

JARGONS OF TRADITIONAL ARCHITECTURE IN INDIA

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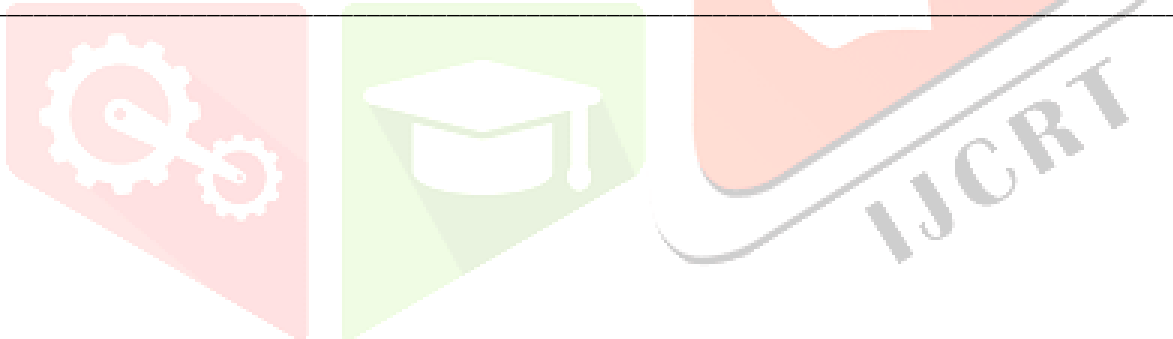
Abstract : Indian civilization is certainly known for its fortune in architecture. It is the outcome and the end product of many hit and trails, failures and conditions. Today, the Indian architecture has moved towards west. Architects are looking forward in the direction of creating modern identity. As a result, the roots and origin of our traditional and living heritage has been lost somewhere in the vicinity.

Indian traditional architecture is blessed with sustainability. It is the consequence of the many unknown crafts persons, who have conveyed their carriers for it. In this era of intelligent architecture, forgetting the sustainable roots of past for which we are prominently known will be erroneous for the endowment of their contributions. These jargons if strayed away will be very strenuous to procure back. However, it is feasible to conserve these riches. We can't stern back to old. But we can unify indigenous and intelligent together.

Traditional architecture is considered as the antonym of modernity. Indian traditional architecture has proved to be the instructive example of sustainable solutions. It reflects the region, culture and values of its owner. To understand and built a connection between people and built space one needs to at first understand the roots.

The intent of the research is to study the sustainable practices been practiced in the past by focusing on the architecture and technologies in the dwellings of Shekhawati in India and suggest measures by which it can be inculcated in contemporary world.

IndexTerms – Havelis, Sustainability, Traditional Architecture.



I. INTRODUCTION

Shekhawati, the pride of Marwari merchants, derived its name from the fabled 15th century Kachhwaha leader Rao Shekha (1433 – 88 CE). It is the untouched part of Rajasthan which is far less known as well as visited compared with other parts of Rajasthan. Depending upon the geographical, political and cultural parameters, Rajasthan is consisted of Aravalli range which runs from northeast to southwest and covers a stretch of 600 kilometers. It divides the state into Eastern and Western Rajasthan. Culturally depending upon language and the previous ruling clan as well the state is divided into zones. There are nine zones in the entire state i.e., Dundhar, Godwad, Hadoti, Marwar, Merwara, Mewar, Mewat-Brij, Shekhawati and Vagad. Shekhawati falls under Dundhar Region which is an offshoot of the Kachhwaha family in Jaipur.

The Shekhawat Rajput's were basically from Jaipur. These at that time were considered as rebels, thus, they were not permitted to construct their dwellings inside the walls of Jaipur. During 18th century, the new master plan of Jaipur was proposed. In that action plan, the leader of Shekhawat Rajputs were given a separate land near Jaipur where they were permitted to make their houses. Later they discovered that the Shekhawati region was on the trade route. Hence, lots of Marwari merchants from the nearby area allured towards Shekhawati. Soon, the area became the source of Business. Till 1822, vast amount of trade was through Shekhawati. But on its later face, the region was having the majority of Marwari merchants who belongs to the business class. The time they realized that now under British rule the source of business might change from the ports of Gujrat to the ports of Calcutta, Mumbai and Madras, they migrated.

