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# TRADITIONAL ARCHITECTURE AND AN INNOVATIVE DESIGN APPROACH TO CREATE NEW URBAN STRUCTURES

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**Abstract:** The world we live in is a heterogeneous web of cultures, religions and schools of thought. The need of the hour in this rapidly developing era is to come up with fast and effective developmental schemes and new ideas. There is a requisite to break away from the old silhouettes and create new skylines. It is always interesting to return to the root and learn lessons which have validity for our times. The typology of the fort based on courtyards and roof terraces is typical of many similar buildings of Rajasthan. It shows how traditional buildings solved concerns of climate and modulated light. The study on previous architecture as a reliable reference in contemporary designing is always considered the guidelines toward further Architecture.

We still have to learn lot from traditional Architecture. Built environment of our past were seldom planned and developed with the benefit of designers and master plans. Instead they were a result of spontaneous development by the passage of time, lay of land and daily life of the people. Still they did reflect a sense of being rooted and a sense of belonging to the place they did respond to the sun, the wind and the rain. In this paper the Author made an attempt of identifying several Design Elements & Principles applied in the early buildings of Rajasthan, Gujarat and tries to put forward innovation in contemporary building design styles by using the similar elements in an innovative ways and also tries to address the question, the relevance in contemporary world through certain examples.

**Keywords:** Contemporary World, Heterogeneous Culture, Innovation, Traditional Approaches.

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**1. Introduction:** Tradition is that part of culture that is transmitted from one generation to the next one. To some extent, a society's identity is based on its traditional heritage. This is the reason for which many societies place a great value on heritage. The characteristic of Traditional Architecture generates a congenial place through a sympathetic design to its cultural environment and local people. The historical precedents demonstrate how the characteristic of traditional architecture accumulates and embodied its significance of traditional values in the contemporary architecture. Traditional Architectural principles always respected nature, and were climate conscious, user friendly, reflected the culture and tradition of the community at large. Understanding tradition should be not as the study of past tradition but as the contribution to new methods, solutions and achievements for the future built environments.

Traditional Architecture, generally speaking, conjures up images of huge Temple spires and gateways, large fortified palace complexes, mosques and Tombs. Yet there are features that retain continuity and scale, playing an instrumental role in the characterization of Indian Architecture. An effort to understand space in Indian Architecture can draw on the simple and direct physical conditions of the Environment prevailing at any place, thus giving meaning to the creation of spaces within specific physical parameters. Amongst these parameters, climate has a very deterministic role in shaping activity areas by creating indoor, outdoor and in-between spaces. Consequently, for Indian communities, 'outdoor activity' spaces acquire special significance. Gradually when the human race started settling in large groups, which we call urban centers, it gave rise to the various traditional dwelling typologies which are still visible in the numerous historic cities across the country. The traditional house typologies found in the historic settlements have continually been developed through the years and it is the physical compendium of the construction and societal system.

## 2. Basic Components of Rajasthan Traditional Architecture:

**i. Pavilions:** They came in to being by multiplying very simple spatial units in modules. Consisting of four columns & a roof. Irrespective of the style and construction method, their essence is the same. Mandapas and baradaris are some outstanding examples of spaces created to provide well-articulated shelters for gatherings or for pleasure. Pleasure pavilions known as baradaris [Fig1] have an extremely sophisticated form in Rajput and Mughal complexes.



Fig. 1: Pavilions of Rajasthan Palace

**ii. Courtyards:** Internal open spaces, become another thematic element in all scales of domestic architecture. From small urban houses to large mansions and palaces, courtyards became the key organizational elements responding to climatic conditions as well as the cultural needs of communities. This private internal open space also acquired special significance while serving various levels of privacy. A wide range of household activities could extend into courtyards. These became the living areas of all domestic architecture.

Courtyard spaces,[Fig2] drawing people out into the open, were further supported by terraces serving similar functional and climatic needs. In the warmer and more and zones, one can see the extra effort made to build terraces, as if one was gilding a courtyard at a higher level. It would not only be articulated in its construction system, but also get connected to the spaces at that level. Courtyard contributes to its spatial quality beautifully by bringing in a subdued light, creating a peaceful environment. This room without a roof is often bounded by verandahs along its periphery. Other rooms open into these verandahs creating a spatial organization based on a hierarchical sequence of spaces ranging from open to enclose.



Fig 2: Courtyards of Rajasthan palace

**iii. Baradaris Chatrris:** It is a beautiful example of how the basic form has responded to the various construction methods and styles of building. Every royal complex has to have a baradaris often more than one[Fig3]. The use of the baradaris as pleasure pavilions is clearly understandable since they are invariably located in gardens, or on high points or along water tanks and lakes. These structures are so articulated with the landscape and the spatial order of a building complex as to provide the most

strategic location for a good view, fresh air and general comfort. Another version of pavilion is the large Cupola like structure called a chattri in the north western parts of India. The structures is polygonal or circular in plan and has a domical roof. This extremely adaptable element is space, but equally it is a complete form. Chattris are often grouped in clusters. However, since they are a complete form by themselves, unlike the other pavilion forms, they too make larger spaces.



