campaign.

E. Cooperation with JICST

With the detriment of space limitation now eliminated, immediate steps were taken to improve the collection. As the core of any scientific library, the periodical holdings, particularly of back issues, are of vital importance. A way to lessen the library's weakness in this respect came when agreement was reached between it and the Japan Information Center of Science and Technology (JICST) whereby the Matsushita Memorial Library, as one of three depositories for JICST, was to receive half the bound periodicals in the JICST collection when more than five years old on a regular basis.

The materials thus obtained, with a wide coverage of science and technology fields, include all Russian, and some Western-language publications in the JICST holdings. Atomic energy reports and selected patent specifications from some advanced countries are also among them. As of 1971, the total number of bound periodicals so deposited was 15,000, covering the seven years from 1958 to 1964. Roughly, 4,000 to 5,000 bound volumes are expected each year from 1972. Requests for the photocopying of information in these periodicals and reports can be sent either to the JICST or directly to the library. Most such requests until September of 1972 came through the JICST, as the change in location of the 1958-64 volumes was not yet

widely known. Table 2 shows the monthly number of photocopy requests received through the JICST.

IV. Objectives versus Activities

A. Objectives

In the planning, objectives for the library were set forth by the staff. They included (1) an overall objective, (2) operational emphasis, and (3) operational details. As all current activities are supposedly in harmony with these objectives, it may be helpful to consider some of them here briefly.

1. Overall objective

The library will help to stimulate and enrich education and research of Keio University in the field of science and technology by facilitating the acquisition, processing, use, distribution, and retrieval of information in this field.

It also will assist research, in the prescribed area, of persons associated with institutions other than Keio University through various information services.

2. Operational emphasis

- a. As much effort as possible will be made to ease the information-collecting load of the researcher.
- b. Assistance will be given to providing better textbooks, improving teaching methods, and promoting teaching efficiency through information services.
- c. Self-motivated studies by students will be furthered.
- d. To establish domestic and international information exchanges, there

will be active participation in cooperative efforts of libraries in the field of science and technology.

- e. Rapid and accurate information services will be provided for users in and out of Keio University.
- f. The training of capable information specialists will be fostered.
- g. Domestic and international cooperation in the compilation of bibliographies will be welcomed.

3. Operational Details

- a. The initial stage (one to three years)
 - 1) Collection development

Media to be collected include:

 - a) textbooks, monographs, conference papers and proceedings.
 - b) serial publications
 - c) irregular publications from technical colleges and universities
 - d) government publications, technical reports, company research reports
 - e) dictionaries, treatises, handbooks, databooks
 - f) patent specifications, industrial standards
 - g) indexes, abstracts, and other related publications, and
 - h) audio-visual materials
 - 2) Circulation of the materials collected under the guidelines given above
 - 3) Photocopying of materials as requested
 - 4) Procurement of materials not available in the library on inter-library loan
 - 5) Reference service (to faculty members)

The scope is limited to those not requiring much time.
 - 6) Typing service
 - 7) Current awareness service

Limited for the time being to sheets giving the contents of new publications.
- b. The second stage (after three years)

Based on the materials accumulated over the first three years, the second stage will be concentrated on implementation of the following services:

 - 1) An enlarged and improved reference service

- 2) Literature searching
- 3) Compilation of bibliographies
- 4) Organization of an information network in science and technology
- 5) Education of specialists
- c. The third stage (after five years)
 - 1) Introduction of the EDP system for services and operations
 - 2) Translation service
 - 3) Participation in domestic and international bibliographic control ventures.

The objectives stated above are essentially idealistic. They have not been endorsed and promised financial support by the school administrators. To make their implementation more realistic, the library must seek additional funds from non-campus sources. The success of the library, in this sense, depends upon the extent to which it becomes of value to industrial users, who are the potential donors of funds.

B. Current Activities

As of September of 1972, after a full year of operating experience in the new building, the library is on some of the projects listed above to be carried out in the first stage. In essence, however, little more has been done than to continue what was already being done on the former Tokyo campus. These projects include (1) collection development, (2) circulation, (3) photocopying, and (4) inter-library loans and reference services.

