

图书馆空间规划：斯里贾亚瓦德纳 普拉科特大学的框架

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摘要 高校图书馆的空间规划与收藏和员工发展同样重要。信息呈指数增长,学生人数不断增加,学习和教学创新、技术和其他变化使得高校图书馆员开始更多地考虑图书馆的空间规划。本文的目的是根据从斯里贾亚瓦德纳普拉科特大学(以下简称 USJP)图书馆收集的经验提出一个关于图书馆空间规划的框架。USJP 作为斯里兰卡学生数量最多的大学,始终优先考虑学生的需求。因此,图书馆的空间规划是根据大学战略规划中的目标和活动完成的。USJP 图书馆空间规划框架包括四个主要方面:知识仓储、学习区、互动点和服务区。USJP 图书馆高度重视“图书馆作为场所”的观念,为我们的用户提供学习、社交和休闲的机会。对于学校当局而言,迫切需要使图书馆成为鼓励学生和学者获得令人兴奋和有益体验的场所。由于建筑物的大小、可用资金、用户数量和用户需求的差异,图书馆的空间规划可能因馆而异。在 2014 年开始的 USJP 图书馆现代化项目下,改造现有区域,使图书馆成为支持课程的有效平台。改建后的图书馆四个区域拥有不同的比例,知识仓储 38%、学习区 32%、交互点 18%以及服务区 12%。为了协助正在规划新建筑或重新设计老建筑的图书管理员,本文详细讨论了四个区域各自的组成部分以及划分不同比例的基本原理。

关键词 图书馆空间规划;斯里兰卡高校图书馆;现代化;重新设计

Space Planning in Libraries: Framework at University of Sri Jayewardenepura

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Abstract Space planning in academic libraries is important as much as its development of collection and staff. Exponential growth of information, increase of student number, learning and teaching innovations, technology and other changes have made academic librarians to think more on space planning in libraries. The objective of this paper is to propose a framework on library space planning based on the experience gathered at the University of Sri Jayewardenepura (USJP) library. The USJP, being the largest university in Sri Lanka in terms of student number, always give priority to student needs. Therefore, space planning of the library was accomplished in accordance with goals and activities in the strategic plan of the university. The USJP framework on library space planning consisted of four main aspects; Knowledge Reservoirs, Learning Zones, Interactive Spots and Service Areas. USJP library highly values the concept of 'library as place', providing opportunities for our customers to learn, socialize and relax. The need of making the library a place that encourages students and academics to have exciting and rewarding experiences is of prime importance to the university authorities. Space planning in libraries may differ from library to library due to the size of the building, available funding, number of users and varied needs of users. Under the modernization project of USJP library which started in 2014, the existing area was transformed to make the library an effective platform to support curriculum. The modernized library has all four aspects in different proportions; 38% for Knowledge Reservoirs, 32% for Learning Zones, 18% for Interactive Spots and 12% for Service Areas of the whole floor area. The components in each aspect and the rationale for varied proportions are discussed in detail with the view of assisting other librarians who plan for new buildings or re-designing their libraries.

Keywords Library space planning; Academic libraries; Sri Lanka; Modernization; Re-designing

1. Introduction

Space planning in academic libraries is important as much as its development of collection and staff. Library client is the foremost factor in any library. The existence of libraries depends on maintenance of satisfied user community. Proper space planning by transforming existing spaces with innovative ideas is performed by many academic librarians across the globe at present. Teaching, learning and research are the three main pillars of a university. In supporting this, USJP library works towards its mission "to provide access to the services in an efficient, effective and useful manner to support teaching, learning and research activities of the intellectual community by making resources available, and by assisting users to be acquainted with skills locating information deemed necessary in the modern information age".

Academic libraries are shifting from the ways they provided and delivered information to new directions of facilitating users to acquire knowledge. Exponential growth of information, change in print to electronic formats and changes in technology have pushed libraries to a new paradigm. Technology and other changes, impact of new and future teaching methods, increase of student numbers recognition of need for social learning spaces, learning and teaching innovations and student expectations (Matthews & Walton, 2014) have made academic librarians to think more on space planning in libraries. Further, librarians need to emphasize more on finding places to accommodate new acquisitions by withdrawing old stocks, remote access, self-renewing, allocating space for learning commons, and adding security features to material as well.

