

Space Optimization and Management for Architectural Institutions: Capacity Development Perspective

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Abstract

Capacity development (CD) is the process by which organizations strengthen their abilities to perform core functions, deal with challenges of today, plan and make efficient use of resources to achieve their objectives in a sustainable manner. One of the significant principles of CD movement is to build on what already exists; henceforth more attention needs to be drawn to the education sector, where the higher education institutions face the challenge of providing the youths with latest skills, technology, and modern physical learning environments within the limited resources. With 'aging and expanding' facilities, there is an ardent need for efficient space management that optimizes the use of existing physical resources and adapts to new approaches to teaching and learning. The aim of this research paper is to analyze the concept of capacity development in architectural institutions with respect to judicious use of its physical resources. For this study, space occupancy and frequency percentage of academic areas of two reputed architectural colleges of Punjab are calculated to evaluate their utilization rate. Furthermore, semi structured interviews with the faculty and students at these colleges are also conducted. Towards the end, the paper recommends few strategies for space optimization in architectural colleges and highlights those physical resources are an asset, which if managed efficiently; the institute can achieve its development goals in a sustainable manner.

Keywords: Capacity development, space management, physical resources, architectural institutes, space optimization.

INTRODUCTION

"Capacity development is the process of strengthening the abilities of individuals, organizations and institutions and societies, to make efficient and effective use of resources to achieve their goals on a sustainable basis." (Capacity Development for Education for All: Putting Policy into Practice, International Forum Summary of Outcomes, 2007)

"Capacity Development: the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time." (UNDP, 2008)

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An organization or an institution's overall capacity depends upon its resources (human, physical, financial, and technical) and its management [1]. The availability of resources is crucial for the functioning of an organization, but

not effectual for achieving its development goals, if used ineptly. Capacities were always existent, even in the most difficult of settings; they basically needed the space to grow and become efficient [2]. Capacity development evades the idea of building or starting anew; it is more a case of developing from existing levels of capacity. What is needed is a more comprehensive and sustained approach, that assists the organization in achieving optimal effectiveness [3]. Capacity development for this paper is defined as the process by which organizations strengthen their abilities to perform core functions, deal with challenges of today, plan and make efficient use of resources to achieve their objectives in a sustainable manner.

Capacity Development for Education System

When there seems to be international consensus that capacity building is key to promoting sustainable development [4], more attention needs to be drawn to education sector in India, where resources are limited, and the development goals are high. In today's rapidly changing world, the higher education institutions face the challenge of providing the youth with advanced skills and modern physical learning environments that are essential to prepare them to compete in the 21st century. A multitude of factors like growing student demographics, changing pedagogy, modern teaching tools, insufficient financial resources, digital integration and advent of technology have influenced these learning environments [2].

While often considered to be of secondary importance, adequate management of physical resources is identified as key area for capacity development in many institutions, because they are essential to the effective delivery of program objectives. Space, one of the prime assets of any institution, on average represents around 20% of the costs of operating an institution [5]. The availability of appropriate space is essential to support the teaching, research, community and learning needs of students and faculty. With 'aging and expanding' facilities, optimization of space management has become a top priority at higher education institutions [6]. Colleges and universities looking to reduce carbon footprints want to avoid new construction yet still provide top educational experiences. Furthermore, financial constraints on state governments means limited or reduced funding for public institutions, so use of existing space becomes more important. Hence need of the hour is to take measures for efficient space management that optimizes the use of existing physical resources, reduces wastage, controls expenditure cost and adapts to new approaches to teaching and learning.

Research Objective

This research primarily focuses on institutes imparting architectural education in India. Architecture is the art that provide us the physical environment we live in. It covers the functional needs of a building, providing spaces and environment that is practical, efficient comfortable and effectively used. Hence it becomes imperative that planning of Architectural colleges should provide a prototype or model for other higher educational institutions in terms of space efficiency, optimization, and effectiveness.