1. Collection development

In keeping with the pattern of requests for information sources in a scientific library, continuous emphasis has been placed on the serial collection both by acquiring new titles and by filling in gaps in titles already held. The collection consists mainly of serials in Japanese, English, German, and Russian, with some from French-speaking nations. The extent to which serials predominate in the whole collection is indicated in Fig. 5, which shows the percentages of budget spending by types of material in 1971. As the annual budget increase is painfully small, it is hard to keep pace with the publishing output.

Table 3 gives changes in the annual pro-

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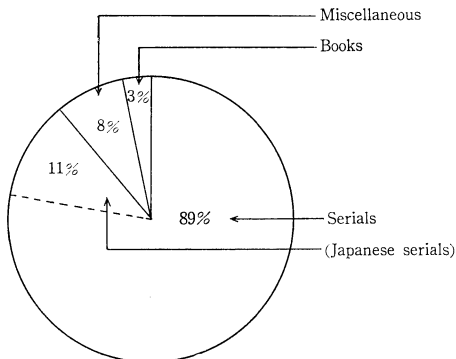


Fig. 5. Percentages of Budget Spending by Material Type: 1971.

curement budget from 1966 to 1972. As is clearly visible in Fig. 5, nearly 90% of the total budget is spent on current subscription to 1,584 serials, of which 860 are from foreign sources. These 860 foreign titles occupy almost 80% of the total procurement budget. Thus, use of USBE services is most helpful in acquiring back numbers lacking in the collection.

Equally important is the free acquisition of weeded periodicals from industrial libraries. The industrial libraries, by and large struggling with space shortages, are important sources of older materials not easily available from the USBE or other commercial suppliers.

Table 3. Annual Book Budgets: 1966-1972

	Total Amount		Rate of Increase
	Yen	Dollars*	
1966	5,175,000	14,375	
1967	5,746,000	15,961	11.0(%)
1968	6,353,000	17,647	10.6
1969	6,730,000	18,694	5.9
1970	7,272,000	20,200	7.8
1971	9,170,000	29,773	26.1
1972	10,000,000	32,468	9.0

* Dollars are computed on the official rate of exchange \$1=¥360 until 1970. For 1971-72, a new rate \$1=¥308 is applied due to Yen revaluation.

2. Circulation

Doing away entirely with the inconvenient shelving arrangements in the Tokyo library, the new library, using the open-stack system, has placed materials in a manner that the user has ready access to whatever meets his specific need. Thus, there are corners for current periodicals, indexes and abstracts, reference tools, bound periodicals, and textbooks respectively. Students can check out books for two weeks, with renewal permitted if the books have not been requested by other users. Periodicals and reference tools cannot be borrowed except overnight. Fig. 6 shows the numbers of books borrowed in recent years.

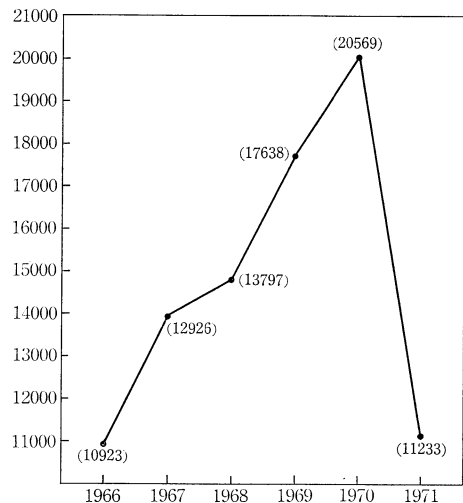


Fig. 6. Numbers of Books Loaned: 1966-1971
Library was closed two months for moving, which caused a sharp decline in 1971.

