UNIT 4   PHYSICAL PLANNING OF LIBRARY

Structure

4.0   OBJECTIVES

After studying this Unit, you should be able to

- explain the need for planning a library building/ set up;
- elaborate the factors to be considered in preplanning;
- preparation of a library programme or proposal;
- estimate, allocate and manage space in a library;
- know the need for providing for comfortable lighting and helpful sign boards required for a library;
- enumerate the furniture and equipment which are necessary for the efficient running of a library; and
- describe some of the standards and specifications necessary for physical planning of a library.

4.1   INTRODUCTION

As mentioned earlier (in Unit 1), this unit deals with managing materials; particularly physical materials like furniture, equipment, building and other physical environment of a library. This unit is titled physical planning rather than planning physical environment and material only to emphasise the predominant nature of planning function in this aspect. The second major managerial function, namely, organising has already been discussed elaborately in Unit 2. Staffing and Directing functions will be presented in Block 4. Controlling function is discussed both in Unit 3 of this block and Block 5.

A Library is as good as it is displayed and exposed to users. It should not be conceived as a hidden treasure or a passive collection of reading material. The physical facilities and environment consisting of location, building, layout, furniture, equipment, etc., significantly contribute in enhancing the quality of services. Physical environment not only plays an important role in marketing the services of libraries, but also affects users behaviorally as well as psychologically.

A library is a place-where interaction between the reader, the book and the librarian takes place, resulting in growth of knowledge. The reader seeks knowledge, books contain knowledge and the librarian brings the two together in the conducive environment of a library. To carry out this activity most efficiently and in a congenial atmosphere, the library must be planned well-the building must be so located that it is easily approachable by the clientele, it is so designed that it is inviting and attractive books (in its widest meaning) are so arranged that one can easily locate them, furniture is comfortable to use, and the lighting easy on the eyes. This needs careful planning. Then approach is more akin to the designing and planning of a modern departmental store where the items are selected on the judicious anticipation of customer's needs. They are so arranged that a customer can easily locate what he needs and also finds items he had not thought of earlier but considers useful; the set up is bright and airy, and the transaction is concluded without any hassle.

In this Unit we will discus about all the factors that have to be considered while planning a good library building, the items of furniture necessary and their characteristics, the space requirement for various activities that are carried out within the confines of a library, and the equipment and gadgets that help in carrying out these activities quickly and efficiently. You will also be acquainted with the norm and standards that have evolved over the years, which serve as guidelines for planning and designing the contemplated library activities.

4.2 LIBRARY BUILDING

Libraries come in various types and sizes to fulfill certain specific needs of the community it is established to serve. Thus we can have a single room village panchayat or school library to gigantic edifices spread over acres of national library. It may serve a lay clientele who have barely mastered the rudiments of the three R's or highly sophisticated, erudite cream of the society. It may handle a couple of reluctant readers a day or may have to cope with a huge rush of knowledge seekers as in a public or university library. The range is enormous, demands are endless and variety limitless. Needless to say, planning for providing services to this diverse clientele has to be different, to suit the needs of a particular group of clientele. It is not possible to frame rigid guidelines which will be equally applicable under all conditions. What we shall try here is to elaborate some guiding principles which should be kept in mind while planning a new library set-up.

4.2.1 Preliminary Considerations (Preplanning Activities)

The task of creating physical facilities and environment involves broadly pre-planning activities followed by preparation of a programme, allocation and utilization of space, selection of equipment, furnishing and moving into facility. The pre-planning activities include gathering information (including internal information) through visiting other libraries, discussing with colleagues and experts, attending seminars, exhibitions, conferences and reading literature. One should not be surprised or scared at issues cropping up. Rather one should try to discuss with colleagues and experts. The proposal should incorporate general features like objectives, type, status and location of the library, nature of users and use of library, and composition of planning team, resources required, the implementation schedule, etc.

Physical facilities and environment can be looked from three important view points, namely, marketing of services, quality of services and customer (user) studies. Before attempting to create physical environment and facilities in libraries to gear up the quality services it is necessary to identify and understand the nature and characteristics of services. Characteristics of service organizations like intangibility (impulpability), non-inventoriability (perishability), variability and insepariability of production and consumption of services call for an extended marketing mix with emphasis on physical evidence, people (service personnel), process, PR and social marketing. The role of 'Place' and 'Physical evidence' in the new strategy for marketing of services is to be emphasized while creating physical facilities and environment. Physical environment is packaging for services and hence it need to be improved for the following reasons and ways:

i)   customer judges the service quality through the process of deduction

ii)   Creation of service environment (i.e., context) should not be left to chance

    iii)   Both dominant and peripheral physical evidences should be coordinated to achieve uniformity in projected service image

    iv)   Peripheral evidences are small to trival but have impact on customers

    v)   Perception about services are sources of competitive differentiation

    vi)   When it comes to perception "feelings are facts"

    vii)   Help to reinforce the proposed position and image of the organisation, i.e., tangibilise the intangible service through physical environment

Clientele

Any effort to create physical facilities and environment should take into account the unique needy and ways of seeking, gathering, using and communicating information by the target users. In other words, understanding the users in terms of their characteristics, styles, idiosyncrasies, needs, opinions, priorities, preferences, evaluations, attitudes and behaviour is essential. A number 'of findings in the areas of user research provide clear and direct input for creating appropriate physical facilities and environment. The type of library, nature of users, pattern of. usage, age and status differences, psychological and behavioural patterns of clientele are to-be given due consideration in planning a library building.

Based on the nature of clientele, three broad groups of libraries are recognised-academic library (a school, college or university library), where the users are the students, teachers, or research scholars; public library (established by a local authority or a philanthropic body) or a private or subscription library where the clientele are a cross section of the community-both literate and semiliterate; and special library(established by industrial concerns, commercial organisations, business enterprises, Government or `Quasi-Government bodies or learned societies) where the clientele constitute industrialists, entrepreneurs, businessman, officials, scientists, technocrats, professionals, politicians, literate and others.

Location/ Site

Location is important for homogeneous services, site selection and choice of community, region, etc., depend on the factors like convenience, operating cost, proximity to competitor, availability of support system, geographical or environmental factors like noise, traffic, communication networks, transport facilities, channels/distribution/service centers, etc.

Ideally, a library should be centrally located so that it, is easily accessible to its clientele. It should be setup in serene surroundings, insulated from din and dust. However, in practice, this ideal condition seldom prevails and there will be competitors within the organisation for better location. Quite often one room in a building is designated as a library. Sometimes aisle vacated by another department is handed over to the library and at times building donated by a philanthropic person or a body serves as a library. If one is fortunate to have the opportunity to plan a library building right from the beginning, one should select a location which is most convenient for the clientele it is going to serve. It should be large enough to have provision for future expansion-both horizontal and vertical, and it should form an integral part of the overall campus plan and should not appear to be an appendage or an after thought. Finally, it should be in accordance with various governmental codes.

Various factors determine the site that is ultimately selected for a library building. While a central location is of paramount consideration in an academic campus (university or a centre for advanced studies), the same consideration may not be applicable in the case of a special library. Sometimes safety and other considerations (hazardous chemical factory, noisy establishment) may dictate the positioning. of the library in a remote corner. In addition to safety, aesthetic and cost factors may also be considered. In the process of selection of location and site, not only the adequacy of the size be ensured but population distribution, relation to neighbouring buildings, traffic flow, orientation, elevation, scope for future expansion, shape of the land and nature of the soil, and ground are to be taken into consideration.