Aim of the Research is to analyze the concept of capacity development in architectural colleges with respect to efficient and effective use of its physical resources and identify goals for its sustainable development. Objective of the study is to examine if the physical infrastructure is synchronized with changing pedagogy and modern learning needs of students. Furthermore, to understand how efficiently each and every space is being used, identify opportunities for improvement and make recommendations for the future

Methodology

The research is primarily field based which involves survey of reputed architecture colleges in Punjab like Chandigarh College of Architecture (CCA), Lovely School of Architecture and Design (LSAD) and Architecture department of Guru Nanak Dev University Amritsar, analyzing their existing physical resources with respect to its level of use and efficacy. Semi structured and open

interviews were conducted with the faculty and students at these colleges. Architecture department of GNDU, Amritsar was taken as the prime case study and was specifically visited for one whole week to record the actual space usage per week of its academic areas and eventually calculate their occupancy, frequency, and utilization rate.

LITERATURE REVIEW

An Overview of Architectural Education in India

Architectural education in India is one hundred years old. But the foundations for a new, relevant architecture of the new India were laid with the foundation of CEPT as a school of architecture in 1962 [7]. At the time of independence, there were only two architecture schools in India, the first being Sir J.J. School of Architecture at Mumbai to introduce a structured course in architecture and the other being a night school at Delhi. After two decades also, there were only nine schools of architecture. However, today, there are 423 in total (Schools offering Architectural Education in India, COA) and this number is set to increase further in the coming years. The Council of Architecture (COA) was established in the early seventies as a statutory body to monitor and regulate the standards of architectural education, a responsibility it shares with AICTE. Both the statutory bodies have laid down certain norms of minimum facilities, that each school must follow.

Changing Trends in Architecture

In the last two decades the world has witnessed rapid changes, both in terms of the needs of the society and the technology. Also, the architecture profession is in limelight now, as made apparent from the soaring number of Architecture Institutes in India. Unfortunately, in many cases, architectural education suffers from the long-lasting gap between the theoretical knowledge provided to students and the practical capabilities students need to develop for their future professional practice [7]. The skills that were required in the past are different from those that are needed in contemporary practice. With the development of new computer technology inside and outside the Architects' offices, it is the time that even our Architectural Education sees some necessary changes. Since its inception in the 19th century, the design studio has remained at the core of architectural design education. Despite tremendous changes in architectural practice, traditional studio-based pedagogy has remained fundamentally unchanged in most of the institutes in India [8]. New specialized knowledge, increased use of computers and information technology in design education and practice and increase in student intake necessitate the physical learning environment to constantly change. The introduction of the paperless studios, the e-studio, and the virtual design studio further provide an additional scope of pedagogical models that encourages learning-by-digital-making. These challenges need to be addressed, if meaningful and desired change in the learners is to be achieved.

Space Utilization and Optimization

Space management is the control and supervision of physical spaces in an institute [6]. Space utilization, a measure of effective space usage, is a key determinant of good space management practice. A room may be poorly utilized due to its physical attributes: its condition, an oversupply of similar facilities, insufficient capacity, too much capacity, wrong location, changing teaching methods causing obsolescence [9]. Aside from the physical nature of the space, other reasons for poor utilization as mentioned by Bel [10] include:

- *Flexibility:* As students enroll in a greater number of subject combinations the difficulty of timetabling increases and may lead to decreased utilization.
- *Part-time staff:* Unavailability of Part-Time staff to deliver programs at all times across the institution's operating hours reduces timetabling freedom and may lead to lower utilization rates.
- *Room Ownership:* Granting control of rooms to groups within an institution reduces the accessibility of other groups to those rooms, and thus reduces the flexibility of timetabling.
- *Timetabling:* Unavailability of a particular resource, such as specialized teaching staff or the student group themselves, may make optimal use of a physical facility impossible.

- *Teaching patterns*: Teaching patterns such as off site and onsite visits may have an impact on overall utilization.
- *Specialist space*: Some highly specialized facilities (labs, museum etc.) may not achieve high utilization rates, but may be required in the successful delivery of an academic program.

