

# Study of Architecture and Planning of Jaipur City in context with Vastushastra.

**Prof. Vrushali .V.Toraskar**

*Assistant Professor, Department of Architecture,  
D.Y.Patil College of Engineering and Technology,  
Kolhapur ,Maharashtra, India.*

**Prof. Gouri .A. Mhetar .**

*Assistant Professor, Department of Architecture,  
D.Y.Patil College of Engineering and Technology,  
Kolhapur ,Maharashtra, India*

**Prof. Manorama.R.Patil**

*Assistant Professor, College of Architecture,  
S.P.S.M.B.H S,  
Kolhapur ,Maharashtra, India*

## Abstract

This paper presents the study of architecture and planning of jaipur city in context with the vastushastra. There are two types of knowledge in Ancient Indian sages. One is jnana (knowledge of metaphysics) and the other is Vijnana (knowledge of physical sciences). Both have importance in formulation of vastushastra. It is the science of direction, movements and architecture that combines all five elements of nature and balance them with the man and material. Vastu Shastra, the ancient Indian science of town planning and architecture, aimed at achieving a balance among functionality, bioclimatic design, religious and cultural beliefs (Ananth, 1998). . Presently, Vastu is largely regarded as a pseudo-science, as its theories are based on a complex system of philosophy, astrology, intuition and superstition. They can only be partly explained by modern scientific principles. But we feel this is a rather pessimistic view towards the whole subject, and this ancient science might deserve more positive attention than merely calling it backward, ancient and superstitious. Therefore, our research aim is to analyse the structure of cities designed according to Vastu, doing case study of jaipur.

**Keywords:** architecture , planning, vastushastra, jaipur.

## Introduction

‘Vastu is the art of living in harmony with the land, such that one derives the greatest benefits and prosperity from being in perfect equilibrium with Nature ’(Acharya, 1981, p.14). “Vastu Shastra is a highly refined method of creating a living space which is a miniature replica of the cosmos as perceived by the Vedas . It is about emulating the attributes of the cosmic space, about bringing the divine sentinels of cosmic directions into our

homes, about creating harmony by creating a living environment where the forces of nature are balanced and at peace with each other”(Gupta, 1995, p.20). The metaphysical and philosophical nature of Vastu Shastra was rooted since the ancient times and had a significant importance in the Indian way of living. For centuries, Indian people relied on Vastu Shastra to design cities and settlements, build homes, temples, and palaces. Historically, it has had great contribution towards the environmental design and town planning of many cities that still flourish even today.

## Ideologies and principles of Vastu Shastra

In Vastu Shastra, the under structure of any design concept emerged out from a philosophic frame of the phenomena of Existence, Space and Time. The phenomenon of Existence is underpinned by the philosophy that all things and their existence are inter-connected. So, the existence of one affects the other. The phenomenon of Space is conceptualized as a dynamic element made of energy particles, wherein the main aim is to create an environment that is in harmony with this subtle energy; and lastly, the ‘notion of Time with regard to cosmos and human life have been explained to coalesce all processes and movements of the universe’(Parikh, 2008, p.28). Based on these ideologies, the built form was designed to be in harmony with the forces of the universe.

The interaction between the three basic phenomena of Existence, Space and Time were also considered to be deeply rooted in the way of life and moral values of the Indian people. According to Parikh (2008, p.47) ‘every action of the people reveals their response to the Hindu philosophy based on the interaction of these basic phenomena’. This makes it clear that the spatial organizational principles of Vastu Shastra ensured that the design of physical spaces responded to the cultural values

and way of life of the people. Through literature and experts, it can be gathered that, these spatial organizational principles, based on the interaction of the three phenomena, can be expressed through four key concepts; that informed layout and consequently, the structure of cities (Parikh, 2008; Danielou, 1964; Radhakrishnan, 1951; Vatsyayan, 1991):

**Co-existence of systems and relative wholeness:** Stemming from the individual identity of the underlying ideologies and their seamless continuity, Vastu believes that the components of the physical environment also needs to be complete entities in their context; creating individual centres in continuum wherein each centre is defined by several other sub-centres. This again contains smaller sub-centres, each connected to one another in order to reflect the order of the cosmos. Thus, connectivity and relative wholeness become one of its organizational principles and was applied by the use of Vastu Purusha Mandala<sup>3</sup> (Figure 1a). In Hindu literature where the relationship between the Mandala and urban planning is explored, it is suggested that the sacred geometry of the Mandala is essential to establish a secure claim within an active landscape.

