

CHALLENGES OF ARCHITECTURAL EDUCATION IN INDIA

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INTRODUCTION

Architecture, mother of all arts and synthesis of all sciences, as a profession has its operational domain in creating state of art built environment to serve the basic human needs of living, working and care of mind and spirits besides circulation. Architecture is, primarily and essentially, a design activity supported and guided by basic elements of sun, space, verdure and form. It is a unique blend of aesthetic, technology and humanities duly supported by technical input but not like pure civil engineering. Since it is an activity where end product is meant to meet the basic needs of providing appropriate shelter, accordingly its role and importance in creating appropriate, supportive and sustainable built environment assumes importance. Despite the fact Architecture, as an activity, has been practised for number of centuries in India but its recognition as a profession has been of recent origin. Architectural education in India made its debut a century ago with the opening of Sir J J College of Art and Architecture in Mumbai in the earlier part of 20th century. With architecture as a profession, getting firmly rooted and commanding a relatively better acceptance in the post- independence and post- liberalisation period of technical education in India, large number of students are now opting for study of architecture, which has led to the surge in the number of such institutions mushrooming in the country. With opening of the large number of institutions and growth in the number of students, pattern and quality of architectural education has emerged an issue of intense debate and scrutiny in order to ensure that education becomes relevant to the context and the issues, which profession is required to cater and address, both locally and globally. Since credibility of all professions, for their growth and sustainability, hinges on and is linked to the quality and dedication of professionals serving them, accordingly, it becomes critical that quality of education imparted must be of the highest order, relevant to the needs, ethos and objectives of the profession and society, so that professionals could meet the aspirations of society and all stakeholders. However, over the years, with liberalization and opening of the economies leading to globalization, profession of architecture is facing numerous challenges and threats due to fast changing construction

technologies, new found materials and rapidly changing architectural vocabulary and building footprints. New found pattern of professional practices and design strategies have also created numerous challenges to the profession and the professionals. To meet these challenges, effectively and efficiently, professionals need to be equipped with different skills, capacities and capabilities, largely driven by state of art technologies. Architecture, as a profession, is now being viewed as the extension of the new technologies, materials and innovations in design and structure. Accordingly, architectural institutions are in a state of flux to find and discover new order and pattern of architectural education to meet these challenges and threats effectively and efficiently. Prevailing architectural education, which has its genesis in the old schools of western thoughts and ideas, need rationalization, review and redefinition to make it more relevant to Indian ethos, culture, environment, ecology, climate and needs of multi-layered society and communities in order to make it a distinct and unique entity. In order to achieve the defined professional objectives, large numbers of issues need to be addressed in the domain of architectural education

Designing Built Environment

Operational domain and focus of profession of Architecture revolves around designing buildings based on the principles of Scale, Proportions, Contrast, Order Beauty, Rhythm, Harmony and Order, to ensure buildings meet all the standards of visual and structural proportions; provide highest level of comfort; perform functions, they are supposed to do, in the most efficient manner; create durable structures with appropriate strength to meet any manmade and natural disasters besides being relevant to the given context. Accordingly, Architectural Design has highest priority, critical role and importance in the profession of Architecture, mandating all Architects that buildings are required to be designed with utmost care and highest professional input in order to ensure built environment makes value addition to the environment and ecology of any place, space and community where they are placed.

In order to evaluate the critical role and importance of Architectural Design in the urban context, Commission For Architecture and Built Environment, UK ,conducted a study titled, '**Value of Good Design- How buildings and spaces create economic and social value**, in the summer of 2002. As a part of study, a survey was conducted to elicit the public response and understanding of the community

regarding the impact, role and importance of Architectural Design in their day to day living. Finding of the surveys were;

“ Overwhelming 81% of people said they are interested in how the built environment looks and feels, with over a third saying they are very interested and another third wanting more of a say in the design of buildings and spaces. 85% of people agreed with the statement better quality buildings and public spaces improve the quality of people live and thought that the quality of the built environment made a difference to the way they felt. Survey show that the majority of people consider well designed buildings and spaces has positive influences on the quality of daily life, professional productivity, educational attainment, physical well-being because our lives are connected through our common built environment. Considering the impact of design throughout the lifetime of the buildings, on the places in which they are located, on all stakeholders involved, occupiers, users and passersby study came to conclusion that:

- A well designed hospital will help patients get better more quickly*
- A well designed school will improve the educational achievement of its pupils*
- A well designed department store will have a direct impact on stock*
- A well designed neighborhood will benefit from lower crime and higher house values*

values

Report also stated that we cannot afford not to invest in good design. Good design is not just about the aesthetic improvement of our environment, it is as much about improved quality of life, equality of opportunity and economic growth. If we want to be a successful and sustainable society, we have to overcome our ignorance about the importance of design and depart from our culturally-ingrained notion that a poor quality environment is the norm. The stakes are high but we will succeed provided we abide by three key principles:

- Good design does not cost more when measured across the lifetime of the building or place*
- Good design flows from the employment of skilled and multidisciplinary teams*
- The starting point of good design is client commitment*

Above study clearly demonstrates the role and importance of Architectural Design in promoting sustainability, safety, economy and lowering crime in the society besides creating buildings with low carbon footprint, low energy and resource requirements. Considering all these basic tenets, issues and challenges, architectural education

has to be geared and redefined to create appropriate level of skills and competencies among the students of Architecture to evolve state of art built environment. Looking at the present context, focus on design solution unfortunately has been found to be lacking and diluted in the existing frame-work of architectural education and teaching methodology adopted.

COURSE CURRICULA

Considering the unique character of the profession of architecture as a mix of art, science and technology, course curricula has also been defined as a combination of large number of subjects which include architectural design, building construction, structure, services, landscaping, legislation, housing, building economics town planning, surveying, estimating , costing, graphics, history of architecture etc. Thus the effort is to ensure the exposure of students to large number of disciplines and subjects, during his stay in the institution. Basis of large number of subjects is the requirement defined in the Minimum Standards of Architectural Education Regulations, 1983, framed by the Council of Architecture under the Indian Architects Act, 1972. The Regulations framed in 1983, still applicable despite the fact that a period spanning over 33 years have passed and requirement of profession and society have undergone numerous changes. For any education system to sustain and grow, it has to be dynamic and must keep pace with the changing environmental, structural, economic, physical and social requirements. Accordingly, it is always critical that course contents, teaching methodologies and art and science of imparting knowledge has to be periodically updated, reviewed rationalized and redefined. For this, there must be an inbuilt mechanism available within the system of education which should provide enough freedom, flexibility and innovations to ensure its relevance to meet the needs and aspirations of society, profession and the nation. Further, contours of education must be defined by the universities and academic institutions, which have required experience, expertise and know how, in order to ensure that education remains relevant, qualitative and focussed to the objectives to be achieved. Prevailing course curricula, focussing on standardization and rigidity, has done more damage than good to the profession with the result majority of students coming out from architectural institutions after graduation, are half baked and not of appropriate quality, to meet the basic and

essential needs of the profession in Architectural Design. Course curricula defined under the Regulations, 1983 provides for large number of subjects, study hours and marks to the engineering subjects of structure, services, workshops, surveying, estimating & costing etc. This changes the orientation of the student, who remains confused between architecture and engineering. Considering the prevailing pattern, there is an urgent need to review and rationalize the existing regulations on priority, to provide freedom and flexibility to the universities and academic institutions to frame their own agenda for architectural education in order to ensure that education remains relevant and rational. Further, it also needs to be decided, what should be level of professional competency an Architect should possess so that architectural education is geared to achieve the defined level of competency. Architect who is, primarily and essentially, a designer, because end product of all architectural endeavour is to create a sustainable design solution, accordingly focus of architectural education should be to make him a capable designer/ expert solution provider to all architectural problems. Since design provided by architects are to be executed on ground, accordingly, architectural education must provide students with the basic knowledge of materials, activities, components and elements which go into making of the buildings. Since architects are required to work with number of other professionals engaged with structure, services, HVAC etc, accordingly teaching/learning should be limited to basics in these areas so that they are integrated in the architectural design. Any attempt to make an architect, expert in engineering and services would be self-defeating, counter-productive diluting his core competency and focus of designing buildings. Further, architectural education must focus on Indian ethos, culture, climate in order to ensure that architectural solutions remain relevant to the Indian context. Architectural education must also focus on vernacular architecture so that Indian context of architecture is not diluted and lost in the haze of globalization and western pattern of education, which has little relevance to the Indian context.