Resources

It is obvious that the size and architecture of a library, will be determined by the volume of its activity-the number of clientele it is going to serve, 'variety of services it will offer, and

above all the prestige of its patrons. The issue is finally decided by the amount that is available to translate the dream into reality. The librarian should have clear idea about the capital budget available for the library building. In other words, money, land expertise of librarian, consultant, architect, engineer, contractor, interior decorates, etc are the crucial resources required.

Team Work

Planning a library building is a team work: The team consists of the library authority or the management committee, the librarian and the architect. The library authority or the management committee is responsible for the selection of a knowledgeable, qualified and experienced librarian, the appointment of a suitable building coordination committee, involvement of senior library staff members, the appointment of a qualified architect (preferably one who has planned or supervised a library construction before) with clear mandate, acquisition of a suitable site and the provision of adequate funds for the building project (after knowing the costs involved, special items, if any, affecting the cost and financial implications of the new construction).

The librarian is responsible for developing a plan for the general interior arrangements, relationship of service areas, space requirement for anticipated types and volumes of documents, reading areas, equipment requirements, special needs- both present and future and all staff and service requirements.

A very crucial role is played by the architect who is able to transform the requirement plan drawn up by the librarian into a functionally elegant interior and aesthetically pleasing exterior of a library building within the limitations of resources provided. This is possible if there is a good rapport between the librarian and the architect, each understanding the other's strong points and limitations. The librarian and the architect may also need to consult other specialists interior decorators, equipment and furniture manufacturers, illumination and air-conditioning consultants before drawing up a final plan.

In addition, the team of planning committee may have consultants, field representatives, users, library staff, other staff in the organisation, construction coordinator, telecommunication staff, engineering staff, interior decorator, facilities planners, etc.

A good library building is the outcome of a close relationship between the librarian and the architect. An ideal library is a happy combination of both function and design. The librarian not only draws up the preliminary plan based on the considerations explained earlier, but he is also in touch with the architect at every stage of the plan. It may be pointed out here that for some big libraries, the practice is to invite competitive designs for the library building.

Self Check Exercise

1) Broadly categorise the different types of libraries.

   Give examples.

Note: i) Write your answer in the space given below.

   ii) Check your answer with the answers given at the end of this Unit.

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4.2.2   Preperation of a Library Programme/ Proposal

A written building programme (or proposal) is must for any library. It is a basic statement about the need of the community and can be used as a legal document of requirements to the architect. Further, building programme forces the library to make basic decisions and go through a process of soul-searching. It helps to establish the criteria for a site and aids site selection. It also helps to estimate the potential cost requirements. It enables architect to know the requirements in specific terms of space, function, relationship of areas and minimise friction between librarian and the architect. A written building programme is useful to governing bodies, citizen's groups, the library staff and the architect. It needs to be prepared by librarian and senior library staff in consultation with experts, consultants, users, authority and architect. Steps involved in preparation of a library building programme/proposal are:

a)   The contents

The contents of a library programme for building should reflect the following:

i)   General features

- Objectives of the library
- Type of the library
- Status of the library
- Location of the library
  & competitors within the organisation

ii)   Nature of library users

- Number, types and composition of users
- User activities
- Use of library and user-interactions
  with the library i.e. pattern of
  usage, movement and interaction

iii)   Construction features

- Useful life of the facility
- Unusual construction features
- Environmental controls
- Space for special users (e.g., handicapped)
- Space requirements
- Services offered
- Future expansion

b)   Gathering statistics

c)   The planning team

- library planners
- consultants, architects, field representatives
- users
- library staff and other staff in the organisation
- construction coordinator, telecom staff, engineering staff, facilities planning, interior designers, etc.

d)   Resources required

e)   Implementation schedule

Some tips for preparation and execution of a library building programme are:

- Know existing constraints
- Compromises are inevitable
- Have a (base) year of reference
- Estimate annual growth rate

- Trade off of aesthetic, functional, safety & cost factors is inevitable

- Forsee the impact of emerging technologies and anticipate impact of new technologies on building, layout and space

- Have a floor plan with 3-dimensional model racks & furniture

- Plan use of appropriate sign boards.

Some illustrations of input from user studies for the programme are:

- inverse square law of use of library (use of a library is inversely proportional to the distance of library to user)

- psychological distance between user and library

- almost one-third of users >visit libraries for work space and one-eigth exclusively for work space

- inhouse use, seat occupancy, length of stay, user movement/ traffic flow pattern

- distance zone (privacy) studies

- browsing and current awareness needs, etc.

Size

The size of the library building is determined by the number of clientele it is going to cater to (many subscription and public libraries, which may have a large membership, do not provide correspondingly large reading areas as in the case of academic libraries), variety and range of services provided, document type (obviously the space requirement of a text book library will differ from a maps and drawings library, for the same number of documents), total present collection and the rate of growth, staff strength, extension and other activities. While the Fifth law of Library Science states that `Library is a growing organism', there is a limit to growth as far as building space is concerned. Normally a library building is planned with a 15-20 years growth in view. But since the library activity cannot come to a standstill at the end of 20 years, just because funds are not available for a new building, every library should have an active `de-acquisition' policy along with a healthy acquision policy. There are a lot of ephemeral materials accumulated in the library over the years-old catalogues and brochures, news bulletins, old text books, outdated reference books, torn fiction books, and many other materials which occupy valuable space in the library. These should be periodically weeded out to make space for the new. In essence, one should ensure that the size of the building is adequate from all perspectives.

Architecture

Library activity is a specialised activity and it should be designed so as to carry out this activity efficiently in a congenial environment. The library design should be based upon and correlated with the functions and services of the library. Just as a temple, a church, or a hospital has a distinctive architecture-both internal and external- the library is also a specialised institution, and its individuality should be reflected in its architecture. But above all its design should aim at bringing about economy in administration and optimise its operation. For the sake of economy the stack areas may have low ceilings (2.5 m), compared to the other areas (3.75 in). For effect, the lobby may have higher ceiling. Above all, library requires floor stronger than other office buildings to withstand load of stocks. While planning and execution of plan for a library building, it should be ensured that load bearing capacity of floor (1500 kg/sq m), floor height (not less than 8 ft), avoiding interior load bearing walls; quiet comfortable and attracting reading rooms, simplicity, efficiency, economy, comfort, flexibility and functional usefulness of the building are as per standards. The preliminary considerations should lead to a proper written proposal/programme and that in term should 'get translated into working drawings and specifications for the requisite building.

4.2.3 Space Allocation, Utilisation and Management

Library planning constitutes correct estimation of space required for various activities, logical juxtaposition of space earmarked for various activities and optimal use of the space available. Since it is within the confines of a library building that most library activities take place (some of the activities may be profitably carried out outside the confines of the library e.g,

binding in many libraries is done by outside professional binders; computer operation may be carried out in the central computer facility of the institution or subcontracted to some outside agencies), rational estimation of space requirement and optimal utilisation of space is `sine qua non' of successful library management. For operation, the library needs space for books (all types of documents), users and staff. Books are to be stored and, displayed in specific areas and in special furniture, equipment has to be housed in special rooms, readers are to be provided with tables and chairs located in congenial reading rooms or study carrels. The staff needs space to work undisturbed (and without disturbing others-the effect of a typist sitting in a reading room is easily imaginable!). Provision of these space requirements is vital in the planning of a library building.