Abdullah, Shahabudin et al. (2012) [8] have stated the following benefits of ‘Utilization studies’:

1. *To analyze how an institution is using its spaces*: It helps to understand what spaces are occupied, who are the primary occupants of each room and how space is being used.
2. *To improve space usage*: It identifies underutilized spaces and help to inform decisions about the type and scale of facilities needed. It determines and improves interdepartmental efficiency by assessing the placement/proximity of resources and facilities that can be shared. It also examines if the space work better with a different setup.
3. *To plan for future space usage*: It helps to predict future space needs and what proposals can be worked out for the same

Room Audits and Audit Data

Conducting room audits is an integral part of measuring Space Utilization Rates. Room Audit data gives an indication of the actual use of an institution’s facilities (Space Management, 2015). It involves counting the number of students using the various teaching facilities within an institute generally undertaken over all the operating hours for the campus for one week each room is used and Room Occupancy (total number of students using a particular room of defined capacity). Utilization Rate combines Room Occupancy and Room Frequency data to give an indication of how the room is being used [8]. A building can be said to be ‘designed for space efficiency’ when it provides the minimum necessary space for the desired functions to be properly accommodated, with minimum ‘waste’ between net internal area and gross internal area [6]. Space optimization means reclaiming the wasted space and retooling it to better meet the teaching learning needs of students. It basically helps to optimize the usage and make the most out of existing spaces. Merging facilities and dumping unused space can result in lower operation and maintenance costs [10]. Well-designed buildings and spaces have positive influence on the professional productivity and educational attainment. Space optimization is therefore a crucial part of an asset management strategy for any institution ensuring resource efficiency, energy efficiency and reducing costs and waste.

CASE STUDY–DEPARTMENT OF ARCHITECTURE, GNDU, AMRITSAR

Architecture Department is Affiliated to Guru Nanak Dev University and Approved by UGC. The department established in 1986, was the first institute in Punjab to start the five years integrated Bachelor of Architecture Degree course. It is the oldest and premier institute in the region. The department also offers two year post graduation courses like M.Arch. in Urban Design and M.Tech. in Construction Technology and Management (started from session 2021–2022). The department was initially placed above the main Library building of the University but with effect from the academic session 2007–08, it started functioning from a new 4 storeyed building in the same campus, designed exclusively for Architecture and Planning. Architecture department covers 2 and a half floors, with an overall floor area of 4441.62 sq.m, whereas Guru Ram Das School of Planning is housed on the upper floors. The physical spaces are arranged around a central courtyard. As per the official records of the department, the intake of ten students per batch started from first batch (1986–91) which was subsequently raised to 40 students in 1999. Total sanctioned intake of the institute was further increased to 80 seats from 2009 till date. At present, fifteen faculty members are regular and six are appointed on contract basis whereas six professionals are contributing as visiting faculty and the rest twelve comprise the technical or administrative staff.

Physical Infrastructure of the College

The college has eight studios cum classrooms, 2 lecture halls (with seating capacity of 60 students) and an AV room (of capacity 80). There is a well-equipped computer lab with 54 workstations and a

small conference/discussion hall adjacent to this lab. The department has a resource centre which houses samples of building materials, structural system models and is clubbed with thesis library. The college has a carpentry workshop which can accommodate a batch of 40 students. Other ancillary areas include Art and Graphics lab which displays artworks, 3D sculptures, clay modeling and academic works done by students, a small Surveying lab and a Building and Material Testing lab. It also houses faculty cabins, an accounts office, and head of the department office. The built-up areas in the department are as per COA norms but it lacks few spaces recommended by this statutory body like common areas for boys and girls, staff lounge, a multipurpose hall, examination room and has lesser no. of faculty cabins.

Analysis of Occupancy/Frequency Percentages and Utilization Rate of Physical Resources

The space utilization rates shown in the Table 1 are indicative only and are based on a typical overall week of 40 hours in the odd semesters (duration of each semester is generally 4 and a half month). The rates calculated are intended to be broad/generic descriptors.

Table 1. Space utilization rates.

