
EVOLUTION AND TRANSFORMATION OF COURTYARDS THROUGH SPACE AND TIME: A CASE OF INDIAN COURTYARDS

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Abstract: Courtyards have been prevalent ever since the concept of shelter evolved from the Neolithic period. It found a place for itself in traditional housing regardless of the climate in that particular region. The motive of this transitional space varied in accordance to the region of usage in terms of various factors. Although there were variations, the basic essence of a courtyard and the purpose of it has remained the same over time. The transition of a courtyard from a global level to its counterpart in Kerala, in terms of the region of usage will be discussed in brief in this paper. The mere fact that courtyards have existed for a long period of time, is a proof of its sustainable nature. But due to various reasons, courtyards are no longer used extensively in India. This paper intends to elucidate the decline in the usage of these traditional, aesthetically pleasing and well formed voids in the modern Indian context where more preference is given to modern technology to combat climate related issues.

Keywords: Chinese Courtyards, Indus Valley Civilization, Nadumuttam, Nalukettu.

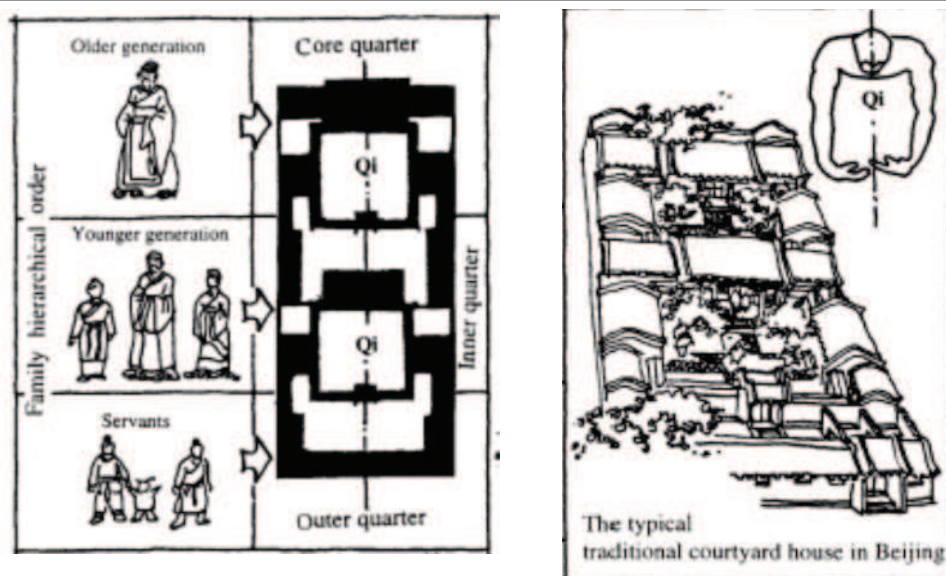
Introduction: Ever since the growth of industrialization and modernization, all facets of life have been affected including architecture. It has almost led to the demise of traditional architecture (Samadi, 2013). There is a need to revive and understand traditional architecture and the elements involved. One such element is the courtyard. A courtyard can be defined as an open to sky enclosure which is surrounded by walls. The idea of courtyard housing was conceived during a period when indigenous techniques were the only way to make a house climate responsive. But nowadays, due to globalization, modernization and various other factors, there is a decline in the usage of this traditional element. History bears evidence to the fact that the relationship between humans and nature is important. The future is in living and working with nature rather than against it (Vyas, 2005).

Understanding the Relevance of Courtyards: The courtyard form has been prevalent all over the world and it has evolved from the nomadic tribes or the fenced compound dwellings of the first agrarian communities (Hinrichs, 1989). The four ancient urban civilizations of Mesopotamia, the Indus Valley, China and Egypt indicate that the courtyard form is

timeless in the history of architecture (Sthapak and Bandyopadhyay, 2014).