Mainly the following four broad areas along with their allied and sub-areas are identified as common service areas in a library:

a) Circulation area, which includes:
    i)   Stack rooms or halls
    ii) Charging Desk
    iii) Public Catalogue/s

b) Reader Activity Area, which includes:
    i)   Reading room/s
    ii) Microform reading room
    iii) Study carrels

c) Staff Activity Area, which includes:
    i)   Acquisition section
    ii) Technical section
    iii) Reference section

d) Other Areas, which include:
    i)   Senior professionals rooms
    ii) Space for library staff
    iii) Seminar room
    iv) Binding section
    v)   Reprography section

(see Appendex 2 for a case study of estimation of space requirement for a-special library.)

Some important tips for space management 'in library building are given below.

- Flexibility is the catchword
- Function is more important than beauty
- Evolutionary steps in orientation & shape of building are I, T, L, U & O
- Shape: a 3:2 rectangle with door half way along long wall of not more than 100 ft. long and not more than 4 floors is ideal for best ratio of assignable to gross area, most direct traffic and transportation and ease in organising, integrity and adding or enlarging.
- Primary floor and entrance should be *on* grade
- Primary floor should be larger than other floors
- Building parameter should be as straight and uncluttered as possible
- Security and fire safety should be incorporated on priority
- Minimise RCC
- Avoid space stealors like` balconies, air wells, light wells, etc
- Minimise interior walls
- Don't overuse glass
- All assignable space should take a floor load of 150 lb/sq.ft (250-300 lb/sq.ft. for compact storage)
- Simple open forms should be prefered
- Informal comfortable atmosphere need to be created
- Accessibility and convenience are very important

- Noise control should be looked into
- Space allocation is an important activity which need to be done logically and scientifically. It is better to consider floor as a series of concentric circles with the centre being the place where elevator, main stair case and entrance are located. Even considering space three-dimensionally, the same principle holds. Then proceed with radial assignment of space to various activities.
- The relationship between units has to be decided in a heuristic method by drawing charts with different intensity of relationships between units like essesntial, important, desirable, not important and undesirable.
- Seating economies like size of tables, and stealing space from aisles to be given due consideration.

It is here that the finding of the past studies both in librarianship as well as other areas like behavioural science and psychology have to be - noted. For example, it has always been reported that users prefer to occupy empty tables even if it is little away in the reading hall. The next preferred seat in a four seater table is diagonal position and the last chance is sitting by the side of another user. Similarly the distance zones of privacy reported by psychologists given below should help us to determine the seating arrangements in different areas.

distance zones (privacy)	
intimate	<1 1/2 ft
personal	1 1/2 ft - 4 ft
social	4 ft - 12 ft
public	12 ft - 25 ft
public domain	>25 ft

Circulation Area

The stack rooms, issue and return counter and public catalogue constitute the circulation area. Along with the reading room, the circulation area is considered the most important part of the library, since it is in these places that the readers come in direct contact with the library personnel and facilities. Hence great deal of thought and attention should be given to their planning.

i) Stacks

Stacks are the storage spaces for the various types of documents kept in a library. The types of documents generally found in library are: books and monographs; pamphlets and brochures; and periodicals and newspapers. Besides these, specialised libraries may have sizable collection of patents and standards; maps and drawings; records and cassettes; microfilms and microfiche, and various other types of non-book materials. Obviously storage and display devices for these diverse materials of various size, shape, format, and characteristics cannot be the same. Depending on the present and anticipated mix of the document collection, the number of storage units required for each type of documents has to be estimated. Normally a book shelf of standard 85 cm run, can hold 25 books, or 15 bound volumes of periodicals. A standard library rack of 145 cm height, has six shelves for books or five shelves for bound volumes of periodicals. Recommended shelf depth is 25 cm. It should be kept in mind that the stack area, specially the books and periodicals stack area, has the fastest growth rate in a library and a miscalculation at the planning stage can lead to serious bottleneck at a future date. While calculating the space requirement, not only the dimension of the furniture, but the gangway space has to be considered. - Gangway space may be calculated on the basis of minimum 1.30 meter distance between the center of two rows of double sided racks. This will leave a free passage way of 80 cm between two rows, which is just adequate. However, in bigger libraries, for less used materials, compact shelving is recommended to save space. The racks for compact storage move on rails, and no space is left between the rows. But compact shelving is costly and affordable by really big libraries.

Each library must workout its own formula for housing the collection. Some ways of doing include 6 volumes per linear foot or 10-15 volumes per sq.ft. (includes 25% free space). Further 5% growth rate per year, 6% configuration loss and 25%. nonassibnable space may have to be added. It is important to check the norm and standard by oneself A case study of estimating space requirements of a special library presented in Appendex 2 has used the following formulae:

Books & reports	500 per 3.75 sqm
Bound journals	300 per 3.75 sqm
Current journals	25 per 4.00 sqm
Standards, reprints, etc.	1000 per 3.75 sqm
Microforms	10000 per 3.00 sqm

ii) Charging Desk

This is the key functional area of the library and a great deal of thought should be given to its location, size and shape. The counter is so placed that the persons manning the counter can keep watch on the readers and check unauthorised material getting in or out. Normally the counter is placed at the main entrance, and adequate space is kept for easy entry and exit. It is so designed, that the most important activities like issue and return of books are conducted smoothly and unhindered. The size of the counter will depend on the number of readers to be served at one time. Adequate space should be provided in the counter to shelve books returned as well as and to store all essential records, including the charging trays. A property counter or a pigeon hole rack is generally placed near the issue counter, where the visitors or readers can leave their personal belongings before going inside the library. Provision is made near the counter for notice boards, display of latest book jackets, or other exhibits.

iii) Public Catalogue

Public catalogue is the key to the document collection in a library and frequently used by the readers as well as the library staff. This should also be placed near the entrance and not far from the counter. Sufficient space should be left near the catalogue cabinets to make consultation easier. A few high stools may be placed near the catalogue cabinet, to make lengthy consultation comfortable. Provision is usually made in the cabinet for small draw out writing board where the readers can note down the contents of the catalogue cards. Catalogues grow with the book stock, hence sufficient space should be provided for future expansion. An economy catalogue cabinet require about 1.75 sq. mtr. (20 sq. ft.) area. In recent years many libraries have automated their services and functions and hence they have been able to provide Online Public Access Catalogue (OPAL) to their customers both within the library as well as on campus through Local Area Network (LAN).

In addition to above, this area has to accommodatge new arrivals display, stacking of reserved books, circulation staff, personal property counter, computer werkstation, etc.