Architecture over the years, has emerged as the elitist profession, catering only to haves ignoring have-nots. Profession needs to be made more rational because the needs and aspirations of built environment of 832 million (69%) of the population, which live in the 6,40,000 rural settlements, are not addressed by the present system of architectural education and due to absence of Architects in these areas. Thus

large chunk of built environment created in the rural areas remains outside the operational mechanism of architectural practices. In fact almost entire course curricula of architecture is focussed on the urban context and as such architects do not have much knowledge and understanding of the rural way of life, buildings in the rural areas and components/materials/technologies which go into their planning, designing and construction. Architectural education does not include, debate, define and provide for the pattern of living in rural habitat and their need for buildings. Thus the role and contribution of the profession in the rural area remains marginalised. Accordingly, rural context of built environment must be made integral part of architectural education.

Architecture should not be confined merely to the built environment, it must look within and beyond four walls of designing buildings. Since human beings are supposed to use buildings designed and built, so it will be critical that spaces created within and outside the buildings should have highest quality in order to make inhabitants social, healthy and productive. Architectural education must address the issue of sick building syndrome by eliminating buildings which are designed to promote unhealthy living. Since buildings have been found to be major consumers of energy and resources besides generators of waste, accordingly focus of Architectural education should be to impart knowledge and understanding of creating buildings which are healthy, environmentally sustainable, promoters of quality living, energy efficient, minimum consumers of available resources including land, water, wood etc, managing waste and reducing carbon footprints of the buildings to make this world more cleaner and greener. In addition, study of anatomy of buildings should also be made integral part of architectural education to give students insight of the entire context and genesis of building and its planning, designing, construction, operation, management and other underpinnings to improve their understanding/ vocabulary of buildings.

MUSHROOM GROWTH OF ARCHITECTURAL INSTITUTIONS

Starting with two institutions in 1950, the number of architectural institutions now stands at 458 (2016) in the country. Growth of these institutions has been largely during the last decade with states of Maharashtra, Tamilnadu, UP, Karnataka and Kerala cornering the major share. These four states jointly hold 59 % share of total

institutions in the country. Mushroom growth of these institutions in a short time span has led to high degree of dilution of architectural education in the country. With number of students registered in the B. Arch course standing at 58847 on 02.012.2015 since 2008 (as per the list displayed on the website of Council of Architecture), it can be assumed profession of architecture is going to meet the same fate that of engineering, in terms of quality of education and quality of professionals. Majority of new architectural institutions have come up in the existing engineering institutions, where they have been added as another stream offering education .Due to privatisation and commercialisation of the technical education in the country, most of the private management think architecture to be a better option in terms of economic returns due to longer course duration of 5 years as against 4 years in case of engineering, low level of investment in services/infrastructure required to start the course and speedier/easier approval from the statutory agencies. The quality of education remains least priority for the private managements. Most of these institutions have inadequate faculty, services and infrastructure. They are largely been run as appendage of the engineering courses. Most of these institutions are being run by proxy without the support of required level of faculty. Senior faculty in majority of institutions either exists on papers or is conspicuous by their absence.

Pattern of education also remains lopsided and diluted. Emerging trends of architectural education is characterised by the fact, that students want to get through the course/school as fast as possible with minimum efforts. This suits both management and faculty without understanding the damage being caused to the profession. Council of Architecture has introduced a new system under which the duration of 6 months practical training has been increased to one year to be undertaken in the final year. This has resulted in course virtually being reduced to four years from 5 years, with students seeking employment in the final year. The six month training, which was placed earlier in the 7th semester, was considered useful because it oriented the students to the practical aspect of architectural practice and made value addition to student understanding of the profession during his studies. With the change in pattern, quality of student's understanding has suffered enormously. In the process, student's learning, skill, quality and design output has also been diluted to a large extent