Chinese Courtyards: In the olden days, most Chinese houses were built in a similar manner but the typology of house varied. So a courtyard dwelling was one amongst the many traditional houses, in China. The form of a courtyard dwelling was not selected as an ideal form by coincidence. In terms of its characteristics, it established to be more suitable than other vernacular housing since it adapted to the needs of the natural environment. The growth of a courtyard dwelling was predominantly dictated by the climate and culture (Liu and Awotona, n.d). What started off as resilience against climatic conditions, later evolved under the influence of ideology observed by the native people.

Chinese philosophy which comprises of Confucianism and Daoism exists in traditional Chinese courtyard house. The qualities of Confucian architectonics emphasized the importance of hierarchical order, axis and symmetry to control spatial organizations (Needham, 1971). As per Feng shui, the basic courtyard form is a representation of the universe and an ideal container of Qi, which is a reflection of the cosmos of heaven and earth.



Source: The Traditional Courtyard House in China: Its Formation and Transition- Ying Liu and Adenrele Awotona

Table 1. Characteristics of a Chinese Courtyard

TYPE OF COURTYARD	SHAPE	CLIMATIC INFLUENCE	
CHINESE COURTYARD	SQUARE RECTANGLE	USED TO COMBAT COLD CLIMATE. OBTAINED SUFFICIENT SOLAR ACCESS THROUGH COURTYARDS MODIFIES MICRO CLIMATE FACILITATES VENTILATION AND HEAT DISTRIBUTION	
	AXIAL AND SYMMETRICAL TO REFLECT FAMILY HEIRARCHIAL NATURE		
	NO. OF COURTYARDS	RELIGIOUS IMPLICATIONS	ACTIVITIES INVOLVED
	COURTYARD PER HOUSING UNIT	CONSIDERED TO BE A REPRESENTATION OF THE UNIVERSE	GARDENING, INTERACTIVE SPACE FOR FAMILY MEMBERS, CHILDREN'S PLAYGROUND

Source: Author

Indus Valley Civilization: The design of the cities Harappa and Mohenjodaro shows the efficiency of the strategies used while planning. A lot of thought has been put in every minute detail while planning these cities. A typical Harappan house adapts to the local conditions and intuitively produced architecture eminently suited to the climate. The house was planned as a series of rooms opening into a central courtyard. It served several purposes like lighting the rooms, acting as a heat absorber in the summer and radiator in the winter. It also provided an open space inside for community activities. Activities like cooking and weaving took place during summer. The courtyard remained inconspicuous when seen from the main entrance. Lack of openings towards the main street guaranteed the privacy and oneness of the residents. In fact, the only openings in the houses are quite small – this was done to prevent the hot summer sun from heating the insides of the houses. So the prevalence of courtyard dwellings within these cities, in the absence of technology again provides

ample evidence in terms of its versatility and longevity (Nangia, 2000).

The courtyard house served as an urban as well as rural prototype which went on to be mimicked and spread to other regions.

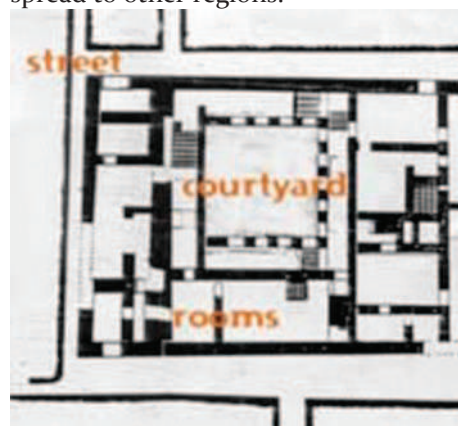
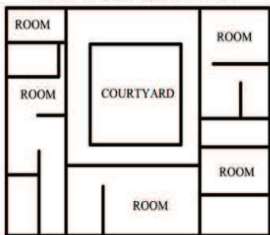


Figure 3. A Courtyard House in the Indus Valley Civilization

Source: Nangia, A 2000, The Indus Valley Civilization: Images from Antiquity, <http://www.boloji.com/index.cfm?md=Content&sd=Articles&ArticleID=892>