Reader Activity Area

Depending on the size and nature of the library, there may be one or more reading rooms. A reading room for books and another for magazines and newspapers is fairly common. In many academic institutions and some public libraries a separate text book room is also provided. In libraries having a sizeable collection of maps and drawings, a room with special devices to study them properly, is set apart.'

i) Reading room

The reading room should be located nearest ° to the document collection concerned. The minimum reading space required upon the maximum number of people who may be using the reading room at a time. A thumb rule is to make provision for about 10% of the members or potential user community. Based on that, provision has to be made for suitable type and number of tables (much more space is needed for a newspaper reader as compared to a book reader)- and chairs have to be provided. There should be adequate space left for moving around without disturbing other readers. For books and periodicals reading rooms, roughly 1 sq. meter area is to be provided for each reader space in a public or academic library and the same may go upto 2.75 sq. meter in a special library, In other words, space per reader

varies depending on type of library and type of user. One estimate for academic and special libraries is given below:

Undergraduate	30 sft.
Graduate	40 sft.
Faculty	50 sft.
Special library	75 sft.

ii)   Microform reading room, collection and production Units

These days, more and more use being made of microforms-microfilm, microfiche, micro opaque cards, slides, video cassettes, etc., for recording and storage of information. While storage of these materials need special care, viewing of these materials need special equipment and a different environment (usually subdued light, controlled temperature, humidity, etc.) than obtaining in normal reading rooms. Special reading rooms are set apart for such type of materials. Since each reader has to be provided with individual reading area, more space per reader has to be provided than in a general reading room. About 150 sq ft area is required for one unit of microform reader. A library may also have a microform production equipment either in the same section or a seperate section.

iii)   Study carrel

Study carrels are exclusive areas, located in quieter and undisturbed part of the library, which are set apart for prolonged use of a research or academic staff. Very often they are located near the reference collection or the bound volumes collection, which are extensively used by the researchers. More generous space allocation has to be made for these study carrels, and preferably they should be insulated against intrusion by others. Most university libraries and some big public libraries provide this facility. Ordinary table size modular study carrels can also be designed and kept along windows in reading room or stacks to provide a sort of semi privacy.

Staff Activity Area

Main activities carried out by the professional staff of the library are: Acquisition, Technical Processing (cataloguing and classification) and Reference service. Besides, a lot of routine activities like typing, labelling, stamping, duplicating are carried out in areas screened off from public view. The space allocation for professionals and other staff should take into consideration the fact that besides tables and chairs, they would require space for book racks, trolleys, card trays etc. General norm is to provide about 250 sq.ft. areas for librarian, 125-150 sq.ft. for deputy librarian and 50 sq.ft. for clerical staff. The number of staff obviously depends on the size of the library and the range of services provided. The staff areas are organised around discrete work units, and their layout should be such that work flows smoothly from one work unit to the other.

i)   Acquisition Section

The acquisition work consists of selection, approval (by competent authority, Library committee, Department heads, or in some cases the librarian himself), ordering, receipt of books and their transfer to the technical section after accessioning. Adequate space should be provided for all these activities which will include space for a number of shelves for keeping books and various tools required for acquisition work. It should be located near the catalogue and not far away from the main entrance. Sometimes the inter-library loan activity is the responsibility of this section, since inter-library loan can be considered as a temporary acquisition activity. It is a very responsible task and special care has to be taken about safe custody so that the document acquired or obtained on loan or on approval are not lost.

ii)   Technical Section

As mentioned earlier, cataloguing, and classification are the principal technical activities after the acquisition process. Besides the technical staff who catalogue, classify and file the cards in the public catalogue, typists or data entry operators, and other supportive administrative

staff constitute the members of this team. However, they may Le seated separately. In smaller libraries, Technical section and Acquisition section are merged into one unit.

iii) Reference Section

Reference activity is one of the most important activities of a library and very often it is the precursor of documentation and information activity. A Reference librarian not only needs to consult the reference collection of the library, but he has also to consult the public catalogue to answer the readers queries. Reference librarian is located in close proximity of the reference collection. For a more active reference service, the reference librarian should regularly scan contents of current periodicals and maintain a file of pertinent information gathered. He needs suitable equipment to file these records. Small card cabinet or Rollodex may be kept handy by the reference librarian.

Other Areas

This will include the librarian's room, senior professionals room (in bigger libraries), space for supporting administrative staff, seminar room, reprographic unit and bindery.. Besides, there are service areas like stairs, corridors, cloak rooms, entrance hall, janitors room, etc. which forms part of non assignable area of the building.

i) Librarian`s room

The librarian normally has a separate room of his own, adjacent to the work room and opposite to the main counter area. This room should be centrally located, preferably of wood and glass construction, so that he can keep a watch on the activities of various sections. A few cupboards for important reference tools and locked almirahs for important documents are kept in the librarian's room. Usually generous space is provided in the librarian's room so that readers, vendors; **and** library staff can come and sit for discussion or any help. Some senior professional staff (e.g. Deputy librarian, Systems analyst) are provided with separate rooms of smaller dimensions.

ii) Space for library staff

Somewhat interior space is provided for the supportive administrative staff like typists, library assistants, etc. They provide support service for all the technical activities.

iii) Seminar room or conference/meeting/Exhibition hall

A small hall or a big room may be set apart for seminars, meetings, discussions, etc. These activities may be organised by the library staff or at the initiative of other faculty members or research departments. This room can also be used as a projection room for slides, videos and films. Size of the room will depend on the expected number of clientele. A 45 m (6m x 7.5m) or 500 sq.ft. room will accommodate 40-50 persons.

iv) Binding section

This section is generally located in the basement or some other obscure area. Machinery, material and equipment for mending, repairing and binding of books are provided here. Though having a seperate binderly within the premises of the library, has certain advantages, now-a-days in most libraries major binding work is contracted to outside professional binders. Only minor pasting and restoration jobs are carried out in the library by the junior administrative staff.

v) Reprography unit

With the advent of cheap and efficient photocopying machines, provision of photocopy service has become a must in most libraries. In the west, coin operated photocopying machines are placed near strategic collection of materials, to be used by the readers themselves. In our country, this practice is not in vogue. Supervised operation and close check are maintained to by most libraries. With the rising cost of technical and scientific periodical publications, most libraries within a city or within a region, resort to cooperative acquisition, and supplement their collection by obtaining photocopies of articles needed by their clientele from other

libraries. Depending on the volume of work, one or more light or heavy duty copying machines are provided. Besides photocopying machines, desktop offset machines, microform machines are standard equipment in some bigger libraries. A room with subdues light is preferable for this operation. Size of the room will depend on the number of machines and operators. Binding, reprographic, micrographic and other equipment are discussed under library equipment in the later part of this Unit.

As mentioned earlier, there are many other areas like new arrivals display, special materials, audio-visuals, computer and, CD-ROM workstations, place for carrying out repair and maintenance of furniture and equipment, etc., need to be given due consideration.

Self Check Exercises

2) Enumerate the various types of reading rooms provided in a big library.

3) List the activities carried out in Technical section of a library. What are the main tools kept handy for this operation?

Note: i) Write your answer in the space given below.

ii) Check your answer with the answers given at the end of this Unit.

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4.3 LIBRARY FURNITURE

Just as a library building is a specialised structure with specific functions, the furniture for a library has to be custom designed for each function. The needs of furniture and equipment of individual departments and sections should be given careful consideration so that the users and the staff experience ease, comfort, convenience and efficiency in their work. Generally library furniture is of two types-wooden and metal. Now-a-days plastic furniture is also increasingly in evidence. Then again furniture could either be (a) stock-standard (steel) furniture and equipment made by several manufacturers (see list below); or (b) custom-built or made to order in accordance with the specifications provided by the library. It is advisable to visit some libraries equipped with standard and elegant furniture and fittings before taking a decision.