Floor	Room number	Room type	Room areas	Sections using room	Room capacity	Actual occupancy	Occupancy %	Max. hours availability	Total hours occupied	Frequency %	Utilization rate
	119, 120	Studio cum Classes	1904	B.Arch. 1st year	40	35	44.8	43	22	51.2	22.93
	122, 123			B.Arch. 1st year	40	35	44.8	43	22	51.2	22.93
	121	A.V. Room/ Seminar Hall	790	B.Arch. 1st/2nd/3rd year/M.Arch.	80	70	43.8	40	20	50.0	21.9
	114	Audio Visual Room	1180	B.Arch. 2nd/3rd year	60	70	58.333 33333	40	20	50	29.16
	125	Computer Lab	1450	B.Arch. 2nd year	80	72	4.5	40	2	5	0.22
	111	Building Material	790		3	0.00	0.0	40	0	0.0	0
1st floor	201	Arts and Graphics Lab	1090		40	0	0.0	40	0	0.0	0
	203	Examination Room	120	Staff	2	0	0.0	40	0	0.0	0
	217–218	Museum/ Thesis Library	790	Final year	15	3	2.5	40	5	12.5	0.3125
	220–221	Surveying Lab	240	B.Arch. 1st	5	0	0.0	40	0	0.0	0
	216	A.V. Room/ Seminar Hall	790	B.Arch. 2nd/ 3rd year	60	80	50.0	40	15	37.5	18.75
	224	Studio cum Classes	1904	B.Arch. 2nd year	40	34	51.0	40	24	60.0	30.6
	226			B.Arch. 2nd year	40	34	51.0	40	24	60.0	30.6
	227		1680	B.Arch. 3rd year	40	35	48.1	40	22	55.0	26.45
	225	Workshop	790	B.Arch. 1st Year	35	40	22.9	40	8	20.0	4.58
2nd floor	318	Studio cum Classes	1680	B.Arch. 3rd year	40	34	46.8	40	22	55.0	25.74
	319		1180	M.Arch. 1st sem	20	5	8.1	40	13	32.5	2.63
	320		1904	B.Arch. 5th year	40	34	34.0	40	16	40.0	13.6
	321		1904	B.Arch. 5th year	40	34	34.0	40	16	40.0	13.6
											13.89486842
					Block utilization rate	13.89					

Figures 1–3 illustrate the occupancy percentage, frequency percentage and utilization rate chart of the Architecture department GNDU.

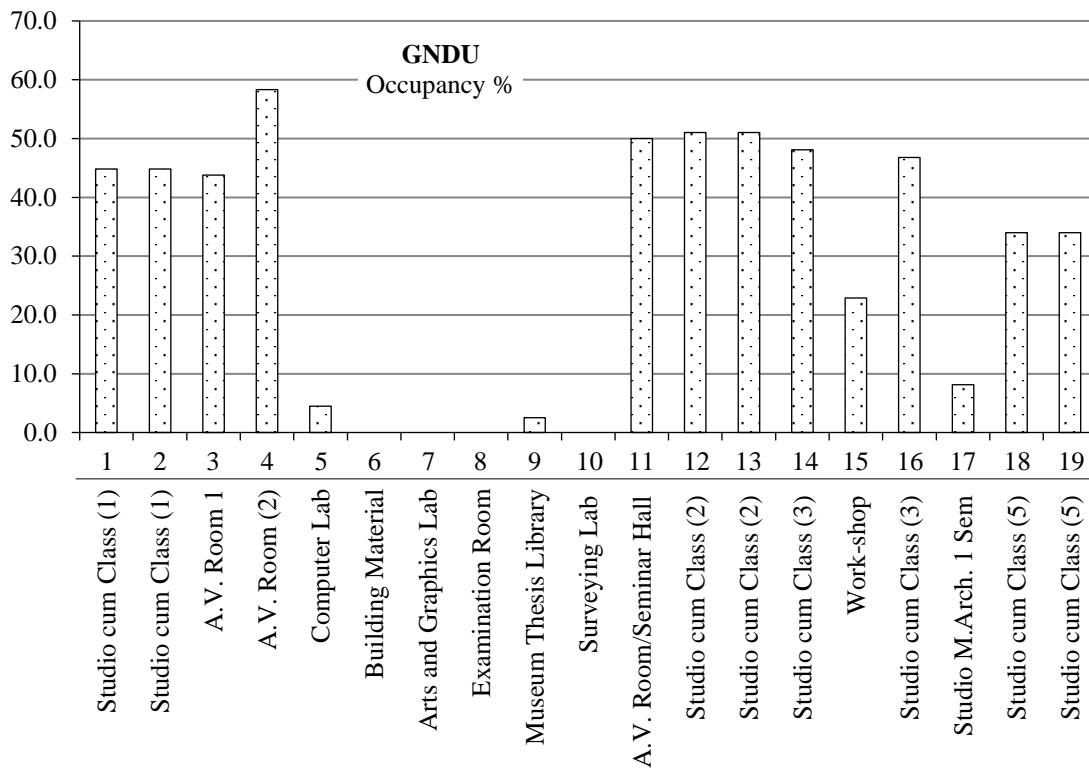


Figure 1. Occupancy percentage chart of arch. dept. GNDU.