**Individuality within a group:** As much as all forms of existence and space can be understood in terms of a system of concentric wholes, centres and sub-centres, each of them have a degree of centeredness; implying independent identities. 'They have their own regulating systems and specific characteristics that are different from others and make an individual statement' (Parikh, 2008, p.55). But, no matter how distinct, each element forms a part of each other. The underlying meaning in terms of Vastu Shastra therefore implies how individual buildings or parts of a larger city, even though having an independent identity, need to coexist harmoniously in order to contribute to the overall greater identity of the town or city; making it another of its key organizational principles.

**Coexistence of extremes and celebration of junctures:** All conceptions of Space and Existence are based on the principle of bipolar manifestation, wherein the extremes are considered to be merely different aspects of the same phenomenon, working in a intercommunicative unity and forming a continuum over Time. One is dependent on the other for its existence and effectiveness. Maintaining a balance between the extremes was considered crucial for all aspects of life, including built form. Since Space was believed to be made of energy, this coexistence related to the five kinds of energies namely, ether, air fire, water and earth - the 'Panchbhootas'. The perfect environment according to Vastu is one where there is a balance of all the energies enhancing mutual existence. This unification of relationships between extremes in the built environment automatically

puts a lot of importance to the design of transitions, junctures and thresholds. 4. Timelessness of space: As per the experts, Vastu believes in the concept of multi-layering of Time reflected in the Space as changes within a spatial frame, where the 'resultant space evolves its independent identity though carrying the shadows of the original one' (Parikh, 2008, p.67). This concludes adaptability of space with layering of time as one of the organizational principles. This principle works in conjunction with the Vastu belief of being sensitive to the natural context and using the resources of the area sustainably in order to be in tune with the space time continuum

#### **Jaipur city**

Sawai Jai Singh laid the foundation of his new Capital City in 1727 A.D. and named it as 'Sawai Jaipur'. It was also known as 'Sawai Jainagar' which later on became popular as 'Jaipur'. With the foundation of Jaipur, and eventual transfer of Capital of the Kachhwahas from Amber, the City rose to eminence that has led it to become one of the best known cities of the contemporary world. The establishment of a new Capital City could be justified by two plausible factors - the political dominance which the State of Amber had already acquired in erstwhile Rajputana under the patronage of the Mughal rulers, and the need for an environment that would be suitable as the new Capital of the State. Amber had served as the Capital of

Dhoondhar for about six centuries and the Kachhwahas had gained considerable significance during the Mughal period. Though, by the beginning of 18<sup>th</sup> Century Amber had expanded, having narrow streets" it had become very congested. There was not much scope for further expansion on the existing hilly terrain. To cater the needs of the grown

up State, Sawai Jai Singh chose to build an entirely new city", devoid of the shortcomings of the Amber as a Capital City. The influence of Amber State extended up to Bundi in the south and this provided the south side of Amber with sufficient security for Sawai Jai Singh to affect the shift of his Capital from Amber to a new site in the vast plains south of hills of Amber. The historic Agra-Ajmer highway emerging from the Purana-Ghat or Ghat-Ki-Guni acted as the southern edge of the walled town of Jaipur.

#### **Foundation**

The foundation of Jaipur was too an outcome of new economic dimensions. The earlier Capitals of Kachhwahas i.e. Dausa and Amber contain remains

of second outer wall surrounding the fields beyond the city walls including the agricultural land, thus indicating the agrarian base of the society. There was a significant economic shift from an agriculture base to trading when the Capital was shifted from Dausa and Amber to Jaipur. The foundation of Jaipur was not spontaneous but it was a planned one and constructed in many successive stages as proved by the contemporary documents<sup>^</sup> and some old maps and plans prepared for planning the City and its environs, out of which many survive still today'. The Maharaja had collected many prints, maps and printed literature from all over the world and after consulting and discussing with his associates and architects he planned his City"<sup>^</sup>. The position for the new Capital was so located as to connect it with the Amber fort by the hill range of 'Kali-Khoh', at the apex of whose Sawai Jai Singh built Sudarshangarh (Nahargarh Fort) which commanded his new Capital.

### Architectural History of Jaipur

Vaastu is a science of common understanding based on experience and experimentation wherein both the theoretical and the practical aspects of knowledge are embodied together with instinctive problem solving. Jaipur is considered by many urbanists to be one of the best planned cities. In an era when most of the Rajputs were busy fighting with each other, the Jaipur's kings diplomatically broadened their control sphere maintaining good relations with the Mughals. The King consulted several books on architecture and architects before making the layout of Jaipur. Jaipur city designed by architect Vidyadhar Bhattacharya as per Vastu Shastra "Hindu architecture". Jaipur is full of famous forts, enchanting palaces and lovely temples.

