PERMANENCE IN ARCHITECTURE: INDIAN CONTEXT AND TIME

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Abstract

An expression of art or craft diminishes with changing philosophy over time, but an architectural expression tends to remain. The built form eventually becomes one of the very few representations of previous civilizations that have stood the test of time. Centuries old buildings have lasted, although they were not specifically designed for timelessness. The act of building is not a temporal one, each one is a representation of its time. The quality of remaining unchanged indefinitely or permanence in architecture can be achieved with the use of enduring construction material and sympathetic regard for the surroundings. Buildings outlive generations and as such need to be resourcefully designed to continue to be effective. A conscious use of the local materials, the local technical skills has allowed these buildings to harmonize with the context. Born of the earth, each of these speaks the language of the people and of the place. On the contrary, in Indian urban centers, a large quantum of the architectural expression today is ignorant of its place and time. There is a diminishing reverence to what the place demands and more attention to what we demand of it. This paper explores the connections between a building's context and time to its longevity. It argues that concentrated efforts made towards rootedness to a place and relevance to its time, will lead to significantly bolstering a building's perseverance. It also enquires into longevity through examples spanning different contexts and times. Significant examples of historic buildings of a place are discussed in comparison with contemporary examples of similar locations. Such a comparison will lead to an understanding of ways of adapting traditional knowledge to current needs and their appropriation to the time. The paper seeks to emphasize the importance of contextuality and close connect to time, in extending the life of a building.

Keywords: Context, Indian architecture, longevity, time, traditional, local materials

Word Count: 4418

1. INTRODUCTION

India is a country of diversity with vast variation of terrain that affects the culture. Five thousand-year-old epics *Mahabharata* and *Ramayana*, ancient scriptures like the *veda* form a part of the culture. The text of *Vastushastra* an ancient Hindu text, written in 2nd century BC, elucidates the design of buildings with respect to the wind direction and sun path, which are the primary concerns of design today. Indus valley was home to one of the oldest civilisations with a mature architectural expression.

Indian architecture has been affected by different religions, settling down of many dynasties of varying origins and migration of different races into the subcontinent. The architecture of each of these is unique. For example, the Buddhists carved out meditation spaces into the mountains for solitude while Hindu temples catered to communal gathering by building *mandapas,* gathering halls, in front of the *garbhagriha*, sanctum. Although each culture had its own strong expression, use of local material, craftsmen and workmanship led to a development of a different style than its origin. As explicitly seen in the case of Indo-saracenic architecture; Persian influenced Mughal buildings in India incorporated indigenous styles which led to a whole new style of architecture, seen across the breadth of the Mughal empire. All dominant civilizations, dynasties wanted to leave behind their mark of power through an awe-inspiring built form. In doing so, they intuitively presumed that their buildings will last forever, would be timeless, leaving an indelible mark on the history of that land. This is not unique for India but has also proliferated in other parts of the world. These historical landmarks have helped us trace back the development over centuries, forming “the great book of the human race. Man’s chief means of expressing the various stages of his development whether physical or mental”, as stated by Victor Hugo.

An enduring architectural legacy has been created by various influential civilizations in different parts of the world. One such example is that of the Pantheon in Rome, built in 150 AD. The cylindrical form is not only stable but is also representative of the significant advances in building technology at that time. Pozzolana concrete, an innovative Roman building material, made the large scale of the dome possible. Other prominent examples include the Bibliothèque Sainte-Geneviève, Paris built in 1842 AD by Henri Labrouste, uses cast iron columns and arches to support the structure of the building; relieving the massiveness of its exterior aesthetics. The temple complex at Angkor Wat, Cambodia, 1113 AD, made in sandstone and laterite represents a building tradition that spanned over five centuries and has been in continuous use since its construction. Timelessness may not have been the primary purpose behind erecting these structures, however they have thrived, making us question the approach taken towards their design. This may not be solely attributed to the building technology as there may have been other influencing factors that need to be analyzed.

