

University Library Spaces: How Ancient Indian Wisdom is Reflected in Modern Library Design

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1.1 Abstract

Library spaces are redefining themselves. Learning is becoming ubiquitous. With the rise of the internet and artificial intelligence learning opportunities are continually breaking the barriers of access, equity and language. Yet, the physical library continues to play a significant role in a student's life while at University. This paper draws a comparison of how the ancient Indian wisdom reflected in the Indian scriptures is continuously reflected in Modern Library Design – affectively blending technology, aesthetics, learning, human interaction and nature. The paper also draws various parallels between learning spaces, library design and library spaces.

1.2 Keywords

University Library, Library Spaces, Yoga, Library Design, Nalanda University,

Introduction

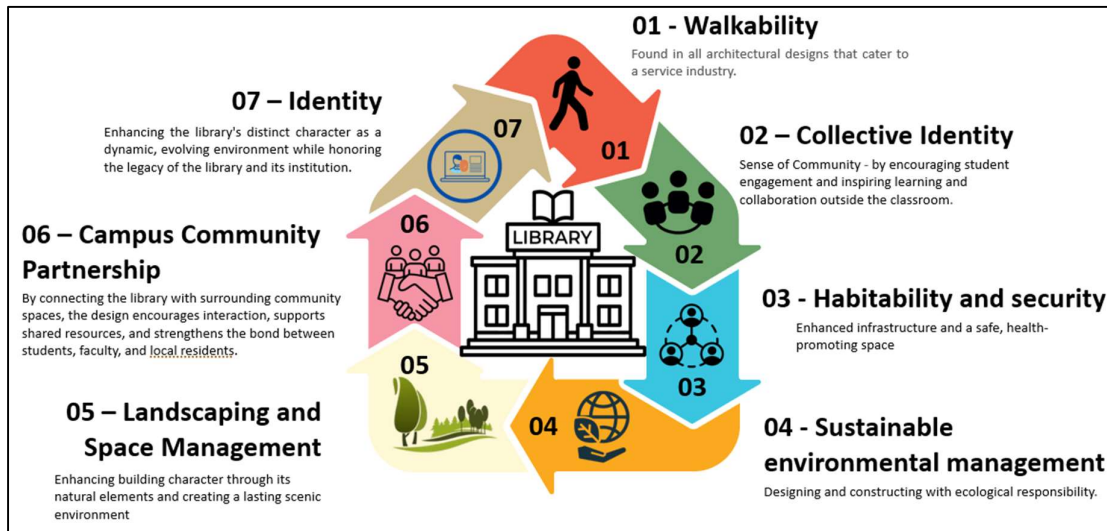
University libraries worldwide are transforming their physical spaces in response to two major factors: the shift from print to electronic resources and changes in educational practices that emphasize collaborative learning and group projects. These developments necessitate redesigning library spaces to align with new learning styles and better meet the evolving needs of users. (Gikunju et.al. ,2024). Beard and Dale (2010) examine how the design of library buildings supports a diverse and evolving array of academic literacies and emerging educational approaches. Using the experience at Bournemouth University, where the new library building, The Sir Michael Cobham Library, enabled the creation of learning spaces that are flexible and responsive to the changing needs of users. This research concluded that as learning environments become more innovative and pedagogies continue to evolve, varying levels of academic literacy are needed to enable students to succeed in both physical and digital settings.

1.3 Learning Spaces and Library Design

Library designs interweave the principles of human interaction, user engagement, service design, aesthetic appeal, functionality and information architecture within itself. A well-designed library augments the core mission of libraries – both for schools and universities alike. Today library spaces need to provide an inclusive environment that encourages learning, collaboration, creativity, keeping in mind the educational demands and changing landscapes of learning.

Hajrasouliha (2017) identified seven elements that shape campus plan and design. These seven elements hold true for any well-designed library. These elements are explained in the Figure 1 and have been mapped to the characteristics of a well-designed library.

Figure 1: Key elements identified by Hajrasouliha (2017) in campus plans



Coung (2024) highlights that effective library design—shaped by physical layout, institutional policies, educational goals, student involvement, and technological integration—is essential for transforming high school libraries into dynamic learning spaces that improve educational outcomes. Bailin (2011) highlights the evolving role of academic libraries, particularly emphasizing the importance of flexible and adaptable learning spaces that cater to diverse educational needs.