Architectural institutions, now urgently needs support, guidance and direction, in order to ensure that they become provider of quality education for training professionals of appropriate skill. This would help in providing quality services to the clients and society besides creating built environment, which meets the essential and basic needs of quality, economy, cost-effectiveness, operational efficiency, high indoor quality and sustainability. To achieve this, statutory institutions should now, critically and objectively, look at the entire mechanism of existing pattern of architectural education and opening of the new architectural institutions. Further growth of new institutions should be dictated by the principles of quality and necessity. Existing institutions also need to be reviewed rationally and objectively, so that they are made to grow to become institutions of excellence/quality. From quantitative growth, the architectural education should be launched on the path of qualitative consolidation, if the relevance of architecture as a profession has to be maintained and promoted.

STATUS OF FACULTY

With rapid growth of number of architectural institutions and higher order of prescribed teacher- student's ratio of 1:10, as against 1:15 in case of engineering, number of faculty members required in the architectural institutions has multiplied manifolds. In order to understand the availability of trained manpower for the faculty positions, it will be appropriate to look at the number of Architects available in the Country. As per the Council Of Architecture (only statutory authority created under the Indian Architects Act, 1972 to register the Architects) , there are in all 50823 registered Architects in the country as on October 28, 2016. Considering the population of 1210 million (as per census 2011), India has a very low availability of Architects in the country which works out to be 4 architects for every one lakh of population. Analysis of the data, regarding the spatial distribution of registered architects with Council of Architecture, also show lopsided distribution of the Architects in the country with majority of Architects choosing large urban areas as their place of residence and operation. Analysis of data reveals that 19 metropolitan cities in the country hold 71.92 % (36551) registered Architects. Mumbai alone has 15.97% of Architects of the country whereas share of national capital Delhi stands at 12.53%. Large number of architectural institutions are located in rural/ remote areas, which having little connectivity with major urban centres where majority of Architects

are located. These institutions are facing acute shortage of faculty members, both in quantity and quality, because few Architects are available in their nearby areas. Further, majority of Architects being in private practice/ service, they have little time and interest in teaching in architectural institutions. Considering the existing scenario, majority of faculty positions in the architectural institutions manned are at the lowest level of lecturer/assistant professors, and that too by the fresh graduates coming out of the colleges, without any practical and teaching experience and without understanding the professional practices. More than half of Architects (57.45%) registered with COA are young and below the age of 35 years, out of which 10.75% are even below 25 years of age, clearly indicating the acute shortage of professional manpower available in the country in the domain of architecture. Considering the fact that prescribed ratio for faculty in architectural institutions is 1:2:4 for the Professors, Associate Professors and Assistant Professors, large number of positions at the level of Professors and Associate Professors are either vacant or are being manned by proxy/ part time faculty. Number of students enrolled in the first year B Arch course for the current academic session stands at more than 18,000. In order to meet the faculty positions, institutional requirements works out to be of the order of 1800 exclusively for the first year student of the course based on the prescribed student teacher ratio of 1:10. Category wise faculty requirements work out to be 257 for Professors, 514 for Associate Professors and 1029 for Assistant Professors. In addition, faculty is required to teach the senior four batches which are already enrolled in the architectural institutions. In the absence of availability of appropriate faculty, most of the professionals practising are shown as the regular faculty even when they are visiting the institution for a day or two and that too for few hours. In the process, quality of education has suffered enormously. Most of the under-graduate Architects being churned out are half baked suffering from lack of design skill and high degree of professional incompetency.

Architectural education, because of peculiarity of the profession that architects are practitioners and not theoreticians, require that students need to be trained and educated in the process of how to design and how to do a professional job. A teacher who does not know and understand the essentials, intricacies and job profile of an architect, cannot make student understand the intent, content and scope of the architectural education. Before appointing any graduate as a teacher, it will be