List of suppliers of stock-standard library furniture:

M/s Curzon &. Co.	M/s Methodex Ltd.
M/s Godrej & Co.	M/s Remington Rand Co.
M/s Mehra & Co.	M/s Vinar Systems.

Some important steps in furnishing library are:

1) Determine what the furnishing should accomplish for the particular library involved

2) Consider what is available in the market or what can be obtained to fulfill the requirements determined

3) Make the selections and purchases based on

- Requirements

    the primary building use

    the age of the users

    the amount of use expected

    the kinds of material to be stored, organised and displayed

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the number of staff members

future changes anticipated, etc.

- Function considerations like

    what use will be made of the item

    who want to use it

    how it will be used i.e.,

    how long the item will be used at any one time

    - how often it will be `used

    - whether user may change in the future

    - Maintenance required

    - Appearance, etc.

4)   Seek input from staff

5)   Visit recently constructed facilities

6)   Conveying the requirement

7)   Vendor evaluation, price comparison & visit to factory

8)   Providing specifications and drawings

9)   Comparison of offers

10)   Checking of sample

As mentioned above, three important selection criteria for funrishing and selection of equipment are function, maintenance and appearance. Another important decision in furnishing is choosing a standard item in the market versus designing a custom made item.

Some specifications for furniture items like table, chair and rack are given below:

Table: Seating economy v/s privacy

     Size,   2" X 3" v/s 4" X 6"

     Height: 29"

     Bullnose edge or wood/ vinyl round edge

Chair: Overall height: 26"

     Knee height: 17"

     Purpose:

- reading hall

- lounge

- meeting hall

- office (staff)

4.3.1   Library Stack

Library stacks are the most ubiquitous piece of furniture found in a library. It is used to store books, bound volumes of periodicals, and sometimes pamphlet boxes. Each unit stack, made usually of steel (wooden ones are also available, but are costly and the shelves buckle if not made of seasoned good quality wood), are 180 'cm wide, 195 cm in height (225 cm height is also available) and 25 or 50 cm in depth depending on whether it is single sided or double sided (i.e. 71/2" X 22" X 3"). A number of unit racks can be joined together to make a long row. Each shelf or panel has two brackets on right and left side, inserted strongly to the shelf ends. The sliding book stopper and back rest fitted to the grooves of the individual shelf ensure upright positioning of books. Normally shelves are not packed more than 75% of the capacity. Stack can be fixed or movable, wooden or metal, modular or space determined, agle or skeleton.

A cheaper version of the book stack is the skeleton book rack, usually made of steel. The basic structure is four slotted angle iron stands assembled with a shelf at the top and one at the bottom. There can be any number of shelves in. between depending on the height of the rack and the need. The bottom shelf is usually placed at a height at 15 cm, Width of the shelf is generally 90 cm and the depth can vary from 15 cm to 45 6m. Racks can be of any height as needed. Besides economy, skeleton racks have the advantage of versatility. Skeleton rack

can also be used for lateral filing, the intermediate shelves being replaced by channel rails in the grooves of which folders are suspended. But skeleton racks- are both aesthetically and functionally poorer than regular steel library stacks.

4.3.2 Periodical Display Rack

Periodical display racks are mainly of three types.

i) Pigeon hole type

it has two parts, one is a cupboard in the bootom and the other pigeon holes at the to,- Overall height and width are 225 cm x 180 cm. Depth is 30 cm in the pigeon hole portion and 45 cm in the button cupboard part. Each unit will hold 36 journals in the pigeon hole part. The back issues of the same are stored in the cupboard part (i.e. 6x6). It is normally single sided one disadvantage of this type display rack is that the journals cannot be displayed prominently.

ii) Step (or Gallery) type

In this type the periodicals are displayed stepwise, each step being 5 cm deep and 15 cm high. Length of the rack is generally 90 cm. There my be 4 to 5 steps and on each step 4 to 5 journals can be displayed (depending on their size) and on a single sided rack 20-25 journals can be displayed. Double sided racks are not recommended since the unit becomes too bulky. It is better to place two single sided racks back to back if necessary. Journals are better displayed in this type, but one great disadvantage is that back issues cannot be accommodated within the unit. Normally popular magazines are displayed in this type of rack. A typical cross sectional design of a rack is given in figure 1.
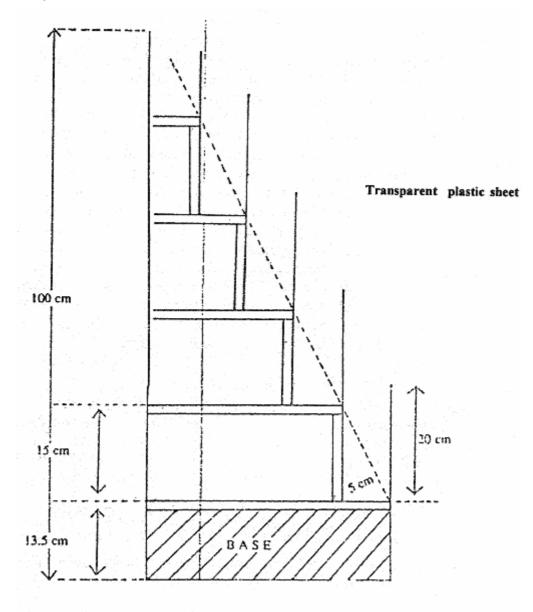

Figure 1 : Periodical Display Rack-Step Type

iii) Inclined type

This is perhaps the best type of display rack. It is a box type rack with five or six horizontal shelves, covered by hinged wooden plank with an inclination of 30 degrees to the shelf plank. Depending on the design, shelves can be partitioned into pigeon holes, each pigeon hole being provided with individual hinged wooden plank. The bottom edge of the inclined plank has a wooden head to rest the journal. The inclined plank provides a better display for the periodicals, the back issues are stored in the staff space behind the inclined plank. Since the inclined planks are hinged, they can be easily lifted providing easy access to the back issues. The overall size of a rack is 195 or 225 cm (H) x 90 or 120 cm (W) x 45 cm (D). Since the rack is fairly heavy, castor wheels are preferable for easy manoeuverability. Each rack can provide display space for 20 to 25 journals.

4.3.3   Card Catalogue Cabinet

This is perhaps the most important piece of equipment in a library used frequently by both the library staff and the library users. It is a unit of card-filing drawers designed specifically to hold library cards (7.5 x 122.5 cm) and equipped with holding rods. This cabinet (and drawers) may be of wood, steel or the newer plastic material which is finding increased acceptance. The units come in a range of sizes from four drawers upto as many as sixty. Although readymade metal cabinets, having drawers right from the floor level are available, for convenience and ease of use, the cabinets should be placed on stands (60 cm height), and the overall height of the cabinet should not be more than 1.5 m (eye level). This will accommodate six vertical rows of drawers of 12.8 (W) x 7.8 (H) x 40 (L) cm dimension. Each tray can hold about 1,000 cards of medium thickness. It is better to have modular cabinets, each having 24 or 30 drawers, than a monolithic unwieldy piece of furniture.

