

APPLICATION OF ARCHITECTURAL AND ENGINEERING IN MODERN PRACTICE

Manoj Jain

Department of Architecture

Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India

ABSTRACT:

Draftsmen and Engineers from Ancient India has inferred standards of development and design dependent on experience, perception of common marvels and thinking about social and social part of India. These standards are pointed toward creating assembled climate which is viable for the occupants and removing most extreme advantages from nature. Different legends are winning with respect to certain standards which prompts offbeat conduct among individuals. These standards can be all around clarified utilizing the advanced logical rationale and information. Logical investigation of these standards ought to be done and they ought to be applied in contemporary practice. This examination endeavors to investigate essential standards of Indian design and designing dependent on Vastu Shastra (the old Indian structure science) messages, for example, Mayamattam, Samarangana Sutradhar, and so forth an endeavor is made to give logical explanation of certain rules that can be embraced in present day practice of planning and development effectively for solace and joy of occupant.

KEYWORDS: *Ancient, India, Vastu Shastra, Vastu Vidhya, Practice.*

INTRODUCTION

Specialty of design and development in old Indian writings is called Vastu Vidhya. Grand landmarks in India are commendable instances of Vastu Vidhya which speak to its development structural and development strategies. Strategy of development of these landmarks speaks to concordance of design with climate, customs and way of life of individuals of India[1].

There are such countless writings composed for standards of development and design extensively, called Vastu Shastra. The subject of Vastu Sastra had been thoroughly managed across different old writings covering assorted subjects of writing. It goes from Vedic writing to Agamas, Puranas, Sutras, Samhitas, Epics and different Treatises. Because of impact of Mughal rule and struggle between conditions of north India Vastu writings were devastated so messages written in south India are considered as essential writing. There messages like Mayamatam said to be composed by sage Mayamuni, Samarangana Sutradhara of Bhojadeva

and Aparajita prccha are the significant specialized compositions containing elaborate portrayals on the parts of design and designing[2].

The term Vastu was initially gotten from the root word vas, which means to abide or a home. The term Vastu infers a human settlement or a spot where more than one family unit lives. Entire universe including our body is made out of five fundamental components Air, Earth, Fire, Space and Water called "Panch Mahabhoot". The primary guideline of Vastu is to keep up the harmony between abiding/structure and the components of universe for bliss and solace. Vastu is the study of heading that consolidates all the five components of nature and offsets them with the man and the material [3].The key standards of Vastu Shastra are applied in developing structures, for example, private structures, business buildings, industry designs, towns, sanctuaries, and so on There are five fundamental standards on which the extraordinary structure of the Vastu study of design stands. They are: (1) Examination and Selection of Site: - Bhu Pariksha. (2) Orientation: - Dik Nirnaya. (3) Planning of different segment: - Padavinyasa (Vastu Purusha Mandala) (4) Proportion and Measurement of building: - Manna and Ayadi. (5) The feel of the structure: - Bhulambamana or Chanada.

Vastu intends to abide and Vidya implies science. Along these lines, Vastu Vidya is the consecrated science identified with planning and building houses. Vastu is established in Vedic way of thinking, which arose around 4500 years back. Vastu intends to adjust [4]between the home (the microcosm) and the universe (the cosmos), bringing wellbeing, abundance, and bliss. As indicated by Vastu, the outside and the inner are tradable for the fundamental energies that administer the components, for example, wind or fire, which are equivalent to those that control the organs of the human body. Anyway in late occasions, the fundamental association between the two has been failed to remember, present day humanity has separated itself from the key powers that oversee the universe. As a result the general public has gotten dissipated and anxious, distanced from the regular world. The bedlam in and decimation of the world's fragile eco-framework and the quick annihilation of species are appearances of this division.

These standards depend on development of heavenly components like planets, Sun, Moon and their impacts on climate, speed and bearing of wind precipitation volume and force and normal for soil[5]. These standards are additionally inferred based on exceptional qualities and impacts of components of universe, for example, the attractive field, gravitational impact of Earth and Galaxies in sky, light and warmth of Sun including the impacts of its bright and infra-red beams, and so forth. It reflects Indian way of thinking of life and between connection among human and climate. It additionally incorporates the craft of inside planning and embellishment regarding the five common components.

BhuPariksha: It is novel technique for testing the site, before it is chosen for the development. The dirt must be inspected for its shape, form, scent, shading, taste and contact.

DikNirnaya: According to Indian writings of design, the cardinal bearings hold a specific criticalness. The different affiliations are given to the eight cardinal headings. Fundamental

point in direction standards of Vastu Shastra is setting of design and its parts of so that they may get greatest advantages from sun oriented radiation and wind.

