CHAPTER 7
CONCLUSION AND RECOMMENDATIONS

Librarians have long been identified as "active, owner representative" in the planning and design of their library facilities. Librarians and building consultants have rich history of participation on building teams interacting with architects and interior designers throughout the building project process. This active role will become even more important as future library buildings are transformed by changing technology and user needs. The march of electronic publishing and telecommunications is producing library facilities that almost qualify as "smart buildings" with state-of-the-art communication services and sophisticated equipment.

The challenge to librarians and building planners is one of change and choice. Change in terms of User demands, furnishings to house the new technology, and staffing constraints. The future will not just happen to library services and library facilities; careful planning can ease the transition, keeping in mind that technology is essentially a tool, a tool to be housed to enhance library services. The development and assimilation of the new electronic publishing technology is still relatively slow in our University Libraries. "While it is generally believed that optical mass storage media such as digitally encoded videodiscs, optical digital disks, and CD-ROM will facilitate electronic publishing and the mounting of very large bibliographic and full-text data bases on local systems" writes Richard W. Boss, Information Management Consultant," it takes several years for that which is technologically feasible to become widely available (133). He notes that, "Because of the slow diffusion of new information technologies, it is necessary to plan new library and information centers to accommodate print, video, and electronic formats; and to provide for only a gradual augmentation and limited displacement of print by other media (134).

Librarians and library building planners are advised to intensify their participation in the pre-planning and planning process for new facilities. The library building programs or "architect's assignment" must address in detail the specific technology and services to accommodate and the building programme must be referenced throughout the project to document all decisions and changes. The project architects and interior designers must be required to include a cadre of professional consultants and engineers to provide counsel to the building team in specialized areas including telecommunications, acoustics, energy distribution systems, lighting, automation, energy conservation, and signage and security systems.

134. Boss, P. 102
7.1 Basis Planning Principles

Effective public library building planning will still be guided by three basic principles that have evolved over the past more than 50 years, namely, primary consideration to function, flexibility and aesthetics. Planning for function is continually influenced by evolving user patterns, and staffing needs and finances. The information technology has heightened the emphasis on planning flexible facilities. Attention to aesthetics is paramount importance as University libraries will need to give more attention to marketing and attracting new users.

7.2 New Technologies and Energy Systems

The new information technologies are driving the most significant changes for library building planning. The changes are affecting service delivery, organizational structure, information storage, retrieval and dissemination. They are also fueling user pressure for increased access to library materials. Hypertext technology with the capability to link several data bases of full text and the broader, interactive hypermedia make it possible for users to create their own reference and to quickly locate related materials and information. As more and more information and knowledge is being stored digitally in the binary formats of computers, videodisc and audio discs, it is impacting on the library environment, its furnishing, storage requirements and layout. The technology is producing a concomitant demand on library buildings for more sophisticated, responsive energy delivery systems for electrical service, telecommunications and automation linkage.

7.3 University Libraries as Community Information Centers

The traditional mission of University libraries has been to locally collect and provide books and materials for Research students, Faculty staff and local service area population. While the print and print media is projected to continue to represent a major resource for libraries, and especially University libraries, its role is gradually giving way to the commercial data bases. Today, in India a relatively small number of library users have access to the data bases at work or home and they turn to the library for that access.

The mission of these libraries is undergoing a transition. An OCLC Ad Hoc Committee on New Technology in 1988 prepared a report on the new technology that examined its impact on libraries and librarianship. The report noted that:

"Information vendors outside the library community supply information of all kinds, particularly value-added information, for a fee to end users. Libraries will have to Develop and offer their own value-added services
if they are to compete with these private sector groups. Library definitions are no longer clear; libraries are assuming more of a gatekeeper role, linking patron and information from a variety of sources, generally electronically. This new role will increase and expand in the next 10 years. (135)

The University Libraries in Maharashtra in this context will emerge with extended missions to collect and provide access to books, electronic media and local resources and to provide free and free-based guidance and assistance to the growing number of users who chose direct access to information technology.

7.4 Planning Self-Service in University Libraries

Library services and new library buildings should be planned for more self-service. Self-service is making a debut in the form of electronic information kiosks and pilot CD-ROM jukeboxes, and Internet cafe to dispense information. The move to self-service will also call for more attention to effective signage and graphics to guide and direct users with minimal staff assistance; library staff will be strategically located to provide needed, direct service and to preserve the personal interaction that is a cornerstone of University library service.

The library layouts will also have to change to compete with other public services and information agencies. The University libraries in the future will need to re-think and re-arrange the materials collections and accommodations for users. Ken White's Bookstore Planning & Design (136) the best book on this subject, should be required reading for all library planners. The author has designed more than 1,000 bookstores and the book will help librarians stretch their imagination about furnishings, displays and layouts designed with an emphasis on the user.