Table 2. Characteristics of a Courtyard in Indus Valley Civilization

	SHAPE		CLIMATIC INFLUENCE	
	SQUARE RECTANGLE		HOUSES HAD NO WINDOWS FACING THE STREET; CONCENTRATED ON COURTYARDS	
	NO. OF COURTYARDS	RELIGIOUS IMPLICATIONS	ACTIVITIES INVOLVED	
	CENTRAL COURTYARD	FOCAL POINT IN THE HOUSE	COOKING, WEAVING COMMUNITY ACTIVITIES	

Source: Author

Courtyards in the Indian Context: In India, courtyards act as central transitional spaces around which most day to day activities revolve. Its prominence as an architectural style is negligible over here. It is the heart of a house which unites the residents and brings a sense of oneness. This well-formed void is known by various names when it crosses the border of different states- Havelis in Rajasthan, Wada in Maharashtra, Nalukettu in Kerala and Chettinadu in Tamil Nadu.


As per Hindu beliefs, Sri Chakra is considered to be a sphere of thought, a consecrated ground, an arena for play and thoughts and an instrument that inspires feelings and forces inside and outside. It is employed to stimulate thoughts, activate energy, harmonize feelings and synchronize inner and outer forces. In a metaphorical sense, a courtyard also aspires to do the same.



Figure 4. Sri Chakra

Source: <http://tap3x.net/EMBTI/j4selfcc.html>

Table 3. Characteristics of a Rajasthani Courtyard

	SHAPE		CLIMATIC INFLUENCE	
	SQUARE RECTANGLE		HOT AND DRY CLIMATE: HOUSES ARE PLACED BACK TO BACK TO AVOID HARSH SUNLIGHT, SO COURTYARD SERVES AS A SOURCE OF LIGHT.	
	NO. OF COURTYARDS	RELIGIOUS IMPLICATIONS	ACTIVITIES INVOLVED	
	GENERALLY 1. CAN GO UPTO 2 IN HAVELIS	CONSIDERED AS A SPATIAL SYMBOL OF INWARDNESS AND FEMINITY	LIVING AREA FOR ALL DOMESTIC ARCHITECTURE, SLEEPING DURING WINTERS, OPEN SPACE OR COMMUNITY ACTIVITIES	

Source: Author

Nadumuttam: Courtyard in a Nalukettu: A courtyard house in Kerala is referred to as Nalukettu. In the olden days, Nalukettus were constructed only by Brahmins, landlords and the royal family who possessed surplus land. So the construction of courtyard houses was confined within the wealthy people and not commoners.

There is variation in the morphology of courtyards in North Kerala and South Kerala. Variations can be

noticed in terms of spatial organization, size and usage. In North and Central Kerala, concentric arrangements are followed unlike South Kerala. In South Kerala spatial division is not done on the basis of strict concentric arrangements. In South Kerala, the nalukettu comprises of an extensive single hall with a courtyard-like opening in the interior whereas the North Kerala nalukettu has a concentric sala(hall) which is multiplied, encircling the courtyard. In

terms of size, in North and Central Kerala, the courtyard is wide and is used for various activities, but in South Kerala, the courtyard is smaller in comparison and works better as a water cistern. The activities in South Kerala's nalukettu are usually in the open hall in the courtyard to encourage openness and circulation. In North and Central Kerala, the spaces around the courtyard work as a pathway that

leads to the four-hall rooms. Several functions take place in a typical North and Central Kerala courtyard. The central space acts as a multipurpose space such as a place for drying rice, garden, or children's playground. On the other hand, in South Kerala, these spaces around the courtyard act as living spaces (Susilo).



Figure 5. Courtyard within a Nalukettu

Source: Susilo, I (n.d), The Living Culture and Typo-Morphology of Vernacular-Traditional Houses in Kerala

The court is the heart of the house, where different functions can take place during different parts of the day. This "outdoor room" can be used as an extension of the kitchen during mornings or as an extension of the living room during evenings to entertain guests (Sthapak and Bandyopadhyay, 2014). In most houses, courtyard serves as means of interaction among the family members. It is a place where several activities are held. It not only acts as a small interactive space to a family, but also caters to functions where a large number of people are involved. This central void is a source of connectivity onto which family activities spill out, but there is no invasion of privacy from the outside world.