The region covers two major districts i.e., Jhunjhunu and Sikar majorly comprising of small towns like in Sikar district, Ramgarh, Fatehpur, Lachhmangarh and Danta. In Jhunjhunu district, Khetri, Nawalgarh, Dhundhlood, Mukundgrah, Mandawa, Mahansar, Pilani, chirawa, Bagar, Alsisar, Bissau and Mandawa. Though architectural features of Churu district to some extent resembles with that of Shekhawati region but due to political administration it is comprised under Bikaner of Western Rajasthan. In Churu district, Ratangarh and Sujangarh have architectural ties with Shekhawati region.

It is very thrilling to know that Shekhawati as a whole was once a home of many leading business and industrial families of modern India. Many great names like the Birlas, poddars, Sarafs, Bajajs, Singhanias, Goenkas, Oswals, have their origins from here. There patrimonial havelis can be found over majorities of which are either locked or is abandoned.

Basically, the concept of havelis have been originated from the Rajput rulers of Rajasthan in the 16th century. The idea was to create grandeur for their courtiers and nobles and to differentiate their dwellings from that of common man. Each and every havelis of the entire Rajasthan has a unique identity which tells the story of his owner, his family, his culture, customs and beliefs. But in the latter half of the 18th century, due to some financial reasons, the patronage of constructing havelis was shifted from Rajput's to the Marwari's better known as Hindu traders. And till the 20th century these traders continued to build the grand mansions for their families.

II. OBJECTIVE –

The objective of the research is –

- To study the urban fabric of Shekhawati formed in space with time.
- To understand the architecture of the old mansions with respect to climatology.
- To study the stylistic study of various building typologies, ornamentations, materials and construction techniques.

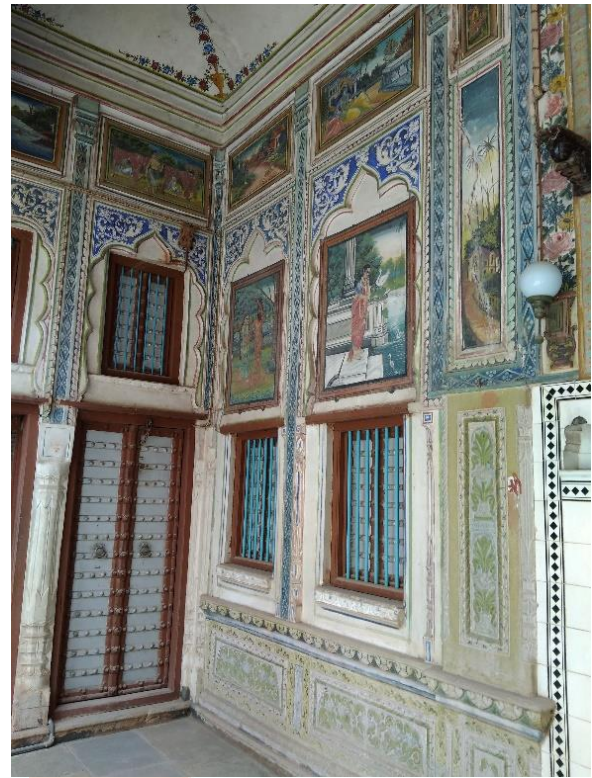
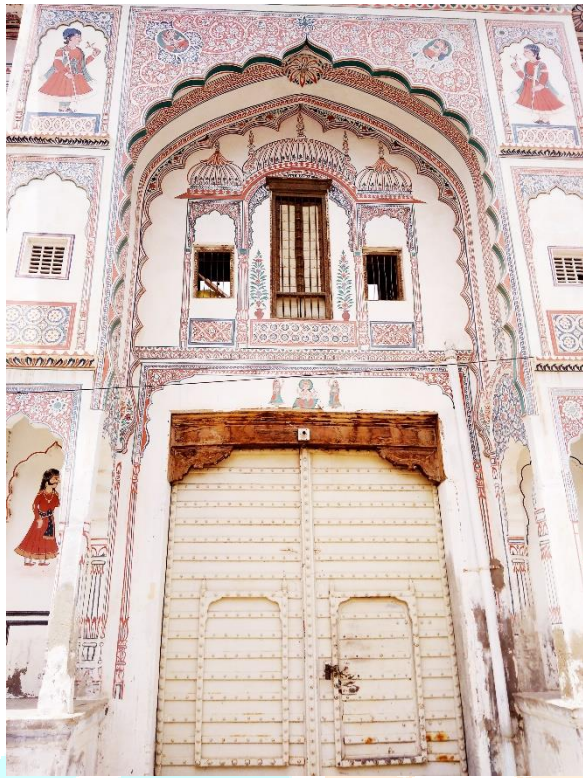
III. ARCHITECTURE OF SHEKHAWATI –

The entire region from architecture typology not only covers residential havelis but also includes forts, temples, and mixed use buildings better known as gaddis which runs parallel along the roads consisting of shops at the lower ground level and residential blocks are designed at upper levels. It not only includes residential and commercial setups in its planning but it also consist of many interactive as well as community structures such as Chhatris, johars, wells, baoris and temples.