Head (2016) has discussed several concepts in planning and designing academic library space. Through these concepts, architects and librarians have identified the functionality, environment, furniture and equipment for different spaces. Collaborative spaces are for users to work together and use technologies to access information whereas social concept describes mixed-use space where conversation and informal learning are encouraged. Warm, friendly and inviting spaces are considered as welcoming spaces in a library. Xia (2004) states that space changes in libraries are unavoidable after the construction of the library building and during normal operations.

2. Library at University of Sri Jayewardenepura

University of Sri Jayewardenepura is situated in close proximity to the capital city, Sri Jayewardenepura Kotte in the Colombo District, Western Province, Sri Lanka. It is the only state owned university located in the capital city. This university was started in 1873 as a *pirivena* where Buddhist monks were studying. With the conferring of university status in 1959, it became Vidyodaya University. In 1978 it was renamed as University of Sri Jayewardenepura. Being the largest university in Sri Lanka in terms of student number, it has now grown up to seven faculties; Humanities & Social Sciences, Applied Sciences, Management Studies & Commerce, Medical Sciences, Technology, Engineering and Graduate Studies.

The library at University of Sri Jayewardenepura is situated in the heart of the university providing quality services to its user community. With a print collection approaching two hundred and fifty thousand volumes in various disciplines, a significant online information service including electronic resources, and a total staff of 80, this large library system serves a population of 12,000 undergraduate students, 3,000 postgraduate students and nearly 1,000 academic, administrative and non-academic staff. USJP library is today in a phase of transition, largely brought on by the changing technological adaptations and ever increasing volume of information day by day. The main library extends its services to the whole population of the university together with 3 branch libraries; Medical, Technology and Engineering.

3. Planning space

Planning space, redesigning, renovation, remodeling, modernization and developing space are some of the terms used in the literature for library space planning. There are number of studies carried out globally on library space planning, but very little in Sri Lankan context. Nowadays, universities, across the campus need to create a more usable, efficient and user-friendly environment and the library is no exception. Planning spaces in libraries is not a simple task as it requires taking into consideration about different user groups, their different needs at different times and behaviour. The optimal use of the designed spaces could be gained by giving emphasis to all the major factors that affect the use of the designated space. Before designing, proper planning is important. The framework of redesigning spaces used at the USJP library is explained in this paper in view of assisting other libraries that plan spaces or redesign existing space.

USJP library highly value the concept of 'library as place'. This gives a broader meaning of providing library customers with opportunities not only for learning, but for socialization, relaxation and restoration. We need to serve as a one-stop location where students and academic staff can easily find the resources and enjoy the other library services and facilities they need. Functional design was given more weight than the architectural features. As King (2004) states, functionality, adaptability, accessibility, choice of learning spaces, interactivity of design between users and services, environmental suitability, safety and security, efficiency in space, staffing and running costs are need to be considered in library designing. F. D. Bluford Library's redesign project has focused on creating open, activity promoting, colorful spaces to attract students (Teleha, Sims, Spruill, Bowen, Russel & Exner, 2017). Certain places were arranged for students to work alone or in groups, with support of laptops or tablets.

Libraries need to play a major role in supporting user activities by providing a variety of services and programmes. Planning of physical spaces of the library needs to change as with the changes in the role of the library. Library space planning may differ from library to library and it should be unique to a particular library reflecting the purpose of the library to its user community (Bell & Cottrell, 2015). This fact is also stressed by Shill and Toner (2004) in reporting result of a survey of 354 academic libraries carried out between 1995 - 2002 to know the improvements which have been made and impact of those improvements on usage of libraries in USA.

Based on the experiences of space transformation of the HKUST library in Hong Kong, they visualize future library spaces with certain prominences by embracing the brand 'Let the Library be the Library'; learning space, research space, social space for collaborative learning, cultural space, innovative space, flexible space and open platform (Chan & Spodick, 2014). Further they state that the physical and virtual space cannot be separated as they complement each other through creative balance. NTU libraries in Singapore have developed a framework for library space planning. It gives emphasis to four areas; collaboration, sanctuary, interaction and community (Cheong Choy & Nee Goh, 2016).