There are no restrictions regarding the number of courtyards that can be used in a house. When there are two courtyards within a dwelling, then it is called an ettukettu and a nalukettu with four courtyards is called patinyarukettu.

The courtyard planning decreases interior-exterior connections but increases interior connections; they maximized interior relationships and openness while keeping the outside separate. Courtyards help to create an interior space while respecting privacy values of the culture by having no exterior or street view from the courtyard itself (Sthapak and Bandyopadhyay, 2014).

Table 4. Characteristics of a Nalukettu

NALUKETTU	CLIMATIC INFLUENCE	
	SHAPE	CLIMATIC INFLUENCE
	SQUARE RECTANGLE	WARM AND HUMID CLIMATE- REQUIRES CONSTANT AIR MOVEMENT TO COMBAT HUMIDITY: COURTYARD PROVIDES CONTINUOUS AIR FLOW
	NO. OF COURTYARDS	RELIGIOUS IMPLICATIONS
	DEPENDING ON SPATIAL EXPANSION, IT CAN GO UPTO 4 COURTYARDS	CONGREGATION FOR RELIGIOUS FESTIVALS
		ACTIVITIES INVOLVED
		PLACE FOR DRYING RICE CHILDREN'S PLAYGROUND WATER CISTERN GARDEN

Source: Author

Current Scenario of Open to Sky Spaces in India: Nowadays, most people prefer to stay in apartments than individual houses. Open to sky spaces add life to a house and make it less claustrophobic, especially for people who belong to the lower income group

(Charles Correa, 1996). So in order to bring a similar kind of milieu, architects incorporate courtyards within apartment premises. They are either in the form of clusters which share a courtyard or individual terraces in a residential building. Example: Jeevan

Bima Nagar Bangalore (Figure 7). An example of the former would be Sheikh Sarai Housing in Delhi, which is designed by Architect Raj Rewal. The architect has tried to create a balance between open and closed spaces. The scale of the courtyards is adjusted to serve various community functions. By

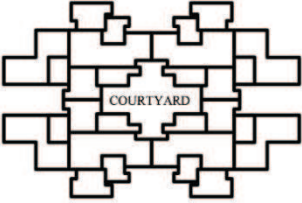
integrating courtyards, the architect has included traditional elements which create a sense of belonging to the residents staying over there. In this case, every dwelling is a private domain but the nature of privacy varies since the courtyard is being shared by several clusters (Rapoport, 2007)



Figure 7. Individual Terrace gardens in Jeevan Bima Nagar, Borivili

Source: Rajendran, S 2012, A place in the shade, <http://terrainseeker.blogspot.in/2012/09/a-place-in-shade.html>

Table 5. Characteristics of Sheikh Sarai Housing

TYPE OF COURTYARD	SHAPE	CLIMATIC INFLUENCE
SHEIKH SARAI HOUSING 	SQUARE- VARIES AS PER THE SCALE	HOT AND DRY CLIMATE: HOUSES ARE PLACED BACK TO BACK TO AVOID HARSH SUNLIGHT, SO COURTYARD SERVES AS A SOURCE OF LIGHT AND VENTILATION.
	ACTIVITIES INVOLVED	
	INTERACTIVE SPACE FOR RESIDENTS PEDESTRIAN CIRCULATION	

Source: Author

Conclusion: With the increase in land value, it becomes difficult to afford such vast spaces which are required for a courtyard house. So implementing terrace gardens or individual gardens in apartments is one such replacement for courtyards.

Earlier, when the system of joint family prevailed, most gatherings took place in the courtyard. It was an interactive space which united people. Nowadays, with the emergence of nuclear families such vast

spaces are not utilized to a great extent. People opt to interact at convention centers or auditoriums during functions.

In today's fast paced world, it becomes difficult to maintain such huge spaces. But for the charm and privacy that a courtyard offers, one could consider bringing back courtyards as a part of housing or implementing open light wells which can be maintained easily.

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