The inception of a design is a combined response to its culture, socio-political aspects, climate, topography, etc., in which a response to its time is intrinsic. While the mighty Taj Mahal, 1632 AD, portrays dignity, status and power; Ashwini Kumar Crematorium at Surat, 1999 characterizes the culture and social practices of modern times. Each architectural expression depicts the time in which it was conceived. Contrary to this, it can be observed that in few urban centres of India, there is an ignorance towards the immediate surroundings and the current scenario while pursuing a borrowed image from other cultures. This has led to glass based facades becoming common place. Although, such an external treatment may be suitable in a cooler climate, a tropical country like India demands heat loss rather than heat gain. Direct radiation on these surfaces increases the cooling loads and thereby increasing the consumption of energy to counter it. A building inspired by traditional approaches would respond more effectively in cutting out the harsh weather and creating a comfortable condition inside. “After the Medieval age, the Indian style of architecture that was geographically relevant and that made use of locally available materials started to wane. The art and technique of construction faded away.

But still in some states and regions, traditions of good and meaningful architecture are alive." (Singh & Warkhandkar, 2003).

Image 1: Last rites being performed on the ghats of Banaras

Image 2: Ashwini Kumar Crematorium, Surat, 1999 by Gurjit Singh Matharoo

The term sustainability has been recently coined but the thought behind it has been passed down as a responsibility since the very beginning. In India, an awareness of one's immediate surroundings and acting in accordance with that has been inculcated as part of our *sanskar,* traditional values. It is considered a good practice to take into account the implications of the local context, material and craftsmanship such that the building is of its time and place. This consideration could lead to a longer life for the building, enabling it to overcome various hurdles. Merging these forces of creating the global image while deliberating on traditional ways, we are endeavoring for the longevity of architecture. This can be demonstrated through certain contemporary architectural interventions that have adapted the traditional knowledge for the needs of their time. This attempt could be a way towards self-realization in the modern context of India.

Image 3: Rudabai Stepwell, Adalaj, 1499 showing multi-layered interactive spaces in the traditional water structure of Gujarat

Image 4: Tata Consultancy Services, Gandhinagar, 2012 by Snehal Shah showing inspiration from the traditional stepwells of Gujarat (Beck & Cooper, 2014)

2. THE GENESIS

This section discusses the formation of an idea on the longevity of buildings. The theory of architecture has witnessed many concepts pertaining to regionalism, contextualism and so on with the interest of creating an appropriate architecture. Taking this thought forward, such a solution would also be suited for its time and extend its life. There are many factors that affect the design strategies of a building, two of these critical factors have been considered as paramount: Context and Time.

2.1 Significance of Context

Vastushastra, is an Indian science that helps one to design in harmony with the five basic elements of nature, which are wind, water, earth, fire and sky. All the Hindu temples were built based on the knowledge explained in the *Vastushastra.* These five elements comprise the essence of the context in architecture. The use of context as a major guiding force in design has been a part of the traditional science.

A work never exists in isolation; there is always a context in which it is situated and with which a relationship is established. While a context can be measurable, it is also malleable. (Simitch & Warke, 2014) Architecture is always a part of a context, while itself forming a context. It is dependent on context, but at the same time transforms and interprets it. (Janson & Tigges, 2014) One has the flexibility to interpret the context while addressing the most demanding issues in any project. For every act of building its context can be distinguished into two categories – Physical and Meta-physical. A set of existing characteristics of the place forms the physical context of a building. These may be broadly identified as the topography and surroundings, material and climate. Certain characteristics may not be easy to perceive and may be a part of the spirit of the place. Although ephemeral in nature, these metaphysical aspects are representative of the socio-cultural and traditional character of the society. In some cases, the physical aspects may emerge as dominant while, in the other the metaphysical may take precedence.