Peng, Wei, Gong, and Jia (2022) identified seven primary design elements of university library spaces that may influence users' learning experiences. They conducted a factor analysis using the following seven parameters: physical environment self-control, physical environment comfort, interior space aesthetics, interior acoustic environment comfort, interior space use comfort, interior space use flexibility, and comprehensive guidance and equipment. The results indicated that physical environment comfort and interior acoustic environment comfort were positively correlated with the frequency and duration of library visits. Consequently, in the process of reengineering university library spaces, two key recommendations are made: Enhancing factors such as lighting, temperature control, and ergonomic furniture to create a more comfortable space for users and implementing soundproofing measures and optimizing acoustics to reduce noise levels and distractions.

Through a comprehensive study, Phukubje and Ngoepe (2016) examined the convenience and accessibility of library services for students with disabilities. The research systematically identified barriers that impede these students from fully utilizing library resources and services. The study presented detailed recommendations aimed at assisting libraries enhance inclusivity, promote equitable access, and ensure that students with disabilities can benefit from library services to the same extent as their peers.

Attention plays a prominent role in learning (Seger & Cincotta, 2006, Collins et al, 2017; van de Vijver & Ligneul, 2020). Studies like that of Kaplan and Berman (2010) shed light on how the urban lifestyles is affecting the attention span of students and leading to attention fatigue and thus learning. The Attention Restoration Theory draws focus on nature and how experience with nature can enhance our ability to concentrate and focus on the tasks at hand (Ohly et.al, 2016). Given that natural environments can enhance our attention, increase positive emotions, reduce the impact of stress and even boost problem-solving skills, there is a strong argument for incorporating natural settings into workplaces, colleges and universities. Learning spaces therefore can significantly affect learning by influencing cognitive function and concentration. Incorporating natural environments into educational settings reduces attention fatigue and enhances focus. Elements like spatial layout, comfort, and visual aesthetics reduce distractions and improve user experience. This leads to better engagement, intrinsic motivation, better collaboration, and active learning, all factors helping students succeed.

Learning Spaces in University Libraries: Table 1 describes some of the common learning spaces seen in

University Libraries. The corresponding images are AI Generated and only representative of the concept.

- **Repository of Books, Journals:** All Libraries have spaces for books, journals, PhD research thesis, general reading books.



- **Amphitheatres** within a University library serves as a premier venue for community gatherings, literary events, and educational programs, enhancing the cultural and intellectual fabric of the society.



- **Experiential Learning Centres** By prioritizing interactive, hands-on learning, this library space helps students in collaborative tasks that deepen engagement with the subject matter, enhance critical thinking and creativity, and transform the way students interact with and internalize knowledge. York, et.al. (2010) discuss how experiential learning impacts the relevance of academic libraries to their universities.



- **Collaborative Working Space:** These areas facilitate knowledge exchange and promote workforce development, making libraries more relevant and versatile in today's society. Allison, et.al(2019) examine the immediate impact of opening a learning commons in an academic/research library at one institution, focusing on changes in circulation, document delivery, interlibrary loan requests for returnable items, and both on- and off-campus database accesses.



- **Makerspace:** A makerspace within a library is a dedicated area where users have the opportunity to develop both digital and physical creations. Makerspaces are often associated with STEM knowledge and activities (Loertscher et al., 2012).



1.4 Significance of Physical Libraries in the Digital Era

Priestner and Borg (2024) correctly identify the challenges faced by libraries across universities. They suggest libraries world over are struggling to find the right balance between print and electronic media; seamlessly serve both in-person and remote users; embrace technology and research data, and while providing effective teaching and learning environment. Academic libraries have evolved from being only a physical building to a digital environment of electronic services accessible via computers and networked servers. Today, physical libraries not just merely house books; they serve as multifaceted institutions that adapt to the evolving needs of society. Box1 discusses the advantages of Physical libraries in a Digital World.