The region is dominated by Marwari's who have a very deep religious feelings. They set a quarter of their income for promoting the welfare of others. Hence, in addition to their havelis they have contributed on philanthropic acts as well. Their rich culture and tradition can be found in community buildings as well. Each Shekhawati merchant, as a token of his success, aimed to construct five buildings in his name; a temple to the family deity, a havelis, a memorial chhatri to his father, a caravanserai and a well.

It is really very typical to define a havelis so that it can be distinguished with other structures. Till today it is limited to physical observations. But can be basically understood as a structure with at least one courtyard inculcated at its core and surrounded from all the four sides by built form. There are several elements which needs to be kept in consideration while distinguishing a havelis from other structures i.e., Presence of courtyard, scale of structure, façade embellishments etc. Majority of havelis in the small towns of Jhunjhunu and Sikar have two courtyards with very few consisting of one and three courtyard. But the main towns are consisted up of havelis up to eight courtyard. Size of Haveli and number of courtyards depends upon the status and no. of members in the family.

In architecture, with time there are possibilities of alterations and modifications. The traditional elements of Rajputs in the entire Shekhawati region soon were influenced by colonial architecture. The merchants began to blend the European elements with their traditional elements. In Fatehpur, the havelis constructed after 19th century are the amalgamation of Rajputs architecture with colonial, neo-baroque and Art deco.



Painted Facades of Havelis in Fatehpur, Captured by the Author

IV. WATER ARCHITECTURE OF SHEKHAWATI –

The technology for constructing deep wells was developed in 12th century. It was planned for the development of Shekhawati from impoverished littoral villages edging an impassable desert sea to strategic ports from which trade routes, punctuated by wells, could cross directly to distant kingdoms. A garhi, small fort, provided basic shelter for armed men, horses and camels, its water supplied by a well or, as rain, channeled from every surface into an underground reservoir, kund.

Many of these Chhatris consist of multiple domes, gardens, tanks and shrines. Today, it is very disappointing to know that many of these memorial structures are used as the garbage dumping points by the locals or else are left abandoned. Only very few have been restored in the form of schools and dharmshalas. Rajasthan comes under desert region. Due to scarcity of water there are many water reservoirs in small scales been constructed throughout the region these includes Kuans, Joharas and Baoris.

V. THE PAINTED MURALS –

The paintings depicts the epic tales from Mahabharat and Ramayana, Royal lives of Nobel people, Florals and animal motifs and some erotic paintings in their private rooms. Walls of temples were fully decorated with religious iconography. Adorable pichhwai style paintings are used in many temples in Shekhawati. They painted whatever they saw in and around them.

Soon under British rule, Marwaris started getting migrated from Shekhawati to the Port cities. It was the time when they earned a lot in terms of money, prosperity and ideas. This they well reflected in their patrimonial havelis. Many paintings which were painted in the 19th century depict depicts their interaction with western world. The traditional iconography changed to the western iconography.

VI. MATERIALS AND CONSTRUCTION TECHNOLOGIES –

Shekhawati consist of sandy soil with lack of first class building stone construction materials were locally sourced. Stone is available in only some parts of churu. Therefore, havelis in the entire region are constructed out of bricks and small pieces of stones. The soil consist of a hard impervious layer of clay which is of grayish colour known as dhandhal it is used excessively in the entire region in the form of mortar for binding bricks together.

Being under desert region, the land of Shekhawati is not fertile. Trees like Sagon, Sal, teak etc. which are considered as highly durable in terms of strength are not possible to grow. So, for them the only source of timber was the locally available tree ROHIRA. There is a scarcity of water due to scanty of rainfall. To answering such a harsh weather and temperature, havelis were designed to control light, heat and dust. They used high exterior walls to prevent the heat and dust from being carried inside. Thick walls were used to prevent the penetration of heat inside the inner areas. Courtyards were designed as the center space to let the as much light as needed inside. Also these courtyards acted as a main optimal for ventilation.