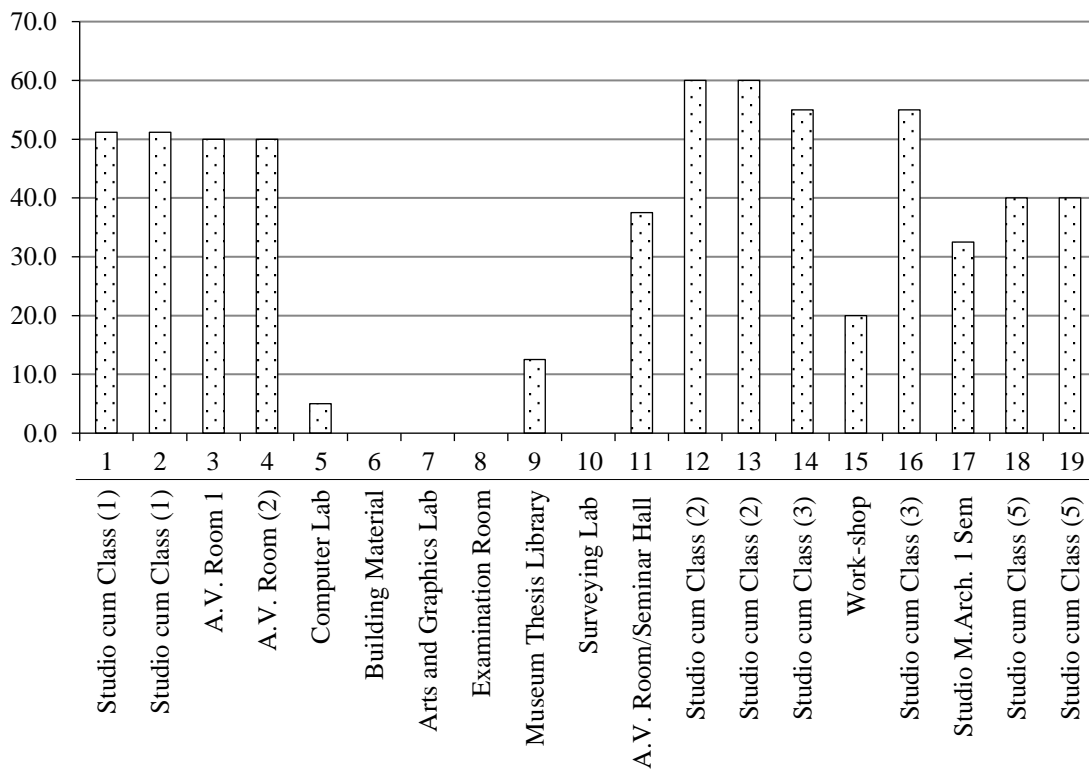


Figure 2. Frequency percentage chart of arch. dept. GNDU.