2.1.1 Physical Context

Topography and Surroundings: While architecture follows general principles of architectural order or of an architectural type, it is also subject through context to the special features of the topography and the condition of a place. (Janson & Tigges, 2014) Topography is a predominant factor while placing any building on the site. All the factors that delineate the periphery of the site, on which the building is placed, also contribute towards its context, whether man made like existing structures, retaining walls or natural like trees, boulders and water bodies. Surroundings vary greatly depending on the location, be it in the middle of the city i.e. inserted in a pre-existing dense fabric or in the open fields with views from the site or towards the site. A highly innovative architect, Nari Gandhi, worked on Frank Lloyd Wright's ideology of organic architecture. He responded strongly to the landscape and site contours, harmoniously merging his projects with their surroundings.

Image 5: Madh Island House, Mumbai, 1993 by Nari Gandhi

Image 6: Jain Bungalow, Lonavala, 1992 by Nari Gandhi

Material: The scarcity of materials, their use and handling through observation and experience is a rare remnant of continuity with the past. It is a delight today to become aware of the diligence, care and ingenuity of the ancients in the ways they went about using materials. Materials and their use express the character, the attitude towards eternity, and the love of nature, other people and the 'good'. (Antoniades, 1992) The buildings in the vicinity, particularly the vernacular structures, enable one to identify the local material palette.

These materials are a part of the ecology and climate of the locale. They may be sourced from the surrounding forests, a nearby quarries or the excavated soil from the site itself.

It would be a mistake, however, to consider the nature of materials as being permanent and unchangeable. An understanding of the behaviors of materials not only plays an important part in protecting the integrity of a construction and ensuring the quality of life of those within, but it can also contribute significantly to the aesthetic qualities of a building. (Simitch & Warke, 2014) A self-taught Indian architect, Didi Contractor, pays great respect towards vernacular traditions and actively adapts them for contemporary sustainability. Her houses built using local materials like mud, slate, river stones are constructed as a tribute to the natural surroundings.

Image 7: Adobe and bamboo at Dharmalaya Institute, Himachal Pradesh, 2012 by Didi Contractor

Image 8: Local slate, adobe and bamboo in Sambhaavnaa Institute, Himachal Pradesh, 2000 by Didi Contractor

Climate: The primary considerations for the weather of a place are the effects of the sun, wind, light and rain. The intensity of the sun and the direction of the wind guide the design strategies. Charles Correa, an eminent Indian architect who had a contextual approach, once said “Form follows climate - to build in India, is to respond to climate, as it has never been possible to squander the kind of money and energy necessary to air-condition a building under the tropical sun.” Climate is not static, it is constantly evolving and this must be engaged by any building, allowing it to adapt to these changes. At the same time, one must not overlook the possibilities of an extreme variation in the climate, such as floods, earthquakes, etc. Adaptation to the climate may be expressed through various elements within the building such as the orientation, volume, fenestration pattern, wall thickness, wind towers, clearstory windows, etc. Two prominent elements are the brise-soleil or *jaali*s and the characteristic courtyards. A modular kindergarten design in South India employs terracotta jaalis as a perforated external building skin. They facilitate adequate cross ventilation and cut down the harsh western sun. Traditional houses in the arid region of western India typically have a small open to sky internal courtyard that connects these narrow houses with the outdoors, allowing natural light to stream in while drawing out the hot air.

Images 9, 10: DPS Kindergarten School, Bangalore, 2012 by Khosla Associates (Picture Credits: Shamanth Patil J.)

Image 10: Courtyard in Jagatbhai Mehta House, Ahmedabad, built in 19th C and renovated in 2004 (Picture Credits: Nishant Mehta)

2.1.2 Metaphysical Context

Socio-culture: The immeasurable factors that strongly root a project into its surroundings are the lifestyles, customs, and values that characterize the society. It may also include a physical representation in the form of symbols, forms, aesthetics, material culture, and attitudes. Civilizations are known to have their own unique architectural form which is guided by the historically predominant cultural values of the people and their social makeup. On a larger scale, context means the network of interrelationships between the points of reference and public spaces and buildings taken into consideration by urban planning, which also reflect the historic context. (Janson & Tigges, 2014). Different dwelling typologies are driven by forces that give them identifiable characteristics. One such example is that of a traditional Maharashtrian *wada,* Holkar wada in Chandwad. The *wada* within is a large structure with two courtyards, the first internal courtyard is surrounded by the offices, thus a more public space. While the second internal courtyard is adjacent to the kitchen, to maintain the privacy of the women who perform household activities in it. (Raje-Gupta, 2007)