The eminent library planner, Lowell A. Martin, speaking on new directions for libraries, suggests that for libraries to attract and hold their patronage and support, they must become "emphatic, stimulating, responsive ..." and exciting rather than orderly if they are "to vibrate the search for meaning." (137). He called for a change in the library's physical arrangement to make it easier to use, "a constellation of special libraries rather than a single monolithic structure" with special section for culture hounds, business people, civic leaders, parents and others and he implored librarians to " First think people rather than books." (138)

138. Martin, P.11
7.5 Space Planning Formulas

Library space planning formulas have traditionally been based on books and other hard copy media. University Libraries have commonly used the planning criteria of 15 volumes per square foot assuming the majority of shelving is 90" double-faced steel shelving with 36" aisles and seven to eight books per lineal foot. This calculation is proving unreliable; however, due to barrier-free aisle requirements of 42", it results in collections that are too densely shelved and the need to constantly shift books returning from circulation. For gross planning estimates, University libraries are advised to use the 10 volume per square cost calculation, commonly used for academic and research libraries; this figure allows for the 42" aisles, permits flexibility for the collection to ebb and flow with minimal shifting, and minimizes use of the hard-to-reach top and bottom shelves. Richard Boss' book *Information Technologies and Space Planning for Libraries and Information Centers* (139) provides a number of equivalency space planning formulas including a summary of the formulas used by a number of a academic and research libraries.

Compact shelving, commonly used in academic, special and research libraries, of America, China, Europe, Japan and Russia, will continue to be incorporated into more public libraries of all sizes as a cost-effective storage means, particularly given rising construction costs. Compact shelving generally stores twice as many volumes as conventional steel shelving in about one-third the space. Compact shelving costs about three times more than conventional steel shelving and adds to the construction costs as it requires increased live, floor-loading requirements; the floor load-bearing requirement in most libraries is 150 pounds per square foot and typical compact shelving installations require 200 pounds or more per square foot.

Efficient, solid-state, manual and mechanically assisted or electrically operated compact units with user-safe controls and monitors are also easy to operate are available from different vendors. (See Appendix "B").

The decision to incorporate compact shelving should be carefully made in terms of cost comparisons, the material to be housed, collection fluctuation factors, frequency of access required and the compatibility of the compact shelving unit in terms of layout and traffic flow.

Some space planning formulas are unchanged. The four-place reading table, for example, continues to hold its own as one of the most economical seating choices for libraries of all types at 25 square feet per seat. User seating at carrels designed for audio-visual, microforms, personal computers or related uses requires 35-40 square feet.

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139. Boss.
Some library planning guidelines suggest an allocation of five percent of the shelving and reader seating space for the support service areas such as cataloguing/processing and administrative offices. This approach is not useful for most library systems, however, with centralized administrative, cataloguing and data-processing operations. Space planning for most public library staff support and office functions is still calculated on an individual library basis. Space guidelines for individual, public service work stations for reference or circulation staff are generally calculated at 100 to 150 square feet. Non-public service, individual work stations usually range from 80 to 150 square feet per staff member; libraries are making widespread use of modular or panel-open office systems to provide flexible, work stations "designed around the staff to reduce these space requirements.

In this age of Information Technology more attention will also be given to determining the space requirements for library automation. This will require close consultation between the architect and engineers with the library system's staff, the automation system's representative and field installers as to space requirements and placement of the Central Processing Unit (CPU); Server or central hardware. The consultation must detail all equipment/supply storage needs, workspace for staff, telecommunications and energy specifications, environmental requirements for humidity and temperature, fire and intrusion security systems, emergency backup equipment, antistatic provision and planning for future growth. Richard Boss's book, referenced above, provides planners with an authoritative guide for calculating space, electrical and telecommunications requirements.

7.6 University Libraries as Community Education Centers

The evolving technology is also opening new opportunities to provide more formal and information education in libraries, including participation in distance learning programmes through a mix of information and communication media including video, satellite telecommunications and telephone lines with storage capability ranging from mini computers to Internet Server. The new educational tools range from satellite teleconferencing and electronic mail to computer conferencing and videotext. The high-tech classrooms will be designed to serve as multi-purpose meeting rooms in support of other library programming.

University libraries will also be using these or other classroom facilities to meet the more comprehensive and ongoing education and training required for the new library work force itself. The new technology and information services will mandate this increased investment in library staff, a staff that is more highly skilled, technologically competent and flexible. The in-service education and training will require state-of-the-art classrooms.
7.7 Maintaining the Library Building

Finally, the new, smarter library buildings will require more attention to planning and designing for maintenance. Planning including budget projections for maintenance should begin early and the costs for operating the new facility should be identified and approved before construction to avoid a "poverty-stricken" maintenance programme. There are too many variable in terms of building size, energy conservation and operating hours to provide exacting cost estimates. Designing new library building for maintainability will increase its effectiveness and reduce maintenance costs.