4.3.4   Charging peek

The charging desk or the issue counter is the main service desk and should be so designed that all functions centering in its area can be executed properly. Very seldom this central control desk is bought from ready stock. Most often it is specially designed keeping in view its special location, specific function, and the size of the library operations in view. A multiplicity of activities have to be conducted here.

The height of the counter facing the reader is lm. The width at the top is about 70 cm. Enough drawer space is provided to keep all the books and use issue counter records. The counter should also have adequate shelving space to keep the books which are returned. Normally the counter is designed for two persons to work at a time. Adequate knee space is provided at places where the library staff sit and work. Since high chairs are necessary to work at high counter, foot-rest is provided to make sitting comfortable. Alternatively, counter can be elevated with wooden or permanent platform. The length and design of the counter vary considerably to suit the specific need of the library. Some of the common designs are: rectangular, L-shaped, U-shaped, etc. Whatever design is selected for flexibility, it is better to have small units of 90 cm length each, which can be bolted together or just placed side by side to give the illusion of one piece. The counter is invariably made of wood, and usually have hard wearing top made of decolam or similar material.

4.3.5   Special Furniture Items

Besides the above mentioned library furniture, a few other items worth considering are:

a)   Book trolley, which is essentially a small book rack mounted on wheels, It is very useful for moving books from one area of the library to the other.

b)   Stand (also called dictionary stand) for an outsized and bulky reference books with space below for few other reference books.

c)   Display rack for newly acquired books, that can be placed in a prominent position.

d)   Exhibit cases for display of wide range of items.

e)   Atlas stand and Newspaper stand with sloping tap.

As mentioned earlier, there is no one method of furnishing all libraries. Many of these items need to be uniquely designed for each library. The possibility of built in display stands, atlas stands, etc. should also be explored depending on the nature of the building.

Self Check Exercises

4)   Describe briefly three types of periodicals display rack.

5)   Calculate how much shelving space (stack length) will be required to store 2,000 books and 500 bound volumes of periodicals. Give the dimension of the stacks you will use.

Note: i)   Write your answers in the space given below.

ii)   Check your answers with the answers given at the end of this Unit.

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4.4   LIBRARY EQUIPMENT

Most of the equipment used in the library is standard office equipment, sometimes adapted library use. A case in point is the catalogue card duplicator which is nothing but an ordinary stencil duplicator, miniaturised for card duplication. Typewriter, (manual or electronic) is an ubiquitous piece of equipment in libraries is gradually getting replaced by various types of equipment that are generally found in a library can be categorized as:

i)   Filing equipment

ii)   Record-keeping equipment

iii)   Microform reading equipment

iv)   Copying equipment

v)   Non-conventional indexing and filing equipment

vi)   Miscellaneous supplies and equipment.

4.4.1 Filing Equipment

Provision for filing has to be made for many kind of materials, from architectural and technical f very large size to microform copies of various formats. In between there are correspondence, newspaper clippings, patents and standards, and many more of e and material. Numerous types of systems and equipment have been designed to storage and convenient retrieval.

The basic card catalogue for filing library card has been described in a previous section. But any other kinds of cards for which special provision has to be made. Small rotary files with cards or microfiche (5 cm x 7.5 cm), that snap in place easily are useful to indicate special reference materials or important addresses. Roll-dex is one such equipment which is commonly seen in banks in India. For large number of cards, motorised units such as Kardveyer (sold by Remington Rand in India) is more suitable.

For filing correspondence and other material in loose sheet format vertical filing cabinets with pull out drawers, or lateral filing systems that open from .he sine are suitable.

For storing pamphlets and catalogues, pamphlet boxes of various kinds are available. They are of different sizes and designs-some, are open at the top and front; others have only one side open; some have a slanted opening; some are more rigid than others. They may be made of cardboard, wood, metal or plastic.

Microforms are of various types and sizes-16 mm, 35 mm, 70 mm microfilm, microfiche and micro opaque cards. They should be stored in an environment which is not too humid and there is no extreme range of temperatures (air conditioning is not essential, but preferable). Short strips of microfilms may be put in pockets and filed in drawers. Longer ones are wound in spools, packed in individual cartons with paper identification and filed in drawers. Slides or transparencies require special filing cases. For small collection portable slide boxes are useful.

Microfiche should always be kept in protective covers or envelopes. Top edges of microfiche should be visible for easy filing and identification. Microfiche should be filed in steel cabinets.

Large steel cabinets with shallow drawers are available for architectural or technical drawings. Sometimes these are rolled and kept in cylindrical containers.

4.4.2 Record-keeping Equipment

Record-keeping equipment in the library is mainly used for keeping records of periodicals-current issues as they are received, and the back files of bound or otherwise preserved volumes. The choice of equipment depends on the number of titles to be accommodated and the type and range of users. These days, for larger collections, computerised systems are installed for handling the complete record. The most popular manual system is based on a unit card, one for each title and complete record is noted on them. The cards are filed in special transparent holders so that the cards overlap, leaving only the titles visible. Complete records of each title is available from the card-full title, publishers name and supppliers address, space for noting records of issues, note of complete holdings, and location of the holdings. It is desirable to have here subscription records-when ordered, when paid for, and when renewals are due. Equipment used for this purpose include kardex, linedex and loose leaf binders. Kardex (supplied by Remington Rand Co. in India) is used in periodicals control system. Since cards are housed in protective pockets with transparent plastic tips, they remain clean, flat and do not get "dog-eared". Linedex is a metal cylindrical structure (30 cm height) revolving on ball bearing, and having a knob at the top and a number of metal panels these panels where perforated strips of paper bearing the title of the journal subscribed by the library with their location are displayed. A simple loose leaf binder which look like bank ledgers can also be used in place of Kardex.

4.4.3 Microform Reading Equipment

Some aspects of microform reading room and storing equipment are already discussed above. You are going to learn more about micrographics (including production equipment) and reprographics in other courses. What is mentioned here is the need for acquiring user aid equipment for micrographics.

It is important to develop micrographics as a system and decide on the formats, types, reduction ratios, sources of procurement, organisation, maintenance, quality control and inspection. Apart from reader, reader-printer or projector, quality control as well as cleaning and maintenance equipment are also required. For more details including generation of specialisation, evaluation and selection, you may consult references cited.

As mentioned earlier, micro forms, usually found in a special library are slides, microfilms, microfiche, microcards and aperture cards. To read their contents special devices are necessary-microform reader, reader-printer and projector. Now-a-days many satisfactory microform reading machines are available in the market, and new improved ones are being developed steadily. While some of the simpler, ones admit only one type of form-either microfilm or

microfiche-most of the machines these days can handle more than one format with only a change of the adapter. There are some which have the facility to make copy of a particular page, by mere press of a button. Catalogues and guides are available which give information about new micro-reproduction equipment being developed and marketed.

4.4.4 Copying Equipment

Multiple copies of documents, for various purposes, are often needed in a library. Hence it is necessary to provide some kind of equipment for making copies of materials-both typed and printed, in quantities from a few to a couple of hundred. For example, catalogue cards and index file cards, forms such as routing slips and personal notification slips, library bulletin, and various other services require adequate number of copies. A major copying activity is the supply of copies of articles to the readers on request.