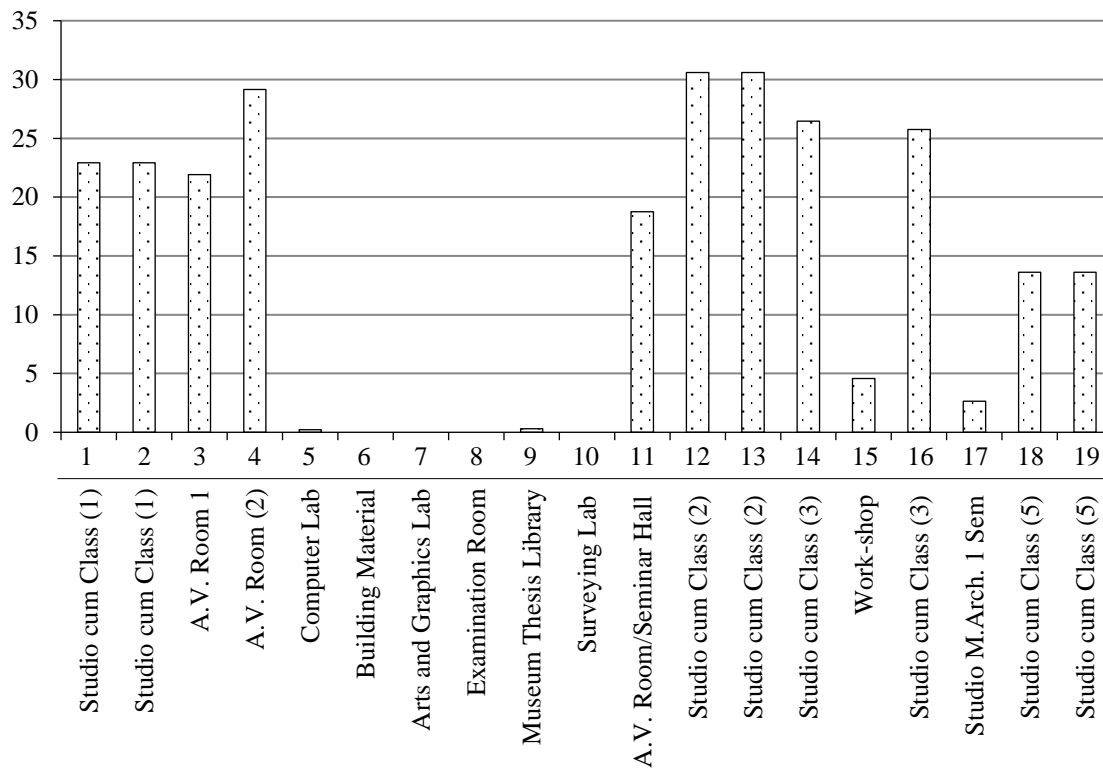


Figure 3. Utilization rate chart of arch. dept. GNDU.

Space Usage Analysis

As evident from the occupancy/frequency percentages and utilization rate, the building is not in optimum use. Only 15 to 20% of the academic areas are being effectively used and areas like workshop, building material testing lab, museum cum thesis library, surveying lab (serving at present as) art and graphics lab and computer lab remain vacant in most part of the year. As per the curriculum, surveying lab is utilized for 2 hours per week and that too in one semester only (out of 10 academic semesters). Carpentry Workshop classes are held in second semester only where 3 lectures per week are dedicated to a batch of 40 students (i.e. total 6 hours per week as the intake in each year is of 80 students); rest of the week it is rarely utilized and that too by few students for model making (once in few months). Computer labs have been calculated as having low frequency of use rate as only 2 hours have been dedicated for computer application subject once a week in 4th semester only. Material testing lab remains locked almost the whole year as no such practical's is held during the semesters. The occupancy/frequency percentage rate of Studio classes range between 50 to 60%. Junior batches (1st and 2nd year) use studios for more hours as they have more practical subjects (Design, building construction, art and graphics and architectural drawing). Few theory classes (like structure design) are also held in the studios. The frequency of use rate of senior studios is comparatively less as all their theory classes are conducted in audio visual/seminar rooms and they have only 2 studio subjects in the curriculum (Design and BC). Theory classes are held in AV/seminar rooms which are total 3 in number. The peak hour when these halls are utilized is the morning 9 to 10 am. In spite of just 4 active batches in the college (one batch is either on training or undergoing thesis) the department still demands for more AV rooms since as per the schedule, all the semesters have simultaneous theory lectures from 9 to 10 am in the morning. Moreover 2 of these halls were planned initially for an intake of 40 students only and there is only one seminar hall (newly planned) which can accommodate 80 students. There is no departmental library, only thesis reference section is there conjoined with the museum, hardly visited by students. The museum displays models and documentation work of students along with display of building materials. But its size is too cramped for students to visit in batches. Art and graphics lab is a redundant space of the department where no

activity takes place and is utilized as the M.Arch. 2nd year studio. One lecture hall and a studio are dedicated to post graduation courses.

Analysis from Survey and Interviews Conducted in the Department

The provision of computer lab was a good recommendation by COA around 15 years back but for the last few years the need seems to be diminishing as students prefer to work on their personal laptops. Consequently, this lab, which is a vital physical resource, lies vacant most of the time. Head of the Department opined that the lab could be shared with interdisciplinary departments of the university (e.g., planning department functioning on the above floors). Few faculty members suggested that the lab should be converted into 4th/final year studio as most of their assignments/projects are computer based. They further advocated that technical or software training classes should be organized at weekends or during vacations both for students and faculty which would not only upgrade their skill but would also account for effective use of this key resource.