Box 1: Role of Physical Libraries in a Digital World

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- **Community Hubs and Social Spaces:** Physical libraries host events, workshops, and seminars that strengthen community engagement and lifelong learning. These spaces encourage collaboration and social interaction aiding in the personal and professional development of students.
- **Bridging the Digital Divide:** Since, a significant portion of the population still lacks reliable access to the internet and latest digital devices. Libraries provide access to technologies like AR/VR goggles 3D Printers etc ensuring equal opportunities for information access (Cao, et.al. ,2020)
- **Access to Physical and Unique Resources:** Libraries house rare books, manuscripts, archives, and special collections that are invaluable for research and preserving cultural heritage.
- **Enhancing Learning and Concentration:** Libraries are designed to support focus and learning. Quiet zones, study areas, and reading rooms offer spaces free from the distractions. The ambiance of a library can enhance concentration, promote deep thinking, and improve information retention.
- **Professional Assistance and Information Literacy:** Librarians are trained professionals who assist students in navigating vast amounts of information. They teach information literacy skills, helping individuals critically evaluate sources and effectively conduct research.
- **Supporting Diverse Learning Styles:** Physical libraries cater to various learning preferences. Tactile learners benefit from handling books, writing notes, and engaging with physical resources.
- **Multifunctional Spaces for Innovation:** Modern libraries often include makerspaces, multimedia rooms, and collaborative work areas equipped with technology and tools that support innovation and creativity. (Connolly, et.al. ,2009)
- **Cultural and Historical Preservation:** Libraries collect and preserve documents, photographs, and artifacts that reflect the heritage of the community.
- **Promoting Literacy and Education:** Libraries support literacy initiatives by providing access to books and educational programs for all age groups.
- **Inclusivity and Accessibility:** Physical libraries are designed to be inclusive spaces that accommodate individuals with disabilities.
- **Encouraging Serendipity:** Browsing physical collections allows for accidental discoveries that might not occur in digital searches.

1.8 Can the Metaphysical Ancient Indian Wisdom Substantiate the Physical Design of the University Library?

Ancient Indian wisdom and scriptures is replete with the advice that right knowledge leads to salvation. Box 2 shares an excerpt from Bhagwat Gita, a scripture of the Hindu religion. The verse (one of many) depicts how practice leads to wisdom.

न हि ज्ञानेन सदृशं पवित्रमिह विद्यते ।
तत्स्वयं योगसंसिद्धः कालेनात्मनि विन्दति ॥ ३८ ॥
na hi jñānena sadṛśaṁ pavitramiha vidyate
tatsvayaṁ yogasansiddhaḥ kālenātmani vindati
Bhagwat Gita (Chapter 4, Verse 38) There is nothing in this world as purifying as
divine knowledge. A person who attains purity of mind through dedicated
practice of Yoga will, in time, receive this wisdom within their heart.

Box 2: Bhagwat Gita – Chapter 4, Verse 38

Siddi, in the Indian scriptures is the ability achieved through devoted learning, practice and self-study (abhyaas). Ashta siddhi are the eight divine knowledge that helps individuals attain diving wisdom. Table 2 provides a description of each siddhi and maps it to its presence in a University Library environment.

Asthasiddhi - Ancient Indian Wisdom	Meaning	Mapped into the Physical Library ecosystem
Aṇimā अणिमा	The ability to shrink one's body to the size of an atom.	Self-Study space
Mahimā महिमा	The power to expand one's body to an immense size.	Library cum Learning Resource center space that helps our personal growth and ensures institutional growth
Garimā गरिमा	The capacity to make one's body extremely heavy/ glorify oneself	Book Museum / Archives/Toys/ Educational Kits museum/ 3 D Printers
Laghimā लघिमा	The ability to make one's body weightless.	Digital Library resources that carry a repository in thumb drive
Prāpti प्राप्ति	The power to reach or access any place without any obstacles.	Interlibrary & Global Library access points – Access to e-journals
Prākāmya प्राकाम्य	The ability to fulfill all desires.	Leisure reading and browsing spaces
Īśitva ईशित्वः	The power to have absolute control over all beings and elements.	Information Kiosks
Vaśitva वशित्व	The capacity to control the will of all beings	World class library administration

Building Design - Inspired by Yoga – Union of Body Mind and Soul

Metaphysics – a branch of philosophy, inspires us to look beyond what is perceived through the physical. When metaphysics meets design, we often hear the concepts of function vs form, functionality, balance, purpose, harmony inbuilt within all spaces. Universal design is "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design" by The Center for Universal Design at North Carolina State University (Connell et al., 1997).