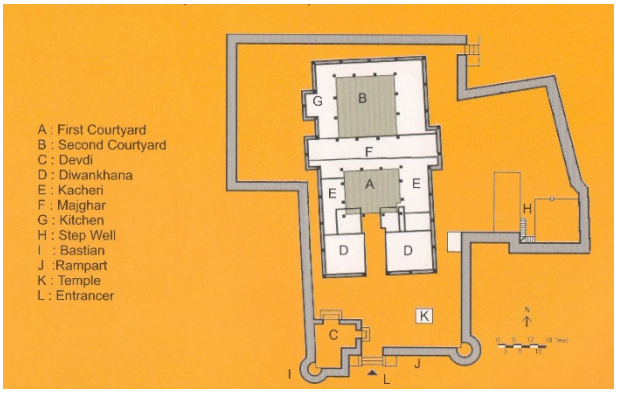

Image 11: Holkar wada, Chandwad, 1760 – Traditional Maharashtrian house form, India (Raje-Gupta, 2007)

Image 12: View of internal courtyard in Holkar wada, Chandwad, 1760

Tradition: It may be defined as an inherited pattern of thought, action or behavior such as a religious practice or a social custom. An adherence to past practices of construction techniques and styles has governed many historical buildings, giving them some similarities. A continuation of these practices in today's scenario may have a different representation while maintaining the language. Certain building elements that have been a

prominent part of traditional architecture of a place may now be carried forward with a variation in their form. For example, a perforated screen or *jaali* was a common feature in the dynastic society where women had their own private chambers, creating a visual barrier while allowing the cool breeze to compliment the harsh weather. These screens are still commonly used in various built forms as a response to the climate of that region.

Image 13: Intricate jaali patterns in Mehrangarh fort, Jodhpur, 1460

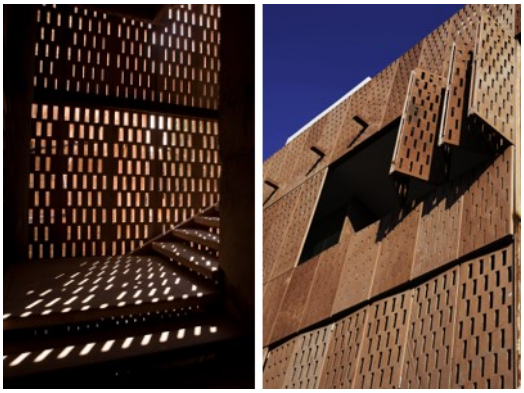

Image 14: Raas Boutique Hotel, Jodhpur, 2011 by Studio Lotus

2.2 Significance of Time

"Jatasya hi dhruvomrutyur dhrubvam janma mrutasya ch" For one who has taken his birth, death is certain; and for one who is dead, birth is certain.

Linear time is an invention of the West. (Unwin , 2015) Time in the Indian psyche is a cyclic phenomenon. The faith in reincarnation, the cycle of birth, death and rebirth, the unending chain of construction, destruction and reconstruction, all reaffirm the belief in the recurrence of time. However, although cyclic, time is not static. It is helical, evolving continuously. The process of Evolution is not a linear continuity but acts as a helix or a spiral with a still center and a dynamic periphery. (Pandya, 2005) This interpretation of time can be understood with the reference of architecture, wherein, the context is its static center and the changes that occur in the architecture of a place over time, is its dynamic periphery. The essence of the place has to be retained, whether physical or cultural or experiential; while the tools of expression may change with the evolution in technology, material, skills etc. through time. This research interprets time for architecture as a reflection of the past and present, 'of its time' with the subconscious consideration for the future 'for a long time'.