3. Photocopying

This library regards the photocopy service as an indispensable part of the circulation function. Based on that principle, two of its three Xerox machines are installed near the circulation desk, with the third in the work area for use in making copies ordered by mail for outside users. Students can freely use the machines on a do-it-yourself basis under the operating guidance of circulation attendant. As the machines are not yet coin-operated, the

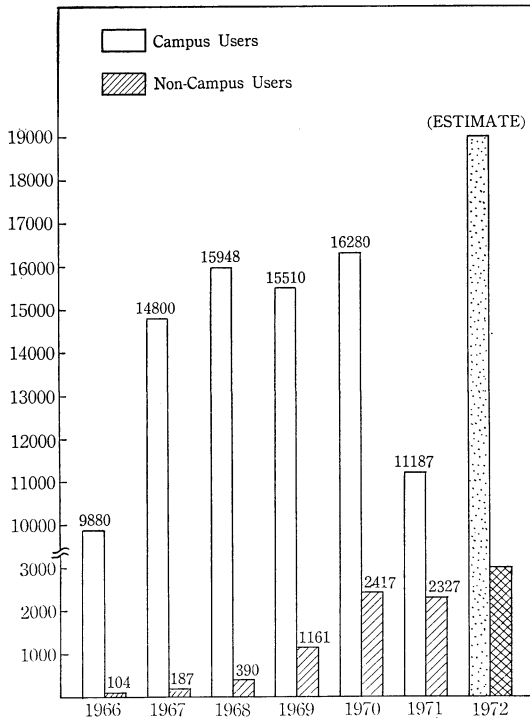


Fig. 7. Number of Photocopy Requests by Campus and Non-Campus Users: 1966-1971.

attendant must perform a cashier's function. A continuous effort to simplify application procedures has contributed to a steady increase in the number of requests, notably in those from industrial users. They can order photocopies in any manner, by mail or by telephone. The increasing trend is shown in Fig. 7. Not included are JICST requests, which are handled separately.

An outstanding feature of the photocopy service is the rapidity with which the library processes the requests from industrial users. On an average, the user receives requested copies in two to three days after he has placed an order. Rapidity, the library believes, is one of the essential requirements to satisfy users. This seems to be an important reason for the increase in requests.

4. Inter-library loan and reference services

As shown in Fig. 8, the inter-library loan service has grown substantially in the past six

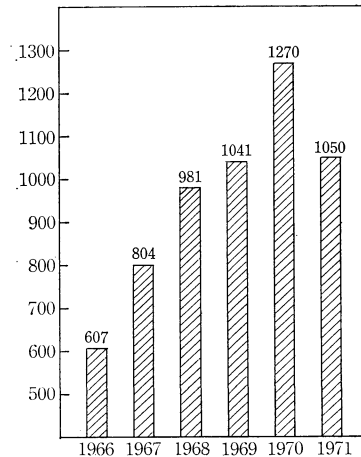


Fig. 8. Inter-library Loan Requests Sent to Other Institutions: 1966-1971.

years. Commenced in 1966, it won wide acceptance among graduate students, who were its heaviest users. The requests sent to other institutions are, in most cases, filled with photocopies of the parts the users need.

Up to the present, most requests have been for articles in journals which are relatively easy to handle. For requests involving monographs, conference papers, or technical reports, the process becomes more involved, requiring a staff with wide experience and professional knowledge.

The reference function of the library is mostly devoted to verifying and locating such literature as is not easily covered by the inter-library loan service. However, due to the internal and external handicaps mentioned earlier, this service is not of very high quality. For its improvement, it is imperative for the library to have a highly trained staff and a well-organized collection of secondary publications.

V. Conclusion

An objective is a kind of promise made to patrons. The Matsushita Memorial Library, in the effort to obtain a good physical foundation at the time of transferring the campus, made numbers of promises to prospective

patrons. Not to let even one of these go unfilled is an inescapable responsibility of the library. The obstacles being what they are, what is needed is creative thinking focused on:

1. Fund-raising,
2. Staff recruitment and enrichment,
3. Promotion of local cooperation in acquisition, use, and information exchange, and
4. Establishment of a system which ensures managerial flexibility.