4. Framework of Space Planning at USJP Library

Space planning of the USJP library was accomplished in accordance with goals and activities in the strategic plan of the university. Cottrell (2011) states that academic service units should not simply aim to support the academic mission of their university, but work with a meaningful connection of accountability and assessment. Under the goal of infrastructure, organizational structure, resource administration and development of the strategic plan of the USJP, several indicators were identified to give emphasis by the library. By 2021, it is planned to increase reading area, seating capacity, student centres/discussion areas, recreational facilities and Wi-Fi coverage (University of Sri Jayewardenepura, 2017).

In this study, only the main library of the University of Sri Jayewardenepura is considered, as Technology and Engineering branch libraries are at temporary locations and Medical Library is planning to

shift to its new premises at the recently erected Medical Faculty building. USJP library studied the existing set up and future requirements according to user needs and emerging trends. We need to create spaces flexible enough to meet the current and future needs of our customers. Although no specific surveys were conducted with the administration, academic staff and students, usage data, valuable discussion input, professional reading and travel to see modern library space were main insights to the project and frequent site visits showed that engaging stakeholders in the process of design. Changes and new features to be added were basically identified with the available floor space and the proposal was submitted to the university authorities. They were very supportive towards this, and the relevant divisions were given directions to work on this project. Under this visionary, Modernization Project was initiated. Renovation and space planning were sub themes of the main project. USJP library space planning framework consists of four main aspects; Knowledge Reservoirs, Learning Zones, Interactive Spots and Service Areas. Each and every square meter in the library comes under any of these aspects. Going into a mixture of these aspects, some spaces have collections and range of study spaces distributed with a mixed proportion. Learning Zones, Interactive Spots and Knowledge Reservoirs can be considered as formal and informal learning spaces. Librarians need to focus on integrating the management of different spaces to make them more attractive and popular (Walton & Mathews, 2013) as in the case of Learning Zones and Knowledge Reservoirs in the USJP library space planning. In projecting these four aspects to the Modernization Project of the library, three basic steps were used; identifying strategic areas and services that would be changed or enhanced, planning and implementation.

In response to the changing nature of learning across the globe, the requirement of group study spaces is met in our library by combining few tables together to give a large table space for students to work in a group. Lobby area is equipped with limited furniture items, tea/coffee vending machine and Wi-Fi facility for those who prefer to be surrounded by other people and with noise. Individual study spaces are also provided reflecting the needs and user preferences. We use shelving as noise buffers to ensure that some quite space is also available for our customers. Natural foliage and reading promotion posters are used for the purpose of beautification of the premises. Library areas again can be categorized with two distinct concepts; quiet and dark versus noisy and light as in the case of NTU libraries (Anandasivam & Cheong Choy, 2008).

The framework developed for space planning of USJP library is shown in Figure 1. The four main aspects; Knowledge Reservoirs, Learning Zones, Interactive Spots and Service Areas are depicted as main pillars of the library. Knowledge reservoirs are the places where all information sources in print format are

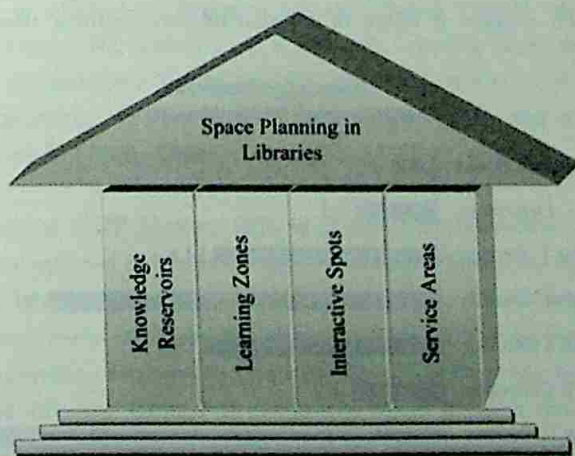


Figure 1 USJP Library Framework in space planning

stored. Learning Zones are the places where users do their own reading. The places where library customers used for socializing, relaxing and using their own or library hired technological gadgets are considered as Interactive Spots. All the areas where services are provided, mainly staff stations are categorized under Service Areas. Functionality of each and every corner of the library is taken into consideration in developing the USJP framework.