4.4.5 Non-Conventional Indexing and Filing Equipment

Use of mechanical devices for sorting information recorded on special kinds of cards like edge notched cards, optical coincidence cards and aperture cards has become obsolete with increased use of new computers. The coded cards can be sorted manually or mechanically. Manual systems employ specially designed cards, and some use very simple manupulative devices such as needles. There is a system based on optical coincidence in which the holes are punched in the body of the card, and not on the edges. Some non-conventional systems like Rapid Selector (or Filmorex) and apertue cards combine the filing and indexing operations usually utilising film copies of documents.

4.4.6 Miscellaneous Supplies and Equipment

Besides the furniture and equipment enumerated above, a number of items useful for library operations are available. Some of the most obviously needed items are:

i)   Stool or ladder for reaching high shelves,

ii)   Storage cabinets-metal ones for office supplies and ones with glass doors for restricted documents,

iii)   Electric stylus for writing on the spines of the books,

iv)   Revolving stands,

v)   Bulletin boards, etc.

Self Check Exercises

6)   Enumerate various types of microforms commonly found in a special library.

7)   Describe two important record keeping equipment for periodicals.

8)   Enumerate two copying and three duplicating methods.

Note: i)   Write your answer in the space given below.

ii)   Check your answer with the answers given at the end of this Unit.

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4.5   NAME AND OTHER SIGN BOARDS

Providing appropriate unambiguous sign and name boards is very important in physical planning of a library. Some of the important tips in this respect are:

1)   Maintaining• consistency (in shape, size, layout, type size, placement, i.e., height, location on the wall, etc.)

2)   Logical order (progressive from general to specific)

3)   Descriptive, consistent and easily understandable terminology

4)   Avoiding redundancy

5)   Placing at decision points

6)   Having short, clear and accurate message in appropriate tone

7)   Relating them to architecture (dimension, colour, material, etc)

8)   Due consideration to principles of good design like hyperface, size and spacing of letters, lines, contrast, use of symbols and colour.

9)   Change sips when conditions change.

10)   Three important considerations are:

- flexible to change and easy to install

- remain attractive and useful for long period of time

- should be available in the future.

4.6 LIGHTING AND POWER

The main activity in a library is reading for which adequate lighting is essential. Poor light strains the eyes and causes fatigue. On the other hand, glare is equally strenuous, and direct sunlight on the books is positively harmful. While maximum advantage should be taken of natural sunlight (electricity is costly and not hundred percent dependable in our country), and it should be judiciously supplemented with artificial light. Glare of the sun inside the building should be avoided, so also shadows cast by artificial lighting particularly in the reading and service areas. There are certain areas where subdues lighting is preferable (e.g., micrographics section), and they may be suitably located. It is not only the quantity of light that is important, but also the quality of light, and a judicious choice has to be made to blend and complement natural light and artificial light. In critical areas, provision has to be made for emergency lighting specially if the library activity is carried out after daylight hours.

Some important tips in this respect are:

- Quality of light is more important than quantity or intensity. Quality depends on brightness contrast, colour contrast, intensity of illumination and absence of glare. Daylight has psychological value

- Brighter sources are tolerable at large angle

- More the no of sources providing light the better

- Distance between light source and top of rack (min. 300 mm) is very important

- Reflecting power of wall, ceiling, furniture, etc. contribute to lighting

- Advance planning for electrical distribution system with sufficient outlets, location of master switch, cost & maintenance are important

- Recommended ratio of lighting is as follows:

The visual task (book): Immediate surrounding (table):

Background (wall) = 10: 3: 1

Lighting norms

Min. Intensity in Lux	Lighting Glare Index (Ill. Engg. Soc.)
Illuminating Metcalf Engg. Soc. (London)	

Reading Room	200-400	350	19
Reading Tables			
Lending &	400	700	22
Staff Areas			
Reference &	600		16
other Services			

Self Check Exercise

9)   List important points to be considered while planning library lighting.

Note: i)   Write your answer in the space given below.

         ii) Check your answer with the answers given at the end of this Unit.

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4.7   OTHER ASPECTS

There are a host of other factors going to make satisfactory physical planning of a library. They include interior decoration, colour concept, acoustics & furnishing, upholsting, carpeting, airconditioning, insulating, ventilation, etc. It is necessary for a librarian to be aware of possibilities of getting right effects of all these aspects in making a library attractive, inviting and comfortable.

4.8.   STANDARDS .AND SPECIFICATIONS

In the field of library work, most of the standards or specifications that have evolved over the years are more in the nature of "accepted practice". The national standardising agencies in many countries have thought it appropriate to formulate systematically these accepted practices and bring them out as national standards. In India, the Indian Standards Institution (renamed as Bureau of Indian Standards) has brought out standards as listed in Appendex 1. These standards provide the necessary guidance to the librarian in choosing the right design with functional efficiency. The Natiional Institute of Designs, Ahmedabad, has also done considerable work in designing functional library furniture. More discussion about standards for library building, furniture, equipment, lighting, etc. can be found in the books cited at the end.

4.9   SUMMARY

In this Unit, we have studied the following:

i)   The design of a library building, taking into account the kind of users served by the library, location of the building to be within easy reach of its users, having scope for future expansion, financial resources available, and the building programme to be a team effort comprising the librarian, the architect and the managing authority;

ii)   The aspects of site chosen for the building, its size based on the number of users served, volume of work handled and services offered, functional efficiency of the building but without losing architectural beauty and proper artificial as well as natural lighting;

iii)   Areas of space required for the stack room, reading rooms, circulation counter, reference

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desk, catalogue for the public and others and their proper distribution and inter connections;

iv) Library furniture- stacks, periodicals display and storing racks, card catalogue cabinets, circulation counter, and other special furniture, not only chosen for their functional efficiency but also aesthetic, comfort, etc;

v) Library equipment-plain paper copiers, microform readers and reader-printers, kardex, filing cabinets and other office furniture, their need, selection and operations;

vi) Other aspects like sign boards, lighting, power, ventilation, etc.

vii) All aspects of the library building to be in tune with national and international standards and specifications; aspects such as layout of stack and reading rooms, periodicals display room; card catalogue cabinets, circulation, items of furniture, equipment to be in accordance with accepted standards, in terms of size, quality of material and performance efficiency.

4.10 ANSWERS TO SELF CHECK EXERCISES

1) i) **Academic library :** a school, college or university library.

ii) **Public library :** Delhi Public Library, City Central Library, Hyderabad, British Library.

iii) **Special library :** RRL Library, IDL Chemicals Library, Institution of Engineers Library etc.

2) i) Reading room for books and periodicals

ii) Textbook reading room

iii) Microform reading room

iv) Study carrel

3) a) i) Classification and cataloguing

b) i) Cataloguing codes

ii) Classification schedules

iii) Relevant bibliographies

4) Display racks are mainly of three types:

i) Pigeon hole type-It has two parts. One is a cupboard in the bottom and the other pigeon holes, about 36 in number, at the top.

ii) Step type-In this type, the periodicals are displayed stepwise, each step being 5 cm deep and 15 cm high.

iii) Inclined type- It is a box type rack, with five or six horizontal shelves covered by hinged wooden planks, with an inclination of 30 degrees to the shelf plank. The periodicals are displayed on inclined wooden plank, and the back issues are stored in shelf space behind the inclined plank.