Professor S.S. Behl, Dean Academics stated that the Resource Centre at present was a redundant space as most of the information and latest trends in the field are available online. Museum instead of being static should be converted into a dynamic exhibition space where works of students, local architects, latest building materials/samples should be frequently displayed. Workshops should be used for skill development programs. He also mentioned that the senior classes' studios were oversized, the area should be reduced, and the working environment needs to be modernized. Instead of large drawing boards, counters for laptops were required. Workshop should be multifunctional and adjoining the Construction yard. Curriculum of architectural institutes should well integrate its use in few courses to provide practical exposure to students

Head of the department advocated that the allied disciplines of Architecture (interior design degree/certificate course, architecture diploma, PG diploma courses etc) should be initiated for effective use of existing resources and infrastructure (computer lab, workshop, and library). The studios of 4th/5th year should be reduced and the extracted spaces to be used for these courses. Surveying lab being a dead (redundant) space, should be shared with or moved to civil department for its effective use or may otherwise be utilized for consultancy purposes. Same was advised for the material testing lab too. Most of the faculty members recommended that for all batches the desks should be multifunctional, movable, and foldable such that it could serve as drawing board as well as accommodate laptops and storage needs (sheets, stationary equipments etc.) of the students. Furthermore, when required, these tables could be joined together in the centre of the room to form a large common working area for model making or other activities to gain hands on experience. One of the professors remarked that space sharing, spatial overlapping (more than 1 activity in a space), organizing vocational courses or faculty development programs or software training sessions for students and faculty during weekends and vacations could result in optimum usage of existing resources and generate revenue too. There should be flexibility in Timetable so that theory classes could be staggered thereby optimizing the use of lecture halls. Part time lecturers in addition highlighted that the individual cabins for permanent faculty were spacious and adequate in no. but the department lacks a spacious and fully equipped hall with cubicles or workstations for part time and Adhoc lecturers.

Majority of students commented that their studios cum classrooms, workshops and Building material testing need to be modernized and digitalized. They said that they prefer working at home since the desks in the studios are not comfortable for working on laptops. They long for state-of-the-art library, more virtual spaces for better learning and a common/multipurpose room for interaction, discussions, social activities, NASA preparation etc. They believed the pedagogy and teaching tools were outdated and need to be adapted to current trend in architectural practice. Final year students revealed that the department lacked spaces for practical exposure and experimentation which is conducive to effective learning since architecture as a profession is more field based and industry oriented.

Analysis from Interviews Conducted in other Architecture Colleges of Punjab

Open interviews were conducted with the Principal and Head of the department of other two reputed Architectural colleges of Punjab (CCA and LSAD) and separate questionnaires were formulated for conducting semi structured interviews with faculty members and students to investigate their perceptions and needs regarding physical infrastructure of their respective institute. Dr. Sangeeta Bagga, Principal of Chandigarh College of Architecture stated “Present space allocation in our college is underutilized. Multiplicity of the same space in time over the day is recommended. Spaces should be well articulated with different activities, it is not the walls that define the space, it is the activity that should delineate the space. Carpentry workshops should be clubbed with other specialized fields like glass, metal. Studios are spacious enough to accommodate teaching, drafting tables which should be ideally in the centre, with model making in the corner and computer peripherals installed to make a comprehensive studio environment. For effective use of existing resources, we can conduct short term and part time courses; inter college programs, FDP’s, software training programs for students and faculty, conferences, workshops etc. We started our master’s Program recently and are utilizing our prevailing physical infrastructure for effectual space utilization.”

Ar. Narinderjit Kaur, Ex-Deputy Dean and Head of Lovely School of Architecture and Design remarked “Present physical space allocation in our college is underutilized. Our facilities and areas are in excess as per COA norms which need to be put to efficient use. LSAD course curriculum foster 65% of student’s time in studios. Studios are spacious and have ample space to conduct theory lectures. Physical assets like library, workshops and labs should be made an integral part of the curriculum for their regular use. For effective use of existing physical infrastructure, mutual sharing of resources like workshops, library and labs is encouraged between different courses running in our department.” She further added “the concept of resource sharing and multi-use of spaces is important in today’s institutes. Evening classes shift system as recommended by AICTE can be applied in architecture colleges provided that separate faculty is appointed for that. Flexibility in timetable and staggering of lectures for effective use of lecture halls is dependent on the availability of faculty.” She emphasized that museums, workshops and art and graphics lab should be used regularly for exhibitions and practical works. Common room for students, a staff lounge, and audio-visual halls seminar room with panels for conducting vivas and displaying students work are few essential spaces required in our department. She further suggested that with optimum space utilization, existing underutilized spaces can be adapted to meet the new requirements of the department.