critical that he must be made to undergo practice in the profession under a practising Architect for a minimum period of two years. Most of the Architects having good practice do not want to get involved in teaching, which has put the profession on the back foot. Architects, who have done commendable work in the profession, must be involved in teaching the students so that quality of education imparted becomes of a higher order. Another factor which has hampered the provision of good faculty is the absence of good institutions imparting education at the post-graduate level in the regular mode. Most of the institutions are imparting part time or weekend education, leading to creation of professionals who do not have any value addition due to master's degree they procure. Most of studies are without much research output. Thus the present practice of inducting army of young ill equipped fresh graduate architects as teachers with little background and knowledge of professional, technical, legal, ethical and vernacular issues need to be critically and objectively reviewed and ways and means must be found to ensure the availability of qualified and experienced teachers. This would require either putting on hold the opening of new institutions or review of intake permitted at higher level of 120/80 as against 40 in the existing institutions to lower down the student's intake. Further, prescribed teacher-student ratio should also be reviewed and rationalized to bring down the faculty requirements to the realistic level. . Focus of architectural education should also undergo a radical change from product to process; from buildings to the people who use space. Are there right people teaching? Teaching staff need a transformative vision. Are European standards the right standards? Are we training teaching staff to be good educators? How do we assess teachers? Teachers have a relatively small role; formal teaching only makes up 10% of what students learn. Students learn from peers + practice + staff – are we taking that into account?

ELIGIBILITY QUALIFICATIONS

Qualifications prescribed at intake level of the B Arch course has been at variance in various universities/institutions across the country. As per the Minimum Standards of Architectural Education Regulations, 1983, the qualification prescribed for admission for 10+2 level pass is that student must have studied the subject of mathematics with 50% marks in aggregate besides having qualified an aptitude test. For those who have passed pre- university in 10+1 mode, the student must have studied physics, chemistry and mathematics as compulsory subjects without any restriction of

minimum marks besides having qualified an aptitude test in architecture. However, as per the existing practice, students with 50% marks, having mathematics as subject of study at 10+2 level, with an aptitude test are eligible for admission in the B Arch course. The aptitude test in architecture is conducted by Council of Architecture by the name NATA and also by the CBSE in the shape of AIEEE. Eligibility requirements still remain an issue whether the profession belongs to the stream of art or science. Number of Architects feel that considering the nature of job, subjects to be studied, proficiency to be achieved, issues to be handled and experts to be interacted during the course of designing and execution of building projects, architect must have background of science. In this context, it is also said that course curricula for architectural education has been framed in such a manner that it includes considerable component of engineering, which essentially requires science as the background to understand the intent and contents of those subjects. Accordingly, it will be essential to re-define the intake qualification, keeping in view the courses to be studied and proficiency to be achieved to discharge effectively and efficiently duties of an Architect.

STATUS OF PROFESSION

The most significant aspect of the profession of Architecture is that Indian Parliament enacted a law in the year 1972 by the name "Indian Architects Act", which is applicable in the entire country. The Act unfortunately protects the title, 'Architect' but does not protect the professional practice of architecture. Act says, 'no person can use the title of Architect; unless he has qualification prescribed and is registered with the Council of Architecture created under the said law'. However, as per prevailing legal framework, the onus of designing the buildings at local level can be undertaken by the professionals, which are defined by the building bye-laws/building regulations/zoning regulations by the urban local bodies, Development Authorities, Improvement Trusts and other statutory bodies. This has resulted in large number of professionals, other than Architects, doing the job of building design, plan approvals, supervision of building construction and certifying the completion of buildings. Due to this ambiguity, mismatch and lopsided provision of law, most of the buildings are being designed by non-architects in the country and the profession of architecture has not got the recognition it deserves. This has also impacted the quality of built environment, which is being created by non-architects. In order to improve the status

of the profession of architecture, it will be critical to restrict the power of designing buildings to be vested with qualified architects. Professional status of architects' remains diluted because architectural practice is largely confined in the urban areas to the exclusion of rural India.

The pattern of architectural practice, as already stated, has made the profession 'elite', sub-serving the needs of the rich and people with resources. It does not address the problems and issues faced by the poor and informal sector, which remain outside the domain of professional practice. As such most of the urban areas have mushroom growth of slums and shanty towns. Architectural education must focus on the needs of both poor and informal sector in order to provide affordable and cost-effective solutions which can create appropriate quality of living for them. Poor/informal sector must be made integral part of architectural education to create appropriate level of awareness and professional competency among architects to address their problems.