Fig 3: Baradaris & Chattris at Rajasthan

**iv. Jharokha/ Recess and overhangs:** The numerous recesses and overhangs of the building's facade have a further purpose, to draw cool air into the building. Since the streets of traditional cities spend most of the day in shade because of tall buildings on either side, the air that passes through the facade from the street is much cooler than the air exposed to the sun. The cool air enters through the havelis front facade, circulates through the rooms and then escapes through one of the courtyards taking out the hot air along with it. Zarokha [Fig4] is a projected place for, shade, sun, and light, breeze located on the upper floors. The partly shaded or open place (meant to shade the lower storey) owing to its small width (no verandah was found more than three feet wide) it does not shade the lower.



Fig. 4: Jharokha, Overhangs

**v. Jalis:** The advantage of a Jali is that it blocks the direct rays of the sun and yet permits air to enter the room and is designed to grant privacy. The balconies of two houses on opposite sides of the street in old cities are often extended so far that people could almost reach out and shake hands. With the stone Jalis carved at an angle of forty-five degrees sloping down, the viewer can maintain his privacy while looking down at the street.

### 3. Basic Components of Gujarat Traditional Architecture:

**i. Step Wells of Gujarat:** The vavs or baolis (step-wells) [Fig5] of Gujarat consist of two parts: a vertical shaft from which water is drawn and the surrounding inclined subterranean passageways, chambers and steps which provide access to the well. The galleries and chambers surrounding these wells were often carved profusely with elaborate detail and became cool, quiet retreats during the hot summers" (Tadgell, 1990). These stepped wells [Fig. 5] are also a social phenomenon with many gatherings.



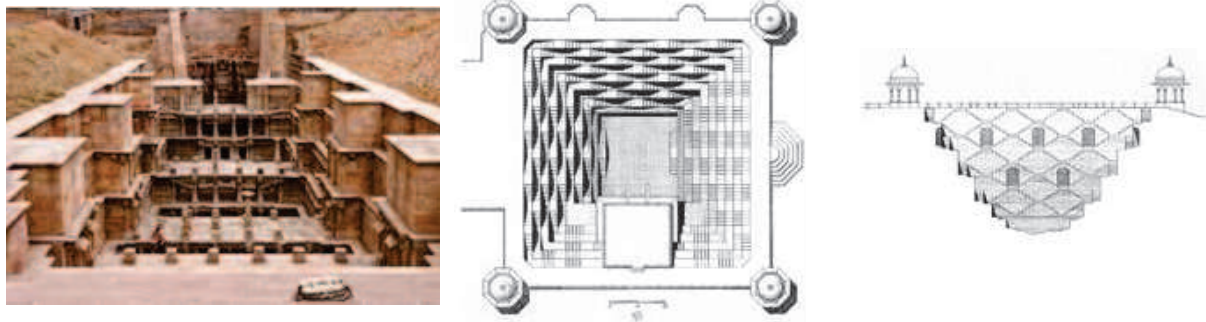


Fig 5: Step Wells of Gujarat

**ii.Otla:** In Ahmedabad, Gujarat, otla are a common element in houses located in pols - dense, traditional neighborhoods consisting of a single, usually dead-end, street and protected by a gate. The otla serves an important social function in these neighborhoods. Ahmedabad's walled city, emphasizes this social role of the otla in daily life. In her story booklet "Memories of My Pol in Old Ahmedabad," she states, "Our elder grandmother, Jadavba, used to sit on the otlo in the evening and women from the pol would come to discuss with her their personal and social problems, seeking solutions".



Fig 6: Otla in Ahmadabad pol Houses

**iii. Chowk:** At main gate, you will find some open space inside which is used to put things like traditional cots etc. Then there is a space open to sky called *chowk*. The rainwater falls in the *chowk*. The *chowk* and *parsal* are the peculiarities of the houses of the pol. There is a central hall-*orada* where you can find *Paniyara (Matka Stand)*. In the *Parsal* there is a place where the housewife can cook in sitting position. There was a provision for chimney (*Dhumadiyu*) over the fireplace (*Chulha*) as outlet for smoke of the kitchen. Then you can see a big room with two small ventilators.