Almost 80% of the respondents from both the institutes are not fully satisfied with the present pedagogy employed in architecture education. They feel that there is immense gap between practice and teaching which needs to be bridged through innovative and modern teaching methods. They stated that students should be exposed more towards practical field, to current trends, modern materials, technology, and upcoming projects. Emphasis should be on discussions, experimentation, practical learning, workshops, and model making to get hands on learning. The respondents were of common opinion that since Architecture course is different from other conventional streams, the same should be reflected in the physical learning spaces too. The studio ambience should be more work friendly with flexible layout where practical work or lectures, model making, and group discussions can be done. They emphasized the fact that integration of digital technology is mandatory nowadays to prepare students for Industry and to secure their future.

Most of the students and faculty members recommended that COA norms for senior class studios should be revised. The room areas and desk sizes should be reduced as most of the assignments are computerized and students prefer to work on their personal laptops rather than on huge drawing boards. They further advised that multipurpose desks should be designed for students in studios allowing for both manual drawing and laptop work. They informed that their respective institutions are not optimizing the use of large physical resources in most part of the year and advised that few measures should be undertaken for effective use of these key assets throughout the year (including weekends and during vacations).

DISCUSSION

Architecture is both the process and product of planning, designing, and engineering which involves creativity and technological skills. Architecture students need very different spaces; spaces that foster creativity, interaction, ease of work at all hours and are also inspiring. But it has been observed that the nature and type of spaces provided in a typical architecture college are on the lines of engineering colleges. Allocation of physical resources does not actually adhere to the modern learning needs of the budding architects. They do not promote interaction and are based on the old system of teacher imparting information and instructions with the students as passive observers and listeners. A more interactive layout like that in a conference room is desirable in most subjects as inter student brainstorming, discussions and a more flexible layout for group activities within the class is more suited to the learning of architecture shown in Figure 4. Studios should design as flexible activity spaces with spaces with infrastructure that can make them suitable for lectures, studio work, group work, model making, presentations and juries with minimum effort as shown in Figure 5.



Figure 4. Studio desks at architecture college in Junagarh.



Figure 5. Proposed layouts options for studios as flexible activity spaces (a) regular studio layout first and second year; (b) layout with more circulation space during juries, exhibitions, and group activities; (c) studio layout for senior classes—third to final year; (d) studio layout for group activities.

Conclusive Analysis

It has been assessed that the requirements/norms for physical assets prescribed and regulated by statutory bodies (COA and AICTE) need to be revised. The norms do not consider the gradation of students from first year to the final year; for instance, 3 sqm per student for studios can be reduced as large drawing boards in senior batches are not required. Students prefer to work on laptops; hence their desks can be compact and multifunctional.

Certain areas provided to meet with the special requirement for architectural education (like the workshop, computer labs, arts and graphics lab, material testing and surveying lab and museum/library) occupy large areas but are the most underutilized spaces of the institute in terms of working hours. These resources should either be merged with other facilities recommended by COA or shared with other departments of same parent body in the same campus. The computer labs could be incorporated within studio spaces and minimized. A holistic approach is needed. Multipurpose, flexible and interactive spaces should be designed which can adapt to different uses.

Colleges in general should be open to running refresher courses, discussions for professionals, cultural activities etc. after college hours. Running summer and winter schools would keep the spaces in use during vacations. Special courses for students and faculty could be run during breaks. Architecture Colleges whose facilities and resources are deemed and governed by council norms should not be built as a stand-alone buildings, instead these should be conjoined with few non governed allied disciplines of architecture like interior design degree/diploma courses, architectural diploma and PG diploma courses besides part time/regular masters for increasing its occupancy/frequency percentages resulting in best utilization of existing physical resources.

Conclusively, the existing capacity (resources) should be efficiently and effectively utilized. The need of the hour is to that the higher educational institutes should take measures for efficient space management that optimizes the use of existing physical resources, reduces wastage, controls expenditure cost and adapts to new approaches to teaching and learning for enhancement of skills and sustainable development of the institute.

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