ROLE OF STATUTORY BODIES

Council of Architecture, which has been created under the Indian Architect Act, 1972, has been mandated to regulate the architectural education in the country. In fact most of the maladies which have plagued the profession, has genesis in the way Council has viewed and regulated the education. Opening of large number of institutions, increased intake of students, staffing pattern, infrastructure, course curricula etc are the outcome of the minimum standards defined by the Council. The role of Council has been regulatory, focussing on promoting the quantity rather than on the quality of education. Infrastructure remains priority in any institution for its recognition rather than the quality of education, faculty and quality of students. Inspection is viewed more as a negative process rather than a positive means to improve the standards of education. In the process, quality of architectural education has become the major casualty. Council needs to constantly review the intent, content and scope of architectural education in order to improve its quality. It must work with different universities and institutions of repute and excellence in the country and at international level to define a new state of art agenda for architectural education. Council must provide freedom to universities/ institutions to reframe course curricula, to bring innovations in the architectural education. Council must

promote research and development in education in order to create professionals who have required level of professional competency. Role and operation of inspectors, appointed to inspect institutions, needs to be re-defined to make it more rational and objective. They should focus more on quality of education imparted rather than on the infrastructure available in the institute. Council of Architecture must work closely with the Indian Institute of Architects and eminent professionals, by creating an interactive forum, so that architectural education can be made to sub-serve the broader needs of the profession besides serving the communities, society and the nation. Minimum standards of education prescribed in 1983 need to be reviewed, rationalised, redefined and rewritten to make them more objective keeping in view the emerging needs of the profession, through a broad consultative process involving educational institutions of excellence and eminent professionals besides studying the global trends and pattern in architectural education. The intent and contents of the regulations should also be viewed on regular basis, considering the larger objective of improving the quality of education. Adequate freedom must be provided to bring innovations and new ideas, which can help Architects to address the needs of entire gamut of built environment. Role of Council will remain critical in leveraging the profession and promoting/ensuring quality of education. Council also must work out an agenda to create institutions of excellence in architecture in the country as role models of architectural education besides addressing the major issues and challenges facing the education. However, in order to change the approach and operational mechanism of the Council, its structure, composition, objectives, role, functions, area of operation etc also needs to be reviewed and rationalised to make it a body, which have desired level of expertise to guide and promote the profession and education.

CONCLUSION

In order to make Architectural education more objective, effective and efficient, it will be critical that entire gamut of architectural education is looked at. This would require review of study curricula and the way education is imparted. At present entire education is teacher centric where the role of student remains passive. This makes process of learning unidirectional / lopsided and student goes on losing the interest in learning. Teaching has to be two way process where student and teacher are actively involved in the teaching and learning process. This approach will help in

improving the quality of education. Further, architectural education at present is largely input based where student remains a recipient. The pattern needs to be changed from input to output based so as to ensure student has learnt what is being communicated to him. In the subject of architectural design the focus is on the end product rather than on the process, with the result students are always looking at the readymade solutions based on the design solutions already available in books/net. This kills the initiative of the student and negates his creative faculties and does not make him a good learner/designer. In order to promote originality and creativity, it will be critical if the student is made to learn, appreciate and understand the entire process, elements, principles, determinants, objectives and strategies as to how to approach a building design and what goes into making a sustainable design solution. This will go a long way in improving his understanding and design skill. In this context, relevance of adopting **Outcome Based Approach** in imparting education would be highly relevant to promote better learning and improving quality of architectural education. This will make architectural education dynamic, student centric, output based, performance and ability oriented, promoting high degree of student teacher interaction and bringing innovations and experimentation in teaching learning process. Education should be a partnership between teaching staff, students and built environment stakeholders because it is not just training architects; it is training both technologists and designers.

In addition, architectural education must also be geared to meet the challenges of globalization without diluting the context of vernacular architecture, involve the study of building anatomy right at the inception of the course and looking inside and outside the built spaces besides addressing the needs of poor and the informal sector. Education must expand the scope of architecture from buildings to communities to cities, for creating healthy and sustainable environment to make urban centres more liveable, productive, cost- effective, resource efficient with minimum consumer of resources and generators of the waste. Future of the profession will be largely contingent upon how effectively architectural education is rationalized and made objective, efficient and promoter of quality professionals.

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