4.1 Knowledge Reservoirs

Prior to the invention of electronic information delivery modes, almost all the information sources acquired by a library are housed requiring more space in the library. Most of the printed materials are still found in university libraries and these are considered as Knowledge Reservoirs. Addition of online and electronic information sources and partnering with consortia collections do not require floor spaces to libraries to store them other than having few equipment like computers for use those information sources. USJP library is an active member of Consortium of Sri Lankan Academic Libraries (CONSAL) and obtains access to few electronic databases and provide document delivery services through the consortium. Further, the library maintains an institutional repository called Scholar Bank collecting and preserving publications and creative work of our own academics. Considering these facts, USJP library has allocated only 38% of total floor area for Knowledge Reservoirs mainly used for housing library material in print format. This percentage will decrease in future with acquiring more and more electronic databases and electronic books affirming the situation that every resource does not have to be physically in the library (Brantin, 2007).

According to the framework, Knowledge Reservoirs mainly consist of Lending Collection, Permanent Reference (PR) Collection, Scheduled Reference (SR) Collection, Periodicals Collection, Ceylon Room (CR) Collection and Depository collection as shown in Figure 2. Ceylon Room (CR) has a special collection of rare books authored by Sri Lankan authors and materials written about matters related to Sri Lanka. A rare collection of palm leaves is also available in the CR. In addition, postgraduate theses and dissertations of the university are also housed in it. In the Depository collection, lesser used materials are housed and this is expected to advance into a compact shelving area. Compact shelving is one of the solutions for insufficient space in libraries. It allows libraries to store more materials in less space and material in compact shelving is immediately accessible (Peoples, 2014). Non-used books for the last 30 years period from the Lending and Scheduled Reference collections are taken out and re-processed as Depository items. This process is carried out annually as in the case of most libraries, shelf space is finite and shrinking (Payne, 2014). Establishing a Depository collection allows us to keep the useful, core and frequently used collections close to users in proper storage space and it brings a fresh look to the existing collections. All the above described Knowledge Reservoirs are spaces which support a range of interdisciplinary learning needs of the university from

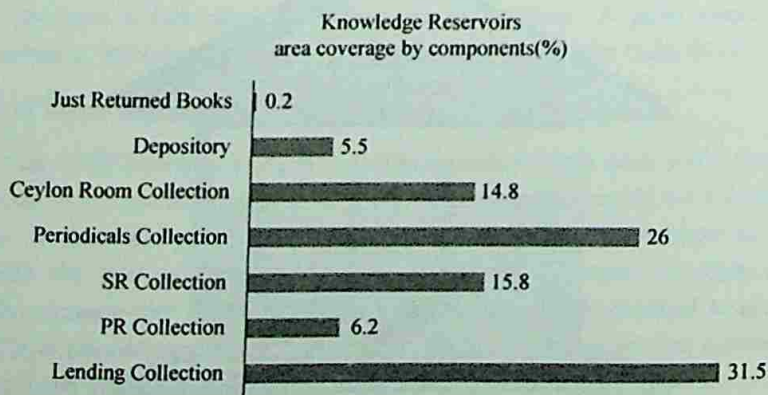


Figure 2 Components and areas in Knowledge Reservoirs

humanities and social science to applied sciences, management studies and commerce, medicine, technology and engineering.

READ shaped letter formation book rack was designed to house "Just-returned" books. Though it occupies a small area when compared to the other Knowledge Reservoirs, it gives an elegant look to the library. READ shaped rack is kept at the end of the lobby and it is visible to the far end of the main entrance. Since majority of "Just-returned" books are in high demand and frequently circulated, this area is crowded in most of the time as our library customers have a habit of browsing the books in this rack.