2.2.1 Reflection of the Past and Present - 'of its time'

Any architectural expression is a static form denoting one point in the spiral progression. However, at all points every expression needs to have a strong connection with the center i.e. with the essence of the place that it is built in. Advancements in technology and material knowledge should be taken conscientiously and applied only where appropriate. A contemporary Indian architect, Snehal Shah, also believes in making architecture that is 'of its time', as stated in a Gujarati proverb "*vakhat evu vagu*". History confirms that buildings appropriate to their time, place and climate, endure. (Beck & Cooper, 2014) This is clearly seen in the stepwells commonly found in the western hot and arid parts of India. Scarcity of water led to the making of the stepwells, multistorey subterranean structure to fetch water. Collecting water for domestic, religious and irrigation purposes was a routine and stepwells were made into elaborate structures for the purpose of socializing, interacting and to make the journey relaxing. In the traditional houses of Rajasthan, a desert state, the social

set up demands an increased privacy for the women of the house such that, they always cover their face with a veil. An architectural interpretation of the same can be seen on the façade of the house, in the form of a *jharokha,* a sit out with a *jaali*. This allows the visual connect without compromising their privacy while at the same time cooling the breeze as it enters through the small openings. Although the social constraints about privacy are evolving, the *jharokhas* still remain appropriate as a defense against the desert like climate.

2.2.2 Consideration for the Future - 'for a long time'

The quality of timelessness or permanence can be instilled into an architectural expression, through its connection to the static centre, context, of the spiral path of progressing time. With the progression in time, the physical and metaphysical contexts are also continuously evolving. The architectural manifestation of this evolution thus becomes a unique response to that moment in time; encapsulating the needs and the knowledge of that time. If a building functions well for that time and in its place, then even with the change in function it can be easily adaptable. Repetition of certain elements in the building, that are culturally and climatically appropriate, lend a building this ease of use. "When we compare our perception of works from various epochs, meanwhile, the relationship between permanence and change becomes visible. Registered in the face of continuously changing styles, forms, materials and methods of construction are ever-recurring spatial configurations, which have stood the test of time." (Janson & Tigges, 2014)

3. ARCHITECTURAL INTERVENTIONS

An increasing need to develop an architectural language that is appropriate to its place, has generated a strong interest in the traditional architecture. Learnings from the past have guided the reflections of the present. The showcased examples are divided into two categories of Traditional architecture and Contemporary architecture. Building examples from the past show the aspects that need to be assimilated from history. Efforts to adapt these learnings into the present time are seen through the contemporary examples.

3.1 Learnings from History: Traditional Architecture

History teaches us the ways in which various layers of society with respect to culture, social construct, use of technology and material, and climate, etc. have reflected in to the architectural form. Representative examples from distinct regions of the country have been elaborated below.

3.1.1 Bhunga Houses, Banni, Kutchh

Kutchh is located in the desert district of Gujarat, subject to harsh climate and meagre rainfall and is susceptible to earthquakes. The traditional house has evolved in the villages over centuries as a response to these extreme conditions in addition to cyclonic winds and sand-storms. The house is divided into cylindrical free-standing structures capped by a timber trussed thatch roof, called *bhungas*. The roof construction may be intricately detailed or plain. A single-family household may consist of multiple *bhungas* connected to each other with a raised plinth. The cylindrical form is efficient against the earthquake forces and has outlived many modern structures.

The desert landscape has an abundance of mud which is essentially used as a primary construction material. Thick, sun-dried mud block walls provide a protective layer against the high temperature outside. Plastered with mud and cow-dung, the walls remain cool in spite of the intense radiant heat. These *bhungas*, three to five meters in diameter, form the main living space, and the rectangular *choki* is used for cooking, storage and

washing. (Kagal, 1986) Wall decorations of clay and mirrors add to the rich ambience and gives the individual *bhungas* an identity.