In Marwari culture, this method of wall painting is known as the ala gila or arayish. Soon in this technique the masons became professionals. Their masterpieces till today exist. Today these frescos have passed hundreds of years and till today they are holding the charm of havelis. To make these paintings as long durable a special type of construction technique was used.

First Layer	¼ Kali lime	¾ Gravels or Brick dust
Second layer	¼ White Lime	¾ Marble dust
Third Layer	Chhachh	Gur

VII. TYPOLOGY OF HAVELIS –

In Shekhawati havelis have courtyards from one to four. The number of courtyards are directly proportional to the size and wealth of family. It reflects their socio economic status.

One Courtyard Haveli – There are very rare havelis with one courtyard system. In this type of haveli, all the activities are carried in and around the courtyard. There is no as such men or women separate space. There is a concept of centralization with balanced spaces on all the sides of courtyard. The main activity areas of women were not concealed behind.

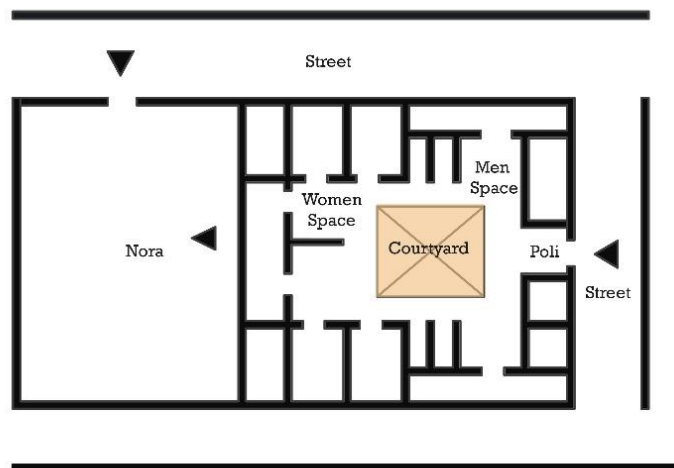
Two Courtyard Haveli – These types of havelis are in abundance. These were actually preferred at that time because it provides flexibility to the spaces and ease the workability. The outer courtyard was reserved for the men and the inner courtyard was for women. These courtyards were the center of activities for both the genders.

Three Courtyard – It is the addition of one courtyard after two which was used by the servants for profane and storage space. The outer courtyard is used by men, the middle by the women and the last by the servants. A polio is designed between any two of the courtyards so as to increase the privacy.

Four Courtyard Haveli – These are the richest and the largest havelis of the town. They are the havelis of the wealthiest merchants amongst all, thus reflects the economic status of the family. Almost all the havelis are the amalgamation of two courtyard havelis placed next to each other.

VIII. CLASSIFICATION OF SPACE –

Here in Shekhawati almost all the spaces were planned based on their belief and rituals. They were very conservative in nature hence, its significance was on their design. Almost all the havelis follows same typology they have different women and men spaces of whose privacy was visually changed and categorized as per the system of beliefs. They has separate indoor as well as outdoor activities assigned to be at a specified norms.



The Nomenclature and basic layout of Havelis with one courtyard planning

IX. RITUALS AND SPACES INSIDE THE HAVELIS –

In the concentric plan of a courtyard type dwelling, the locus of the spatial evolution is the center of the court. This initial center demarcation is evident even in the rural house form of this region that gradually evolved into the single and double court Haveli. The origin of this urban form the rural prototype is evident in the form and etymological roots. Basically, there are two major communities in Shekhawati region i.e., The Muslims and the Marwari's. The marwaris were always on the move from one town to another depending on which Rajput rulers gave them a greater incentive to settle in his town. They were the richest class in the society and one way of showing their exuberance was to possess a number of havelis.

In a typical Hindu dwelling, the fire rituals are performed in the center of the chowk, clearly demarcating it as the heart space. In each haveli, the center or the origin is marked in the center of the court, which can be identified by locating the altar for the fire-rituals performed on various occasions by the family. Thus, it is easy to trace the origin of a multi-court haveli by identifying the main rituals.

X. ACCESS TO THE CENTER – THE ENTRANCE –

The next step after defining the center is marking the entrance or the access. A great significance is given to the entrances to this inner court of the haveli. In single court Havelis, this serves as the main entrance. The local term for the entrance gate is pol from the Sanskrit work prattle and the entrance lobby space is called poli. This lobby space is of two kinds in Marwari haveli – direct or indirect with a baffle wall.