Inspired by the principles of yoga, building designs can aim to create a sense of balance and harmony. Like yoga brings about seamless flow of energy within the body, building designs can facilitate smooth flow and movement within spaces, encouraging ease of movement and accessibility. A building design inspired by yoga promotes physical, mental, and spiritual well-being by creating balanced, harmonious spaces. Utilizing natural materials like wood, stone, and bamboo, along with green spaces and natural light, enhances the connection to nature. Minimalist aesthetics reduce clutter, creating serenity. Flexible spaces support multiple uses, embodying adaptability.

Ergonomic design ensures comfort and encourages physical activity. Renewable energy sources and sustainable materials scaffolded with yogic principles, result in holistic and sustainable designs. Like when we draw inspiration from Patanjali's AshtanYoga अष्टाङ्ग योग, we see the design promotes physical, mental, and spiritual well-being by creating balanced, harmonious spaces. Figure 2 maps AshtangYoga to design decisions in present day library architecture.

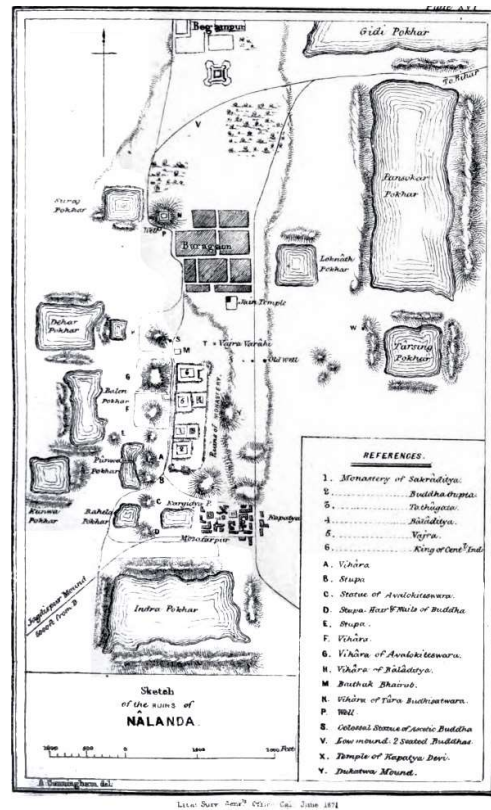


Figure 2: AshtangYoga Principles evidenced in design decisions in present day library architecture.

1.9 Bridging the Metaphysical and Physical for the Holistic Learning Experience in a University: Case of Nalanda University

A map of Nalanda and its environs from Alexander Cunningham's 1861–62 Archaeological Survey of India report which shows many ponds (pokhar) around the Mahavihara. Ponds or water bodies have calming properties. The colour blue is often associated with openness and freedom. It is posited to activate focus that motivates people to achieve positive outcomes, eventually enhancing their performance on creative tasks (Chang, 2018).

A map of Nalanda from Alexander Cunningham's 1861–62 ASI



The Nalanda University architecture includes stupas, shrines, viharas (residential and educational buildings). Mahavihara, following the vihara architecture, often found in Buddhist monasteries, the buildings had a central courtyard along with space for dwelling (akin to the central libraries and reading cubicles often found in all libraries) Díaz-Martínez et al. (2023) researched the neurodevelopmental advantages associated with the presence and exposure of blue and green spaces (water bodies and green fields/parks) on cognitive and academic performance of students. They distilled the findings of twenty-eight studies and concluded that when natural elements are integrated into the school environment - even through passive exposure, there is evidence of healthier developmental outcomes.

1.10 Conclusion

Design (any and all – emphasis by authors) must serve practical functions while also engaging with metaphysical questions about its role in society (Potter, 2020). Libraries serve as de facto learning hubs and training centres for teachers, providing essential resources and support for professional development. They offer access to a vast collection of educational materials, research journals, and the latest pedagogical studies, helping educators stay updated with current trends and best practices. By creating collaborative environments, libraries encourage teachers to share knowledge, exchange ideas, and develop innovative teaching strategies. This makes them indispensable in promoting continuous learning and improvement among educators, and one of the best training venues any educational institution can have. A university library assists in humanity's timeless quest for knowledge—serving both as a practical resource and a space for intellectual and spiritual enrichment, echoing deeply with the ancient traditions that valued holistic learning.

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