4.2 Learning Zones

Space allocated for users to do their own reading, that is where mostly students used to study are the Learning Zones. Library has a reading room with a separate entrance and this space is kept open on 24×7 basis. This is the largest Learning Zone in the library and the seating facilities are arranged in clusters as well as individual study carrels. While having another two Learning Zones separately; Periodicals Reading Floor and the CR Reading Hall, all other Learning Zones are blended with Knowledge Reservoirs; SR Learning Zone, PR Learning Zone, CR Learning Zone and Periodicals Learning Zone. Library has allotted 32% of the total floor area for Learning Zones and the distribution is given in Figure 3. All these Learning Zones provide various type of seating arrangements.

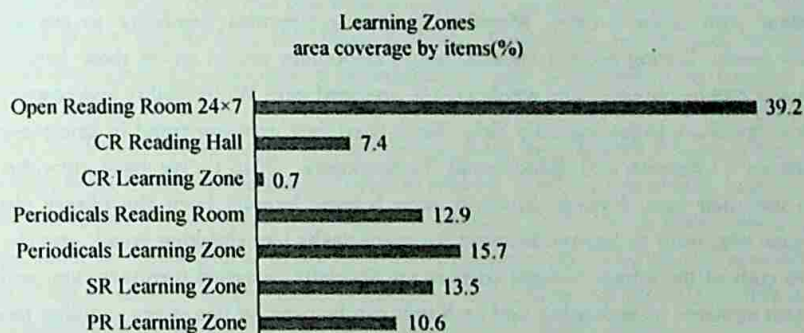


Figure 3 Components and areas of Learning Zones

Still the area allocated for Knowledge Reservoirs is slightly higher than that of Learning Zones. A balance is needed to be maintained between these two aspects. With the increase proportion of digital to print materials, there will be a time to reduce the area for Knowledge Reservoirs and the need to have more Learning Zones. This fact is affirmed by Anandasivam and Cheong (2008) when planning the NTU Art, Design and Media library design. We need to provide adequate Learning Zones proportional to the university population with room to accommodate future growth. Present libraries need to design to accommodate constant change, with book storage replaced by more and more interactive places where people gather and use for functions (Cohen, Cohen & Cohen, 2005).

4.3 Interactive Spots

Out of the total floor space of USJP library, 18% is occupied by Interactive Spots. The main Interactive Spots and relevant areas are depicted in Figure 4. Each of the main Interactive Spots sometimes contain many sub Interactive Spots like having Gadget Corners, Nescafe Corner, Kiosk in the lobby area. Due to rapid technological changes, heavy use of social media communications and various learning modes, a wide range of activities is available for university students to shape up their lives according to their needs and preferences. USJP library has provided different settings of computers where students can access whatever they require unlike most of the libraries where computers are usually set up in clusters. Types of settings of computers in our library include Interactive Study Area, Gadget Corners and Lobby benches with Wi-Fi coverage. Triangular shaped movable specially designed computer tables are used in the Interactive Study Area ensuring

that collaborative spaces need configurable furnishing (Head, 2016) where users work together by sharing ideas, brainstorming and practicing presentations. These triangular shaped computer tables can be arranged in single unit, double units, and in multiple units forming different settings matching with the purpose.