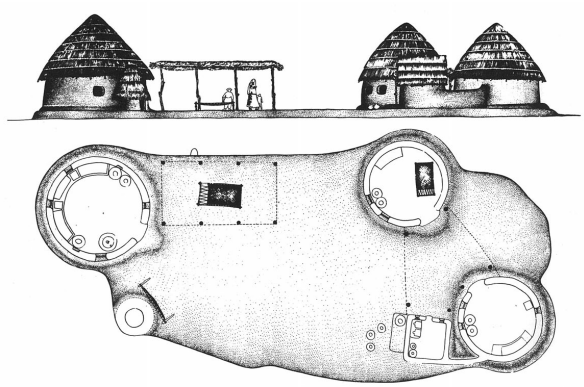

Image 15: Drawing of a typical Bhunga house with a raised platform and covered outdoor activity area (Kagal, 1986)

Image 16: Sloping timber roof of a bhunga covered with thatch and ornamented walls

3.1.2 Padmanabhapuram Palace, Thiruvananthapuram, 1744 AD

Thiruvananthapuram is the capital city of tropical Kerala, located in southern India, it has a hot and humid climate. Two annual monsoons have led to sweeping roof lines with open gables for ventilation. Use of timber is the most developed building craft in Kerala with supremely elegant detailing. The ruling dynasty built Padmanabhapuram palace as their private residence whose design is influenced by the matriarchal system leading to the delicacy.

Buildings in this complex display tiled roofs and timber balconies that have continuous openings. The openings, shaded with deep eaves were filled with movable wooden louvres that could be adjusted with accordance to the tropical climate, blocking out the gushing monsoon rain. The rosewood beams hold up the pyramidal roofs while the lustrous black floors are made up of a combination of egg white, jaggery, lime, burnt coconut husk, charcoal and river sand, so bright as to mirror the surroundings. The entire palace complex derives its architectural orientation from the principles of *vastupurush mandala* with the mother palace being the focal point. (Grover, 2004)

Image 17: Steep sloping tiled roofs with deep eaves covering the verandahs

Image 18: Carved wooden roof beams and louvered openings next to the built-in seating

3.1.3 Vishweshwara Mahadeva Temple, Mahuli, 1735 AD

In west-central India, the rocky Deccan plateau consists of flat-lying volcanic basalt stone which was quarried and traditionally used for the construction of forts, temples, lower storey of *wadas,* bastions, etc. One prominent temple of this region is a heptagonal temple located slightly outside the city of Satara, along the confluence of the rivers Krishna and Venna.

Built entirely in basalt, this temple is enclosed in a paved courtyard and has cloisters of cells built in stone arches and domes. The local character is seen in the flights of steps leading to the temple, and the *ghats* that descend down to the river. Arcades, built in the dark-grey stone, break the monotony of the steps of the *ghats* and create occasional terraces. The arched cloisters around the temple served as ancillary spaces for the activities like garland making, preparation of offerings, chanting mantras etc and moreover as resting spaces for travelers.

Image 19: Steps of ghats descending towards the confluence

Image 20: Arched cloisters forming the periphery of the central paved courtyard of the temple complex

3.2 Reflection into the Present: Contemporary Architecture

Taking inspiration from the past, certain elements or space making principles of building can be readapted for the current needs and not blindly replicated. With time, the architectural style keeps evolving but is always rooted to the place with its climate, cultural values and social structure. A meaningful engagement with the traditional architecture could inspire new designs and provide a point of reference.

3.2.1 Khamir Craft Facility, Bhuj, 2007 by Neelkanth Chhaya

Khamir, meaning 'intrinsic pride' in the local language Kachchhi, is an artisan village to promote the local art and craft heritage. Owing to the fragile ecology of the arid region, any building intervention must tread lightly while respecting the traditional spatial typologies. The complex has been strongly rooted by using regionally appropriate materials. The design makes the buildings permeable to the surroundings while also addressing the social complexities of the locale. This holistic approach has reinforced the region's identity as a rich art and craft resource and also re-instilled pride in the people.