The construction of the city started in 1727. It took around 4 years to complete the major palaces, roads and square. The city was built following the principles of Shilpa Shastra, the Indian Architecture. Huge fortification walls were made along with seven strong gates. For the time, architecture of the town was very advanced and certainly the best in Indian subcontinent. In 1853, Prince of Wales visited Jaipur; the whole city was painted pink to welcome him. Today, avenues remain painted in pink; provide a distinctive appearance to the city.

### Application of Vastu principles in Jaipur

The principles of being sensitive to the natural context and its natural resources to guide the urban form can be seen in the city of Jaipur as well (Figure 2a). As per the experts, the land being flat,

the layout of the streets is fairly regular and their orientation is in accordance to the 'prevalent winds and light of the sun and moon' to ensure the 'purity of streets' (Acharya, 1981, p.45). The dimensions and form of the Mandala can also be seen to have been affected by the presence of natural features like hills, woodlands and lakes within the site.

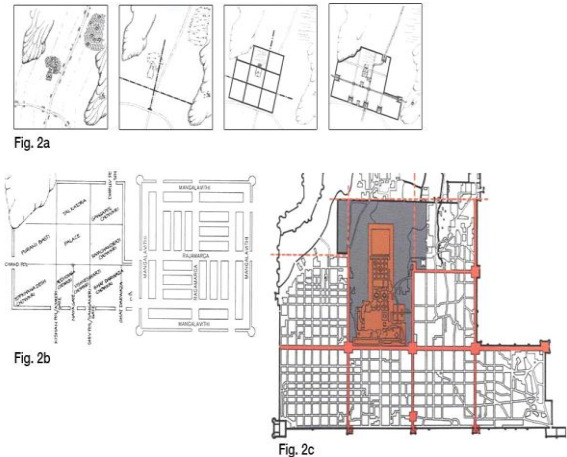


Figure 2a-c: (a) The site for Jaipur with its natural features, ascertaining of the cardinal direction, overlaying of Mandala and modification of Mandala to accommodate the natural features; (b) Individual wards or Chawkris of Jaipur given a specific name akin to their identity and streets given specific names according to their functions (Source: Sachdev, 2002); (c) City of Jaipur, where the superimposed Mandala is divided and subdivided by the street layout to form a hierarchy of wards, neighbourhoods, blocks, and individual buildings, each being a whole yet part of a larger whole. (Source: Parikh, 2008)

A structure of relative wholeness is observed in the planning of the city of Jaipur. Jaipur was divided into nine squares (Paramasiya Mandala) by streets, creating large city wards (Sachdev, 2002). These were then divided into neighbourhoods made up of cluster of houses that led to individual houses. The buildings were designed as a set of rooms around a courtyard, which was the centre of all activities. Thus the whole city was designed in terms of 'cells within a set of cells' (ibid). All individual units were whole yet linked to the larger whole by the network of streets and open spaces. This connected spatial network was in response to the Vastu principle that it is essential to maintain 'satatya' or continuum in the 'anukram' or hierarchy of streets and open spaces in accordance to how the supreme creator has made the universe where all things are connected to one another. According to Vastu expert Arun Naik, just as each individual God is given their own identity and recognition in the Mandala; Jaipur's urban form considers the distribution of landmark elements like the temple, palace, and city gateways to ensure individuality in the overall city fabric. They not only served as landmark in themselves but also gave a distinctive character to the areas around. Most of them were overlaid with religious and spiritual meaning to ensure that they were respected by the generations. The same was done in the city of Madurai through

the use of Gopurams<sup>5</sup>. Individual wards or 'chawkris' were given specific names akin to their identity. Similar to the city of Madurai, often they were named suggestive of the kind of activity that the street or open space was associated with, and by extension in relation to the occupation or trade that the community was associated with within a particular part of the city. It should be noted the Vastu principles were applicable at all scales ranging from the city's spatial network to the detailed design of streetscape, buildings and architecture. However, for the purposes of this paper we are more concerned with the application of Vastu on shaping of the city's overall spatial network.

### **Conclusion**

Unlike many historic towns in the world, Jaipur is functioning well in present urban context. Without losing importance; these spatial structure have sustained many cultural, social and economic changes. And this proves the robustness and resilience of these age-old systems. The study also reveals, that in the city, land use, caste, professions were organised and distributed along streets that provided the best affordance for it. It is evident, streets played important role in building a sense of community and creating unique identity of a place. Even architecture and townscape of key streets was given special importance such as in the case of Jaipur, to develop a coherent image of the city. The paper does not encourage application of Vastu principles without questioning them; it only tries to ensure that we do not ignore the ancient knowledge, as it has been enriched by trial and errors over ages.

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