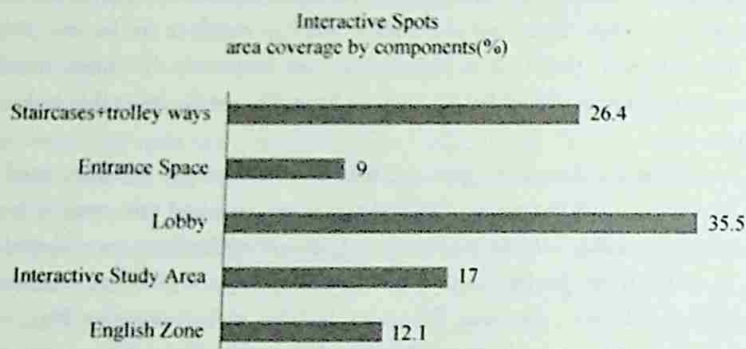


Figure 4 Components and areas in Interactive Spots

Newly renovated lobby area creates a dramatic change in the use of the library. It consists of movable bench type seating with cushion tops. Movable furnishing provides flexibility to customers to arrange according to their needs. During normal opening hours customers use to sit on these benches and use their laptops, tablets and mobile phones. The whole area is provided with Wi-Fi facility and power outlets ensuring that all Interactive Spots are technologically rich. Since there is a growing trend in bring-in-your-own-device to academic libraries (Libraries and Educational Technologies, 2016), we have provided the necessary infrastructure to use their own devices. Students who borrow laptops from the library also use this area comfortably. Those who want to browse Internet for quick tasks like checking email, use the gadget corners housed in the two ends of the lobby. Gadget corners are specially designed furniture item with a table top to keep two computers opposite to each other and each unit can be used by two users standing face to face. Since the windows near the two sides of the lobby are faced to an open space of the two quadrangles, it gives customers a comfortable environment with scenic beauty and natural breeze when someone uses the gadget corners.

Further, this spacious lobby provides a venue for different activities, such as religious ceremonies, book launches, exhibitions and receptions. The coffee/tea vending machine kept at the front end of the lobby supports in providing refreshment facilities for the activities organize in the premises. These activities were held in meeting rooms, lecture halls and offices scattered throughout the campus in the past. The university community likes to move their activities to the library now, where students and academics gather for their intellectual needs.

The growth of the ever-changing library user needs, including desires for more inspirational experiences, active and shared spaces and technologically connected features are the facts considered mostly in arranging Interactive Spots. Following up the popular and fast growing concept of 'fast-casual' in restaurants, library started a Nescafe Corner in the library. This Nescafe Corner offers patrons the natural light, natural ventilation, Wi-Fi and hot coffee and tea from the token operated vending machine. Multiple and varied seating arrangements and power outlets are also provided to cater the technology savvy students. Electronic information kiosk located behind the main counter requiring floor space, was not taken into consideration during the days before the emergence of computer technology. Touch screen facility in the kiosk helps to attract students to the library. In addition to Online Public Access Catalogue (OPAC) browsing and library floor guide facilities, important notices and announcement are also displayed in the kiosk screen. Staircases and trolley ways are considered as mobile tolerant zones without totally banning the use of mobile phones

inside the library. Students use staircases and trolley ways for their mobile conversations without disturbing the other users in Learning Spaces or Knowledge Reservoirs.

Inviting and beautiful main entrance to the library has a wide opening with a huge wooden, decorative, sliding door creating a welcoming environment. Welcoming entrance helps to attract customers while making them proud (John 2016). Occasionally, half walls of the sides of the main entrance are used by students for relaxed seating and networking. Newspaper reading stands are available at both sides of the main entrance on the ways to the cloak room on one side and to the inquiry counter on the other side.

English Zone (EZ) is another Interactive Spot where students have sessions with librarians and lecturers from the Department of English Teaching. The aim of EZ is to facilitate learning English starting with very simple story books and leveled readers. Comfortable, eye-catching seating facilities and adjustable revolving racks are special furniture provided in this section. Students like variety of furniture types in libraries; adjustable and comfortable in varying heights, shapes and colours (Andrews, Wright & Raskin, 2016).

4.4 Service Areas

USJP Library has number of service points located in different sections in the library. Components and the relevant area for each component are shown in Figure 5. Main counter serves as a multipurpose service point. Inquiry counter handles inquiries from patrons, registration and de-registration of members. IT help desk is available at the Interactive Study Area and this desk also handles laptop lending service as well. Information counters are staffed at the Inquiry Counter, Ceylon Room, Periodicals Section and Permanent Reference Section. These Service Areas are adjusted to accommodate new workflows that support future modern libraries. Newly established Research Support Unit and User Education Unit are also vital Service Areas. Research Support Unit in the library supports towards enriching the research culture in the university while User Education Unit helps to streamline the information literacy sessions, awareness sessions and orientation sessions that are conducted by the library. According to Farmer (2016), book stack aisles, snack rooms and hallways are considered as serendipitous areas for research interaction. Though the area designated for the Research Support Unit is small, Lobby Area, Interactive Study Area and Nescafe Corner are ideal for that purpose in our environment in addition to the places that Farmer (2016) suggests.