5) a) Books are stored on single sided stack unit of 180 cm (L) x 195 cm (H) 25 cm (D). There are six shelves in each half of the units of 85 cm length. Since 25 books can be stored in a 85 cm long shelf, the stack can accommodate 150 (25 x 6) books in each half or 300 books in a full unit of 180 cm length. Hence the total number of units required will be 2000/300=6 2/3 or 7. Hence total stack length will be 180 x 7 = 1260 cm or 12.6 m. (If double sided stack units are used space required will be 180 x 4 = 720 cm or 7.2 m)

b) For bound volumes of periodicals, in a stack unit of similar dimension, only 10 shelves can be fixed. Since each shelf (85 cm) can accommodate 15 volumes, the full stack unit will accommodate 15x5x2=150 volumes. To accommodate 500 volumes, the number of units required will be 500/150=3 1/3 or 4. Hence the total stack length required will be 180 x 4 = 720 cm or 7.20 m. (If double sided stack units are used, then 180x2=360 cm or 3.6 m are required)

6) Slides, Microfilm, microfiche, micro cards, aperture card.

7) Kardex and Linedex

8) a) Copying methods:

   i) Silver halide processes (photostat, microfilm)

   ii) Non silver halide processes (diazography, thermography, and electrography)

   b) Duplicating methods:

   i) Hectography (spirit duplication)

   ii) Mimeography (stencil duplication)

   iii) Planography (offset printing)

9) i) Adequate quality lighting in reading areas.

   ii) Complementing natural light with artificial light.

   iii) Avoidance of glare *and* direct sunlight.

   iv) Subdued light in microform reading area.

4.11 KEY WORDS

Charging Desk	:	The main counter in the library where books are issued to readers and received back.
Daylight Factor	:	Daylight factor is the ratio of illumination at a designated point in the building to the illumination at ground level outside the building. For example, a 6% daylight factor is 300 lux for 5000 lux outside the building and it is reasonable (1 lux = 1 lum/ sq. meter).
Ephemeral Material	:	Those documents which become valueless after a short period of time, e.g, old catalogues, old text books, news bulletin, etc.
Microfiche	:	Flat transparencies, usually of 10 x 15 cm size which can accommodate 60 (or more) reduced page-images.
Micro-opaque Card	:	A micro-opaque card is similar to microfiche but instead of being film it is a white opaque card.

4.12 REFERENCES AND FURTHER READING

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APPENDIX 1

LIST OF INDIAN STANDARDS AND SPECIFICATIONS ON LIBRARY BUILDINGS, FURNITURE AND EQUIPMENT

IS-1553-1989   Primary elements in the design of library buildings, code of Practice relating to.

IS-1829(Pt I)-1976   Library furniture and fittings; Part I, Timber

IS-2672-1966   Code of practice for library lighting

IS-4116-1988   Wooden shelving cabinets (adjustable type)

IS-31-30-1985   Code of practice for handling and storage of transparencies (microfilm and microfiche)

IS-2695-1993   Drawing filing equipment

IS-1883-1983   Metal shelving racks (adjustable type)

IS-3312-1984   Steel shelving cabinets (adjustable type)

IS-3313-1994   Steel filing cabinets for general office purposes

IS-1829(Pt II)-1993   Library Furniture and fittings: Part II, Steel

IS-9210-1979   Display Cabinets (Amendment I)

APPENDIX 2

ESTIMATE OF SPACE REQUIREMENT FOR A SPECIAL LIBRARY

(All figures are in square meters)

SUMMARY:

S.No.	Area Head	Present Space	Required Spacent	Annual Addition
1.	Collection	500	590	70
2.	Reading	125	721	36
3.	Catalogues	23	23	3
4.	Browsing & New Arrivals	0	40	
5.	Circulation Counter	27	40|	
6.	Sp. Materials (Maps, Dictio-naries, Atlas, Stand etc.)	5	10	
7.	Micrographics Unit	20	16	27
8.	AV Room	0	30	
9.	Reprographics Unit	20	20	
10.	Documentation Unit	0	60	
11.	Working Area	225	300	30
12.	Computer Workstations	0	10	4
13.	Committee Meeting Room/ Exhibition Hall	0	40	0
		1000	1900	170

Requirements as on date: 1900
Future requirements for 10 yrs @ 170 /yr.:   1700

Total   3600

DETAILED WORKING:

1) Collection

No.	Type of Document	Unit rate (No./per sq. m)	Existing No.	Existing Space in Sq m.	Annual addition No.	Annual addition Space in sq m.
i.	Books	500/3.75	20,000	150.0	2,000	15.0
ii.	Reports	500/3.75	9,000	67.5	1,500	11.25
iii.	Bound Jls	300/3.75	7,000	87.5	1,500	18.75
iv.	Current Jls	25/4.00	650	104.0	25	4.00
v.	Standards, Reprints, Trade Catalogues, etc.	1000/3.75	7,000	26.25	1,000	3.75

vi.	Microforms	10000/2.00	75,000	15.0	5,000	1.00
	Sub-Total		1,18,650	450.25	11,025	53.75

Add: 6% configuration loss and 25% nonassignable space — 139.58 — 16.67

Total — 589.83 — 70.42

2) Reading Area

200 users (10% of population) @ 2.75 sq. m / user — 550

Add: 6% configuration loss & 25% nonassignable space — 170.5

720.5

Annual Addition: 10 users — 36.0

3) Catalogues

10 catalogue cabinets @ 1.75 sq. per unit — 17.50

Add: 6% configuration loss & 25% nonassignable space — 5.45

22.95

Annual Addition: 1 unit 2.3

4) Display of New Arrivals and Browsing Lounge — 40

5) Circulation Counter (+ Personal property counter) — 40

6) Special Materials
(Dictionary, Atlas & Map stands, trollies, vaccum cleaners, stools, chairs with writing pads) — 10

7) Micrographics Unit
(Production, duplication, hardcopy conversion, etc.) — 16

8) AV Room
(Films, slides, videos, equipment & carrels) — 30

9) Reprographics Unit — 20

10) Documentation Unit — 60

Total of 4 to 10 — 216

Add: Nonassignable area (25%) — 54

Total of 4 to 10 — 270

Annual addition for 4 to 10 — 27

11) **Library Working Area**

i.	Processing Unit (Classification, indexing, cataloguing, etc)	10
ii.	Acquisition Unit (Journals, books, reports, etc.)	14
iii.	Reference and Stack Maintenance Unit	0
iv.	Library Office (Mail Opening, etc.)	4
v.	Librarian	30
	Sub-Total	58

vi. Library Staff:

	Existing		Annual addition	
	No.	Space	No.	Space
Professional @ 11 sq. m	12	132	1	11
Others @ 7 sq. m	10	70	1	7
Sub-total	22	202	2	18

Add: i to v	58
	260
Add: 25% nonassignable space	40
Total	300
Annual addition	30

12)	**Computer Workstations** (LAN terminals, PCs, CD-ROM workstations, etc.)	10
	Annual addition	4
13)	**Committee Meeting Room/ Exhibition Hall**	40