XI. COMPOSING THE HAVELI –

The compositional guidelines, the aedicule's and the elements in the façade are essential components of this architectural language. In the first section the architectural elements the grammar of the haveli facades can be understood by identifying the difference aedicule forms and the rules in placing these forms on the facades and the rules in placing these forms of the façade.

Basic Principles of façade composing –

The haveli facades also conform to the two guiding principles sized in the spatial planning – demarcation of the center and the demarcation of the access i.e., the entrance or the opening. The facades also reflect the concentric development of the haveli plan.

Defining the center –center elevations –

The concept of a center is paramount in all aspects of traditional Indian architecture. The metacentric haveli facades can easily be read by identifying the centers and the sub centers in the facades, which correspond to centers in the plan form. The concentric projections of the inner court elevation show the centric evolution of the court facades.

Rules of proportions of a dwelling and orientation of spaces – The width of plot is used to derive at all subsequent dimensions. Width is considered as the dimension of the plot that faces the road and marks the entrances. The rules on the proportion of a dwelling mention that the length of the dwelling mention that the length of the dwelling should be added with an increase in size by 10 hasta. This indicates that the height of the dwellings should be proportional to the land available. The rules on the proportion of dwelling mention that the length of the dwelling should be 1/5th or 1/10th parts more of the width

($W+W/5$ or $W+W/10$)

XII. UNITS OF MEASUREMENTS –

The measurement systems sin Shekhawati are based on human scales i.e., angula (width of the middle phalange of the middle finger), hasta (length of the arm), first foot and steps. It is interesting to note that the smallest unit of measurement i.e., an angula is located as a central division of an open palm. The applications of these units in terms of simple geometry, modules and proportions responded to the located center of construction, always in responded to the cardinal direction.



XIII. THE RULES OF GRAMMAR –

At every stage the artist will delight in rules, as the master of language delights in grammar, though he may speak without constant reference to the treatise or syntax. A fact that became evident after interviewing a few traditional masons in Shekhawati region. Each mansion carver has its own thumb rules quoted in local language phrase.

XIV. CONCLUSION –

The legendary wall paintings of Shekhawati are as much at risk of loss and disappearance as is its marginalized community of artisans. Murals were once a living tradition of Shekhawati, with entire artisanal families of the chimera's community finding unending patronage among rich merchants who employed them to paint their havelis. With each successful business venture in the cities of Calcutta and Bombay, the Marwari commissioned the construction or expansion of his family haveli, the most tangible symbol of his townsmen. This led to a constant source of employment for the families of artists who sound ready work as each merchant allocated part of his earnings towards building his family haveli and philanthropic works of constructing chhatris, wells, johars, schools and dharmshalas in his native town.

Another aspect of the vulnerability of historic buildings is the transformation in lifestyle patterns over the decades. The original planning of the traditional residences was based on the joint family, with the courtyard as the nucleus of family life. This courtyard was the stage for family gatherings, pujas, festivals and marriages as well as for domestic chores, forming the central core of the haveli. Dry latrines in the naal, a narrow passage to the side of the haveli, preceded the concept of unsuited bathrooms. (Cooper, 2012)

Over time and generations of subdivision, havelis have been split amongst family factions and the courtyard is softly partitioned off with a wall. Rapidly transforming living standards have resulted in the need for a suite bathrooms, air conditioners, modern plumbing and cable TV. The introduction of electric and plumbing services is mostly carried out by untrained local contractors, with scant regard to the historic fabric, resulting in as hic electric routing crisscrossing over painted walls. As toilets are added to serve the legitimate needs of the occupants, there is an ad hoc addition of plumbing which often takes the shortest route to the drains lining the street, resulting in an ugly mess of waste pipes and toilet blocks jutting out of historic facades as most toilets drains directly on to the one storm water drains lining the street outside.

Open drains and sewers are the bane of most of the historic towns of Shekhawati, and a rainy day in Fatehpur or mandawa entails a public health nightmare with flooded streets, overflowing drains, waterlogged neighborhoods and a virtual seizure of civic services. Waterlogging due to poor civic drainage has resulted in constant rising damp in heritage buildings, with groundwater percolation leading to loss of exterior plasters along the base of most historic walls. Not only has this resulted in loss of painted fabric and original plasters, but well-meaning repair work without skilled conservation knowledge has often led to the irreparable loss of historic wall – paintings as the traditional natural and mineral pigments are painted over in bright modern paint, or lime stucco walls damaged by rising damp are plastered over in cement or covered in granite.

XV. ACKNOWLEDGMENT

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