Using a modular plan, the layout of the buildings was optimized to account for the seismic loads. Similarly, heavier materials at the base and lighter on the upper storey reduces the movement of the structure. On the ground floor, the construction is of rammed earth, and on the first-floor walls were made with wattle & daub panels. These lime-plastered in-fill panels have a wooden framework between light-weight steel columns that extend up to the roof. Neelkanth Chhaya says, "Orientation and configuration are taken into account along with appropriate breeze flow, reduction of thermal radiation exposure and creation of effective daylight

conditions." Stout plinths of random rubble masonry connect individual buildings, not unlike the traditional *bhunga* dwellings. Cool interior spaces are aided by the polished black flooring, dimming the incidence of light inside. Orthogonal plans clustered around small open courts, encourage movement along the diagonal, recreating the winding patterns of the traditional villages. A spatial sequence of harsh outdoors, to narrow shaded streets and courtyards, to covered verandahs leading to the cool and comfortable interiors, echoes familiarity. Encapsulating the spirit of the region, the spaces and experiences reference the everyday memories and preserve the culture.

Image 21: Raised plinth connects the spaces; sloping roofs shade the top storey *(Picture Credits: Neelkanth Chhaya)*

Image 22:Rammed earth walls raised on a stone plinth, wattle and daub panels on the upper floor *(Picture Credits: Neelkanth Chhaya)*

3.2.2 Loyola Chapel and Auditorium, Thiruvananthapuram, 1971 by Laurie Baker

Situated in the grounds of a college, is an interesting interlinking of the two volumes under a single roof, an auditorium and a chapel. The 1000-seater auditorium, a large uninterrupted space, challenged the architect's skills of creating low cost structures. Avoiding the use of steel and reinforced concrete, Baker chose to use load-bearing walls and a timber roof frame with asbestos-sheet roofing, which proved to be an economical solution. The use of cross-braced cavity walls addressed the issue of ventilation in a tropical climate, while perforated brickwork near the altar brings in light poetically. (Mehrotra , 2011)

The chapel space is lit with indirect light from above, giving it a spiritual existence, whereas the auditorium is lit from both the sides with brick *jaalis* or perforated screens. The architect believed that, proper development can be done if raw material is brought from a place within a few kilometers of the site. With a strong belief in the vernacular knowledge and understanding of the climate, he drew creative sustenance from his surroundings. The forgotten vernacular techniques were used in his designs.

3.2.3 Tata Institute for Social Sciences, Tuljapur, 2004 by Rahul Mehrotra

Image 23: Exterior view showing wind towers (Picture credits: RMA website)

Image 24:Courtyard used as a point of access within the building complex (RMA website)

Located in the hinterland of Maharashtra, this institute visually replicates the local material palette. Basalt, the local stone, is extensively used in most traditional built forms of the region. Responding to the locale, the building is designed as a series of clusters around courtyards, similar to traditional patterns in the region. An appropriate response to the climate of this rural setting is created by providing a variety of open and covered spaces, which facilitate social communication and are multi-functional. The courtyards and terraces serve as interactive spaces on cool weather days.

The use of appropriate building materials was explored; the buildings were built using local stone for load bearing walls and an inexpensive and innovative ferro-cement vault for the roofing system. In addition, wind towers were introduced in all buildings to integrate passive cooling for the interior spaces. (RMA, 2004). In the

Image 25: Brick cavity walls with jaalis and wooden framed roof *(Picture Credits: Rahul Mehrotra)*

architect's words, "The idea is to combine materials, to juxtapose conventional craftsmanship with industrial materials and traditional spatial arrangements with contemporary space organization. In short, to give expression to the multiple worlds, pluralism and dualities that so vividly characterize the Asian landscape." (Mehrotra, 2007)

3.3 Progression Through Centuries:

Looking at the wide vista of architectural form, through the centuries and across the dynasties, a recurrence of certain elements can be observed. Built in different times, each building had a history to look back at and use as a reference. Thus, drawing inspiration and applying it to its own current context. Local climate conditions and available material remained fairly constant while the culture and needs were continuously evolving.