Item 4 is particularly important in that much of the present difficulty is a consequence of the lack of such flexibility. Under the current system, if left unchanged, the library will be unable to obtain budget and personnel increases in proportion to the increase in the numbers of faculty members and students. The latter increase must be properly reflected in strengthening of the library to serve their needs.

On a nationwide scale, there is obvious need for an organization specializing in technical reports, conference proceedings and papers, monographs, and other types of media in the science and technology fields. This might be met by strengthening the functions of an existing institution such as NDL or JICST. Some may argue that the same result could be achieved more effectively through a national information network, but the planners of such a system would have to keep it in mind that available participants in it are severely limited in number and far from homogeneous in operational qualities. Moreover, there is no assurance that the combined total of national information resources would suffice to meet the diverse needs of all potential users throughout the nation.

Despite the numerous obstacles to development of the profession, there are factors that

will no doubt give an impetus to evolution and innovation in the management of scientific libraries or information centers. Some of these are:

1. High-level industrial activities,
2. Increasing social awareness of the importance of the storage, retrieval and use of information,
3. More emphasis on aid by the national government for enrichment of social capital,
4. Growing efforts of the School of Library and Information Science, Keio University, to produce more professional librarians, and
5. Increasing availability of low-cost data-processing equipment on the domestic market.

Thus, the future of the Matsushita Memorial Library will depend upon how well it adapts itself to new trends, organizes its services and gains the support of its users, thereby achieving harmony between the users and the library staff.

Notes and References

1. This is the second in the series of archival reports by the author. The first appeared in Japanese as: Nakajima, K. "An introductory report on planning a new science and technology library in Keio University," *Library system*, vol. 6, 1967, p. 4-28.
2. Sawamoto, T. "Keio University School of Library and Information Science: Its past, present and future," *Library and information science*, no. 9, 1971, p. 11-23.
3. There is a project called "National Information System for Science and Technology" abbreviated as NIST.

APPENDIX

Building Program for the Matsushita Memorial Library of the Faculty of Engineering, Keio University*

I. Basic Requirements

A. Basic Policies and Requirements of the Library

1. *Traditional Library*

The library will follow traditional ways in operating, with primary attention given to published information, but adaptation of new concepts and medias will always be kept in mind in order for the library to cope swiftly with changing patterns of user demands.

2. *Centralized Library System*

All materials in the Faculty will, as a rule, be housed and controlled in the library so that a goal of maximum efficiency with minimum cost can be attained.

3. *The Adaptation of an Overall Free-access System*

All users will have direct access to any material owned by the library with:

- a) Use of free standing shelves, and
- b) The circulation desk as the only checking point.

4. *The Number of Users*

Undergraduate students	3,000
Graduate students.....	500
Faculty	200
Researchers.....	100
Industrial and business people.....	200
General public	100
Total: 4,100	

5. *Seating Capacity*

10 to 12% of the total prospective users.

With a possible building expansion in the future, the rate will go up to 20%.

Different types of study tables will be used, including individual carrels.

6. *Book Capacity*

Ultimate maximum: 250,000 volumes (with future expansion).

Maximum in the initial building: 100,000 (10 years after the building is completed).

7. *Staff*

Expected number of staff: 20 (professional 5, clerical assistants 15)

8. *Standards for Measurement*

- 1) Space per user.....25 square feet

* The original was first drafted in 1969 in connection with a course on academic library buildings at the University of Pittsburgh, Pittsburgh, Pa., U.S.A.