**4. Modernity in Tradition:** Ar.B.V Doshi's states "I think architecture is a matter of transformation. Transformation of all adverse situations into favourable conditions". He states again about his work "For me its search, only a search. Search for that unknown that I have not known, neither I know how it will manifest .That's actually essence of my work". The statement clearly indicates that he is searching something new always which is indication of creativity of an architect. While talking about the transformation, he is clear about his objective of project and transformation should take place to meet these objectives but he is flexible in his approach to reach to these objectives. The main key aspect of his philosophy remains the openness of ideas and he himself quotes the Gandhi "open the windows but see that your roof is not blown out, make sure that the foundations are strong." Doshi understand the importance of foundation and that is nothing but looking back to traditional architecture of India and he is opening to new window which are adaption with new technology, new living style etc, He has said

“A deep understanding of the past and a comfortable relationship with the present was the only way that India could invent a sustainable future for herself, was his belief. A few such examples are stated below,

**i. Indian institute of management (IIM), Bangalore:** This is most prestigious project design by B.V.Doshi and scale of project is very big. The site area of campus is around 102 acres. The campus is completed in 1983 and the main function component includes Academic Complex, Seminar Hall, Faculty Room, Library, Administrative Section, Auditorium Student Dormitories, Development Centre, Faculty Housing, and Dining /Kitchen. Doshi has already explored campus design of CEPT prior to this campus design but he wanted to create new vocabulary for future Institution design. He has experimented various possibility of spaces, landscapes etc in this campus for students interaction or other social interaction to make campus alive. The concept of this campus derived from the Mughal City Fatehpur Sikri having series of squares, courtyards, passage and colonnades. Doshi reference this complex as “Bazaar of verandah. The teaching process could be done in open acting as random pavilions and width of corridor has been modulated to allow casual interaction. The corridors have been worked out in such a to allow light through pergola’s and roof on some part for walkway. The landscape spaces in corridor create interest for users as well shading.



Fig 7: Series of Squares & Courtyards



**ii. National institute of fashion technology (NIFT), Delhi:** This project has been designed by firm Stein, Doshi and Bhalla architects. These three persons have worked together but design of NIFT considered as Doshi’s Project. This project has been completed in 1986 and site area is around 3 acre. The project is situated in Hauz Khas, New Delhi. The complex is supposed to act as recourse center consisting of library of an Indian and Western garment and textile collection , a i laboratory and design studios, not only used for the industry , but as an example to general public , as well exporters showrooms , textile manufacturer’s showrooms and outlet for sale of cloth and textile . The requirements were very exhaustive and site area was very less, so almost the whole site has been occupied except 6 m set back. Doshi has created stepped court and water channel in middle aspiration from step well (baoli) of Ahmedabad which is considered a water conservation in ancient Indian architecture. This water channel is very narrow and long, so it gives direction to reach main entrance of building. Fashion needs very changing demand with respect to time, Doshi has created various display galleries, low and high platforms, areas for formal and casual activities and court fulfills all need of the

functions of buildings .The two courts are main feature of building and occasionally act as interactive space, steps of the courts act as sitting space.



Fig 8: Aspiration From Step Well

**iii. Forum celebration Mall of Udaipur:** The Celebration Mall is located in the city of Udaipur, one of the most beautiful cities of India. Udaipur is a major tourist centre and is known as the City of Lakes. Built in ethnic architectural style, the mall is the first iconic heritage mall in India with a unique blend of ethnicity on the outside with modern conveniences within and can be considered a landmark of Udaipur. This Mall is designed in such a way that ,where traditional elements like domes, chatriss and other elements are used.



Fig 9: Celebration Mall, Udaipur

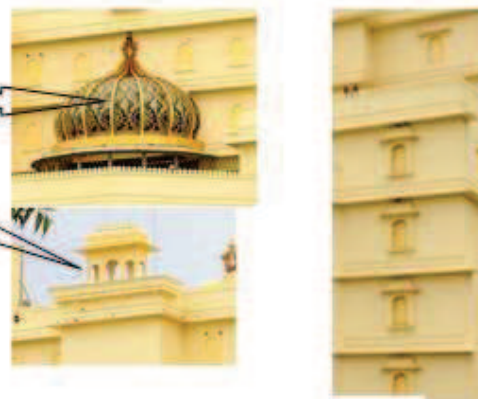


Fig 10, Various Traditional Elements

**Conclusion:** Traditional buildings are the unconscious expression of people's culture and the outcome of man's interaction with the nature. India is a land of unity in diversity. It has varied cultures and 'feels' to it. Traditional architecture offers the greatest potential for the development of a viable contemporary regionalism of consistent high quality, capable of providing for many building types, both old and new. The potential diversity from the sheer richness of the heritage diversified over centuries of continuous development (Abel, 2000, p. 171). Therefore Architecture is a discipline that can reflect different cultures

B.V.Doshi has worked with two great Masters Architect of the world Louis I Khan and Le Corbusier and it is very difficult to come out from the shadow of such Master architect but still Doshi has tried to create his originality in architecture by using the principles of ancient architecture along with modernism learned by these two Master architects. He has whole heartedly accepted the influence of both architects.

The common link which binds all the differences is the deep philosophy and spirituality. Due to this architecture was not just a 'discipline' or a business as it has become now. It was considered holy and its practice sacred. Hence we get total dedication and commitment to excellence which is why the traditional buildings in India are not only climatic masterpieces but also 'all encompassing' truths of architecture which will help us sustainable development to satisfy the future needs.

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