Opening hours of the library were extended from both ends during examination periods starting from 5.00 a. m. in the morning till 10.00 p. m. in the night. This is in addition to the 24×7 open reading room facility. During extended opening hours, limited services are available. Accessibility is not extended to all public areas of the library and is restricted to specific parts to ensure safety and security of users as well as library properties.

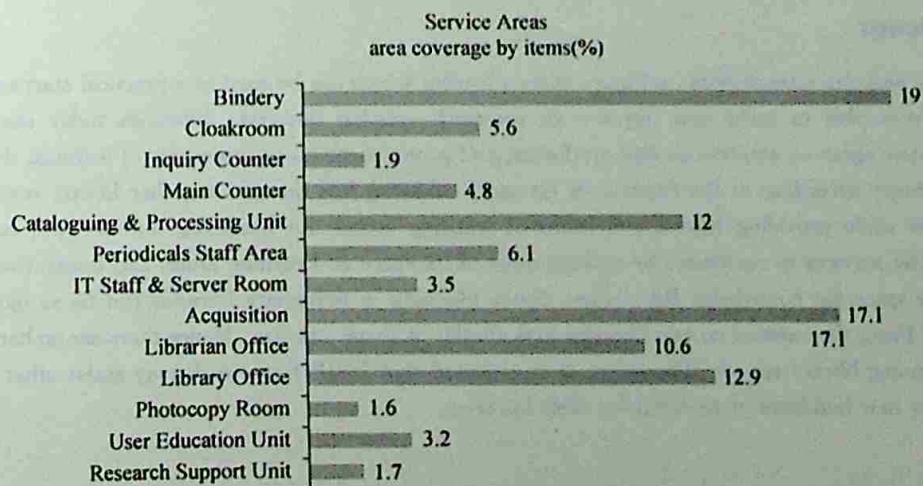


Figure 5 Components and areas of Service Areas

All the spaces allocated for in-house functions are also considered as Service Areas. IT, Acquisition, Cataloguing & Processing and Bindery units are not directly dealing with customers, but other Service Areas like Photocopy Centre, Cloakroom and all other office spaces are directly dealt with customers. IT staff is involved with all IT related matters including maintaining the open source integrated library management system, institutional repository-Scholar Bank, OPAC and consortium work. When summing up, the least amount of floor area is assigned to Service Areas, which is about 12% of the total floor area of the library.

5. Distribution of area in four aspects of the framework

At present, the distribution of floor area of the library for each aspect of the framework is shown in the Figure 6. The total floor area of the functioning library is approximately 3 757 m². The largest area is occupied by the Knowledge Reservoirs, which is mainly the stacks area. It is about 38% of the total area. Followed by Learning Zones, where students mainly use for studying, which covers on 32% of total library floor space.



Figure 6. Distribution of total floor area in four aspects

Places where customers use for various activities and are crowded during most of the time of the day are Interactive Spots which spread over 18% of the total area. The least amount of floor area is allocated for Service Areas, which is about 12 % of total floor space. The components assigned as Service Areas are important for any library, but need not to be very spacious as the occupancy of library users in these areas is minimal. Users come to those places to get specific services, like borrowing of books, getting photocopies, inquiries, beverages and mobile phone usage etc.

6. Conclusion

This study provides a framework on library space planning which can be used as a practical starting point for librarians who plan to build new libraries or refurbish existing libraries. Libraries today can act as a transformative agent as universities that are focusing to promote the social dimension of learning. Renovation of USJP library according to the framework on space planning has brought together library resources and technologies while providing formal and informal learning spaces for students. Library will continue to provide better services to customers by making most of its space as Learning Zones and Interactive Spots by limiting the space for Knowledge Reservoirs. Space planning in university libraries can be as individual as snowflake. From the exterior no two libraries look similar in shape and size. Hence there are no hard and fast rules in planning library spaces. Therefore, it is expected that USJP framework may assist other librarians who plan for new buildings or re-designing their libraries.

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