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- 2) Space per professional staff member.....100 square feet
- 3) Number of books housed per square foot14 volumes

9. *Services to the Clientele*

The library is planning to emphasize the following services to its users:

- 1) *Circulation Service*
We encourage extensive use of books, periodicals, documents, microforms, and other materials both in and out of the library.
- 2) *Photoduplication Service*
A library of science and technology is expected to meet a large amount of reproduction demand because the majority of users are likely to concentrate on the use of articles in periodicals. We are going to have sufficient facilities to meet this demand.
- 3) *Inter-library Loan Service*
Since scientific studies are international in nature, we will try to obtain all the information pertinent to the research and educational activities of the Faculty through international networks, as well as through the domestic network.
- 4) *Reference Service*
To enable users to make the best possible use of the library, we will introduce this service. It will help users to have maximum advantage of the materials housed in the library.
- 5) *Information Service*
All interested users will regularly be notified of current information in various subject fields in the form of indexes and/or abstracts. The library will also attempt to compile bibliographies in connection with this service.
- 6) *Patent Service*
Patent specifications from all major countries are of utmost importance to engineers, particularly to those who are associated with industry. The large volume of the demand for them suggests separation of their handling from the general reference and information services.
- 7) *Translation Service*
It is predicted that there will be much need for translation from foreign languages, such as Russian, Chinese, and French. The library will do its best to provide it.
- 8) *Editing Assistance for Faculty's Research Publications*
In order to give professional advice on the publishing of research journals and to disseminate them most effectively, the library will take partial responsibility for the editing and compiling of the Faculty's research publications.

These services must be supported by various administrative and technical processing activities which are operated behind the scene. These include acquisition, exchanges, cataloging, classification, indexing, abstracting, and shelving and/or display of books, periodicals, microforms, and other library materials.

B. Basic Requirements for Construction

1. Follow *function*. There is no need to consider ornamentation or monumentality. Be concerned with traffic patterns in the lobby and the main service area.
2. Take into consideration possible expansion in the future. This building is to suffice for *ten* years from the time it is completed. Devise architectural arrangements accordingly. *Modular* construction seems most desirable.
3. Keep the library as comfortable as possible. Pay attention to *acoustical* problems and the selection of materials.
4. Centralized *heating* and proper *ventilating* devices are necessary. Although cooling in summer is desirable, it depends on the availability of funds. There will be no rare books.
5. *Illumination* should provide the proper amount of light as determined by the best available research for close continuous reading and working. Special attention should be paid to the height of ceiling, which is also important in connection with flexibility.

6. Give easy *access* to library materials throughout the library.
7. In the selection of *furniture* and *equipment*, cost, durability, color, cleaning, comfort, and beauty should be considered. The librarian should be consulted before final decisions are made.

II. Various Areas

A. Administrative Office Area

1. *Space Requirements*

Use of Space	Occupants	Space (in sq. ft.)	Floor Preference
General Office	3	300	
Librarian's Office	2	200	
Accounting Office	3	150	
Conference Room	10	300	

2. *Spatial Relationships*

- 1) The librarian's office should be easily accessible for students and faculty, close to the technical processing area, and next to the general and accounting offices.
- 2) The general and accounting offices should have direct contact with each other, next to the librarian's office.
- 3) The conference room should, if possible, be close to the librarian's office.

3. *Mechanical and Electrical Requirements*

- 1) Telephone outlets
- 2) Electricity outlets for office machines

4. *Remarks*

- 1) Storage space for personnel records, forms, supplies, and so forth will be required by the general office.
- 2) Storage space for financial records, company directories, membership records, etc. will be needed by the accounting office.

B. Technical Processing Area

1. *Space Requirements*

Use of Space	Occupants	Space (in sq. ft.)	Floor Preference
Ordering and Acquisitioning	2	250	Main
Book Processing	3	350	Main
Serial Processing	4	450	Main
Gifts and Exchanges	1	100	Main
Receiving and Shipping	1	180	Main

2. *Brief Descriptions of Functions*

- 1) Ordering and acquisitioning embrace the selection, ordering, acquisitioning, checking, recording, etc. of books, periodicals, reports, microtexts, and so forth.
- 2) Book processing is the cataloging and classification of books, documents, etc.
- 3) Serial processing is the indexing and abstracting of periodicals, reports and microtexts and the compiling of bibliographies.

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- 4) Gifts and exchanges have to do with the promotion and operation of domestic and foreign exchanges of publications.
- 5) Receiving and shipping cover the receiving of books and other materials and the shipping of gift or exchange publications.