Space planning for the future library facility to accommodate change, evolving services and ease of maintenance will require more creativity, time, study and consultation on the part of Librarian. It will call for vision, planning, marketing skills and risk-taking to provide viable, inviting library facilities to serve as the principal community information and education centers in our communities in the 21st century.

7.8 Recommendations:

A number of principles and practices have been referred to in the foregoing chapters for the guidance of planner and designers regarding "Space Planning in the University Libraries of Maharashtra in the Changing Information Technology Scenario". Certain recommendations have been drawn on various elements related to the planning and designing of University Library Buildings.

The Recommendations:

1. The entire campus of University/Institute must be developed on integrated planning concepts.

2. The library building should be one among the first buildings to come up on such a campus.

3. Planning of the Library building should be the joint responsibility of Head of the University, the University Librarian, the Architect, and University Engineer / a Library Consultant.

4. Futuristic planning should be adopted. The plan should accommodate all present needs and future requirements for at least 20-25 years to come and also take note of developing/incoming technologies into account.

5. The building should be located centrally on an elevated site, easily identifiable and approachable.
6. The site should have good approach roads leading from all direction for vehicular traffic, and pathways for pedestrians.

7. The building should be more functional than ornamental.

8. The building should be based on modular concepts to provide flexibility for reorganization of library activities. This will also permit expansion of the building by adding similar modules in the future. (See Appendix "C" especially Jawaharlal Nehru Library, Kalina, Mumbai)

9. The architectural style should be in harmony with the surrounding nature and other buildings.

10. The building should be innocently attractive and inviting to the users.

11. There should be sufficient parking area for cars, scooters, and bi-cycles near about the building.

12. Its surrounding area should be declared a strictly peaceful zone.

13. The ground floor as well as other floors should be at uniform levels so as to permit smooth movement of book trolleys etc.

14. The library should have a few lounges for general reading purposes with soft cushioned, low height furniture for comfortable relaxed consultations.

15. Ergonomical principle should be followed while designing the library buildings, its furniture and fittings etc.

16. The library should be provided with aesthetically designed, durable and comfortable furniture.

17. The seating capacity of the reading rooms should be over 30% of the user's strength.

18. Sufficient number of cubicles, single or multiple types, be provided with lights and small shelves for research scholars and other serious readers.

19. Windows of the reading rooms should be as large as possible to permit proper air circulation, cross ventilation and allow sufficient natural light to filter inside the library.

20. The buildings should be designed on open shelf system for the convenience of the users. Only precious materials, rare documents and out of print books may be kept under reserve or controlled circulation.
21. The interior walls of the library must be used for displaying latest issues of periodicals (with space at the bottom for old issues) or for displaying of new arrival of titles. The other walls which are not covered by display units should be provided with good paintings, portraits and photographs of National leaders, Scientists and other renowned persons.

22. There should be provision for wide and convenient staircases, swift elevators and noise-less booklifts.

23. Water faucets/water coolers for drinking water at each floor at convenient location, are a must.

24. Provision of clean, airy toilets with automatic flushing systems, hydraulic door closers, exhaust fans and good lighting is a necessity.

25. Provision of space for canteen is essential.

26. Rest/Lunch room for staff is an essential requirement.

27. Provision of a spacious and large dormitory/basement, to house less-used documents under compact storage conditions with easy retrieval system is desirable.

28. Well furnished and ideally equipped Seminar rooms are also required for the teaching staff.

29. There should be book exhibition halls, conference rooms, committee rooms and good spacious well equipped auditorium with a pleasant lounge and spacious foyer with display boards etc.

30. Access, through the communication network to all sections and services of the library both within and outside, through telephone, telex and computer terminals and Internet is necessary.

31. Proper lighting arrangements as per requirements of the activities performed in the different areas are of the higher importance.

32. The building should have reliable emergency lighting system.

33. A mechanical and electronic theft detection systems should be incorporated for security of library materials from pilferage.

34. It should have a proper security system against fire hazards with provision of fire extinguishers and other fire fighting equipment duly supported by high capacity water hydrants.
35. It should have a good fire alarm system.

36. Sprinkler system may be installed to control fire hazards.

37. A location chart of fire fighting equipments must be displayed at prominent places and such equipment should be fixed at easily approachable places.

38. It should also have emergency exit doors and staircases. Escape routes should be properly marked on the library building plan, displayed on the different floor and with properly lightings.

39. The library must have proper ramps at the entrance.

40. The library must provide all the facilities for the disabled/handicapped people as per the Questionnaire (part 6. Compliance with ADA Accessibility Guidelines).