In the rich architectural heritage of northern India, a consistent use of red sandstone is evident. Right from the first Muslim invasion, there is an extensive use of the local material in their religious structures; Quwwat-ul-Islam mosque, 1193 AD. A stepwell also built in the same material, Agrasen ki baoli, 10th c, rebuilt in 14th C is a subterranean structure made as a device to draw water and also serves as a respite from the hot summer months. The wide spread capital complex of the ruling king Akbar, Fatehpur Sikri, 1569 AD had different building types all designed in red sandstone. The political centre of the Mughal state draws its name from the stone, Red Fort, 1639 AD and the current political centre of democratic India, Parliament House, 1921, is also grounded by the same. A new building in the same complex as Parliament House, the Parliament Library, 2003, is both visually and symbolically linked to the heritage building. More recent works in the region still use the same material, albeit in different manners, irrespective of the primary function of the building- Tata Consultancy Services, Noida, 2007-08 by Mario Botta and Lebua Resorts Devi Ratan Hotel, Jaipur, 2010 by Urban Studio. This can be credited to the strong influence of the climate and the local context.

Image 26: Progression through time; (L-R) Quwwat-ul-Islam Mosque (1193), Agrasen ki baoli (10th C), Fatehpur Sikri (1569), Red Fort, (1639)

Image 27: Progression through time; (L-R) Parliament House (1921), Parliament Library (2003), TCS, Noida (2008), Lebua Resorts (2010)

4. CONCLUSION

The examples discussed here, display a deep-rooted respect towards the traditional techniques and knowledge. Certain building forms and uses of materials were developed because the people understood the climate and how their cultural construct, reshapes their spaces. As seen through the progression of buildings in different centuries, a response to the climate is a constant concern and goes along with the response to the immediate needs and functions, with an underlay of the socio-cultural aspects of that time. Traditional examples of architecture are the inspiration for the contemporary examples, which show an evolved

expression through time. To create a meaningful interpretation in the current scenario, architects would need to first have a clear understanding of these various layers working in unison. The strict rules of climate responsive architecture make a building workable, but it becomes welcoming and habitable when softened by a sensitive approach towards the culture and traditions. This attracts an association and instills a sense of belonging amongst its inhabitants. Thus, affirming its place as a re-appropriation and leading to a tendency in the people to preserve the built form for a longer period of time.

History has many examples of monumental load bearing buildings that cannot be replicated in the same way today. In the vast landscape of India, there are a few prominent heritage communities like Ahmedabad, Kolkata, Gwalior, Chennai, etc. that have a dominant architectural language and expression that subconsciously forms the context for newer buildings. We need to design taking learnings from historical examples for today's context by re-appropriating traditions into modern ways of building. Learning from traditions does not only mean imitating its physical form and attributes, but also to get inspired and reflect it into the essence, play of masses, sequence of spaces, etc. Daniel Libeskind summarizes this thought process by saying, "to provide meaningful architecture is not to parody history, but to articulate it."

Primary components like space and place making, with a consideration towards local traditions, reflect the regional attitude through elements that are continually seen in the local architecture. This is not pertaining to a certain region or a certain country, it is applicable to any place at any given point in time. Modern-day design process should incorporate this attitude, along with a sympathetic regard towards the physical and meta-physical aspects of the context. Respect for nature's ways and an understanding of the surroundings has been embedded into our everyday activities and in our psyche. It formed a part of the Indian value system, *sanskar*. Continuing with these values, contemporary architecture should speak of its time, while being anchored to its place, the core of spirally evolving time. As Yatin Pandya says, "the concept of change is inexorably tied to the concept of time". As we evolve, so should our buildings.

Dwindling resources have driven us towards more efficient solutions. There are various ways to achieve this, which all ultimately address the indispensable concerns of the context and its evolution with time. Permanence can be instilled into architectural solutions through careful thought towards these aspects. Longevity of buildings can cater to the multiple pressing concerns of space efficiency, multiple users and changing functions. At a time when things are more temporary than before, permanence of our structures can form the physical anchors of society.

"Karmanye va dhikaraste ma faleshu kadachana, ma karmafala heturbhur ma te sango stva karmani"

Shri Krishna said to Arjuna: you have a right to perform your prescribed duty, but you are not entitled to the fruits of action. Never consider yourself the cause of the results of your activities, and never be attached to not doing your duty. (Chapter 2 verse 47, 400-300 BC) (Bhaktivedanta Swami Prabhupada, 2005)

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