3. *Spatial Relationships*

- 1) The ordering and acquisitioning, book processing, serial processing and gift and exchange functions should be grouped:
 - a. As close as possible to the public catalog,
 - b. Near the reference, bibliography and general collection areas and the current periodical corner, and
 - c. Close to the circulation desk and the librarian's office, if possible.
- 2) The receiving and shipping room should be close to the ordering and acquisitioning area.

4. *Mechanical and Electrical Requirements*

- 1) Wiring for future electronic computer facility (consoles)
- 2) Electricity outlets in each functional area for office machines and elementary data-processing machines
- 3) Telephone outlets

5. *Remarks*

- 1) Single-face bookstacks are to be set against the wall in each functional corner.
- 2) A water-fountain is required.
- 3) The receiving and shipping area must be adjacent to a loading platform and be given acoustical treatment to prevent disturbing noise.
- 4) Space must be provided for visitors waiting to see an order librarian.

C. **User Stations**

1. *Space Requirements*

Use of Space	Volumes	Occupants	Space (in sq. ft.)	Floor Preference
Reference	2,000	20	600	Main
Bibliography	1,000	20	550	Main
Indexing & Abstracting	5,000	30	1,000	Main
Current Periodicals	2,000	30	1,000	Main
Documents & Pamphlets	5,000	10	4,000	
Patents	10,000	10	1,000	
Microtext Reading	1,000	5	150	
General Collection	100,000	50	8,700	
General Reading		240	6,000	

2. *Brief Descriptions of Functions*

- 1) The reference corner is for the answering of questions concerning books, libraries, etc. and finding facts and/or information. Dictionaries, handbooks, databooks, standards and specifications, etc. are shelved in this area.
- 2) The bibliography corner is for consultation of trade and national bibliographies by both readers and librarians.
- 3) The indexing and abstracting corner is for consultation of indexing and abstracting services such as *Chemical Abstracts*, *Mathematical Reviews* and *Science Abstracts* by readers and librarians.

- 4) The current periodicals corner is for the display of current issues of periodicals. All unbound issues, going back at least a year, will be kept here.
- 5) The document and pamphlet corner is for display of government reports, pamphlets, etc.
- 6) In the patent corner are grouped patent specifications of Japan, America, etc. Abstracts of patents such as the *Official Gazette* are also placed here.
- 7) The microtext reading corner is for the storing and providing microforms and reading machines.
- 8) In the general collection area are stored all books and bound periodicals. Bound periodicals are shelved in alphabetical order.
- 9) The general reading area is for reading by students, faculty members and all other users.

3. *Spatial Relationships*

- 1) The reference corner, bibliography corner and indexing and abstracting corner should be adjacent to each other. They should also be:
 - a. Close to the public catalog, circulation desk and technical processing area, and
 - b. Near the current periodical corner, general collection area and microtext reading corner.
- 2) The document and pamphlet corner and patent corner should be as close as possible to the microtext reading corner and technical processing area.
- 3) The current periodical corner should be near the technical processing area.
- 4) The general collection area should be easily accessible from the technical processing area.

4. *Mechanical and Electrical Requirements*

- 1) Electricity outlets will be needed for the microtext reading corner.
- 2) There must be telephone outlets for the reference corner and patent corner.
- 3) Water-fountains should be located appropriately.
- 4) Book lifts should be installed at proper places.

5. *Remarks*

- 1) At least one professional librarian will regularly be stationed in the reference corner and also in the patent corner.
- 2) The general collection area will house bound volumes of periodicals and other materials in addition to books.
- 3) Standard bracket-type shelves will be used. Aisles must be 4.2 feet wide.

D. Entrance Lobby Area

1. *Space Requirements*

Use of Space	Volumes	Occupants	Space (in sq. ft.)	Floor Preference
Circulation Corner	500	3	200	Main
Public Catalog Corner			500	Main
New Book Browsing Corner	100	3	100	Main
Photoduplication Corner		3	500	Main

2. *Brief Descriptions of Functions*

- 1) The circulation corner is for control of library materials, handling of inter-library loan requests and closed reserve books.
- 2) In the public catalog corner is stored in card form all information on the availability and bibliographic data of materials in the library.
- 3) The purpose of the new book browsing corner is to enable users to become familiar with recently acquired materials, which are displayed here before going to their permanent shelves.

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- 4) The photoduplication corner is for reproduction of materials both in the library and brought in from outside.

3. *Spatial Relationships*

- 1) The circulation corner should be near the main entrance, with close access to the public catalog, reference corner, technical processing area and photoduplication corner.
- 2) The public catalog should be placed in the entrance lobby in close proximity to the circulation desk, technical processing area, reference desk and general collection area.
- 3) The browsing corner should be near the technical processing area and the circulation desk.
- 4) The photoduplication corner should be near the current periodicals area and the circulation desk.

4. *Mechanical and Electrical Requirements*

- 1) Electricity outlets are needed in the circulation and photoduplication corners for machines.
- 2) Telephone outlets are needed in the circulation and photoduplication corners.

5. *Remarks*

- 1) The photoduplication corner should be sound-proofed.
- 2) Behind the circulation desk, space for housing reserve books should be provided.
- 3) A dark room for DPE purpose should be near the photoduplication corner.
- 4) The inter-library loan service will be handled at one corner of the circulation desk.
- 5) The circulation corner is to function as a control desk.

E. **Miscellaneous**

1. *Space Requirements*

Use of Space	Occupants	Space (in sq. ft.)	Floor Preference
Library Staff Room	15	360	
Typing Room	5	100	Not main
Toilets and Washroom	10 & 5	500	
Janitor Closets		100	

2. *Spatial Relationships*

- 1) It is desirable that the library staff room be close to the technical processing area.
- 2) The typing room should not be on the main floor.
- 3) Toilets and washrooms will have to be near the staircase, but care must be taken in placing them because of their inflexible nature.

3. *Mechanical and Electrical Requirements*

- 1) Electricity outlets are needed for the library staff and typing rooms.
- 2) Telephone outlets must be in the library staff room.
- 3) Special ventilation for the toilets and washrooms is required.
- 4) Acoustical treatment should be given to the library staff room.

4. *Remark*

- 1) The library staff room should be equipped with kitchen facilities.
- 2) There should be a janitor closet on each floor.
- 3) The typing room should be sound-proofed.

- 4) An elevator is desirable if funds are available. Otherwise, architectural consideration should be given to future installation.

F. Summary of Space Requirements

Use of Space	Volumes	Occupants	Space (in sq. ft.)	Floor Preference
Librarian's office		2	200	
General office		3	300	
Accounting office		3	150	
Conference room		10	300	
Ordering and acquisitioning		2	250	Main
Book processing		3	350	Main
Serial processing		4	450	Main
Gifts and exchanges		1	100	Main
Receiving and shipping		2	180	Main
Reference corner	2,000	20	600	Main
Bibliography corner	1,000	10	550	Main
Indexing & abstracting corner	5,000	30	1,000	Main
Current periodical corner	2,000	20	1,000	Main
General collection area	100,000	50	8,700	
Document & pamphlet corner	5,000	10	1,000	
Patent corner	10,000	10	1,000	
Microtext reading corner	1,000	5	180	
General reading area		240	6,000	
Circulation corner	500	3	200	Main
Public catalog corner			500	Main
New book browsing corner	100	3	100	Main
Photoduplication corner		3	500	Main
Library staff room		15	360	
Typing room		5	100	Not main
Toilets & washrooms (M & W)		10 & 5	500	
Janitor closets (one per floor)			100	
Total	126,600	472	24,670 (net square feet)	

G. Special Equipment and Needs

1. Circulation desk
It should be designed specifically for the handling and treatment of circulation work, inter-library loan requests and reserve books.
2. Special shelving arrangements are needed for the indexing and abstracting collections and for bibliographies.
3. Allowance should be made for future expansion and/or installation of elevator facilities.

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