Padavinyasa: It comprises numerical and diagrammatic reason for creating plan. Purusha alludes to energy, force, soul or vast man. Mandala is the nonexclusive name for any arrangement or graph which emblematically speaks to the universe. Padavinyasa is the cycle wherein the site is partitioned into different quantities of squares. The quantity of squares changes from Single Square (1x1 network) to 32x32 (1084) squares relying on kind of development, where each square is alluded to be as Padas[6]. Most basic mandala is appeared. Pada – gods are appointed to the partitioned squares and are named after the god allotted. It characterizes stable underlying framework for development. Divinities can be considered as segment of nature or regulator of specific characteristic part of marvels according to antiquated Indian idea. Plan of divinity is in a roundabout way demonstrates the part of specific segment. It guides us to plan movement drafting in the house. For instance area of Agni (God of Fire) is in South - East bearing shows plan of human movement Vastu Purusha Mandala The graph is separated into $9 \times 9 = 81$ sections. The places of the 45 divine beings who are holding down the Vastu Purusha are appeared. (32 are in the outside nooks and 13 are in the inside walled in areas). These representative Gods rule different parts of life and have certain innate characteristics. Identified with fire perspective ought to be done toward that path for example kitchen to be given in South – East course. This arrangement of isolating the ground plan helps the planners in computing the extent of the various pieces of the structure.

*Mana and Ayadi:*Maana endorses the proportionate estimations. The estimations are partitioned into classifications, for example, estimation of stature, broadness, width or perimeter, estimation along plumb lines, estimation of thickness and estimation of between spaces. Ayadi recommends accuracy of extent and size of various parts. Aayadi standards are valuable for ascertaining extent and size of various parts, standards of proportion of breath and length, stature and length, and so forth.

Chanada: Chanda signifies 'Excellence'. So Chanda is the excellence viewpoint or style of structures. Chanda in Vastu in a real sense implies a perspective on the construction against the sky, for example its viewpoint see. According to old Indian design rise of structures is built dependent on capacity of building.

Benefits of Vastu Shastra

1. *Help from Discomfort:*Vaastu-Shastra can be utilized for better solace. The distresses inferable from the disappointments and the subsequent emotions can be overseen by figuring out how to feel comfort in the correct manner. Vastu can unquestionably give individuals [7]with the scholarly help and the solace they need at the point when they are attempting to get over some chronic sickness or troublesome time.

2. *Inward disquiet:* Existing things in a structure can be adjusted by VastuShastra. One should insight to figure it out the positivity due to appropriately considered changes following Vastu

Shastra. It is a satisfactory and extraordinary exercise that can instruct individuals a ton about their internal strength [8]and how the same can be raised to an alternate level. Satisfactory and appropriate external spaces are expected to study the internal space in one's life, and to have a lovely and positive physical climate.

3. *The lift of inward force:* VastuShastra is the novel furthermore, bona fide science to guarantee an agreeable life both by physical and emotional wellness, for the living individuals inside a building or an encased space. Cases and conditions where there is no collaboration between the assembled and unbuilt spaces with inward space is reflected in the exhibitions of individuals who possess such places and even vegetation that exist there. The strength of the substantial and the otherworldly world are managed in VastuShastra, which one can learn and acknowledge when adopted.

4. *Improve the relationship with individuals:* The tranquility inside a structure improves the relationship among the individuals living inside and this is conceivable by VastuShastra.

5. *Upgrade of profound information:* The interest furthermore, hence information about the start and end of life furthermore,[9] otherworldliness can be improved by legitimate work of VastuShastra standards/directs.

6. *Accessibility of Air and Light:* The fundamental necessities of the occupants of the house are the plentiful measure of air, light, and so forth, inside the house.

7. *Upgrade of profound information:* The interest furthermore, hence information about the start and end of life furthermore, otherworldliness can be improved by legitimate work of VastuShastra standards/directs.

8. *The Total harmony:* The genuine feelings of serenity and thusly the tranquility of internal identity is identified with Vastu which summons the five components. The energy required for a day inside a home house can be accomplished by making some awareness of repulse the negative musings. This can be accomplished by executing VastuShastra inside a structure.

9. *Basic in utilization:* The greatest progression of things which will give positive things in structures can be accomplished by planning as indicated by VastuShastra. This is the upside of Vastu Shastra. Thus the everyday routine inside a house for the individuals who experience doesn't have any difficult stretch if VastuShastra is embraced during the plan of the structure[10].

CONCLUSION

Above examination uncovers that Ancient standards are logically determined and can be clarified with present day science. As this standards are determined on premise of characteristic perception so they can be considered as crucial rules that are important in any time. Some standards can be considered as dependable guideline especially in arranging stage.

These standards can be utilized as rule for specialists and planners. When we consolidate these standards with current methods it will make generally effective and practical development. There are neither unbending laws nor distinctive hypothesis that will be embraced accurately however by following certain straightforward rules and keeping certain precautionary measures the use of these standards is simple in contemporary practice.

These standards likewise fuse social and social part of Indian culture consequently it gives most ideal approach to grow monetarily proficient and fundamentally solid fabricated climate which is amicable to nature and social part of society. There are various other Vastu Shastra decides that can be defended with the assistance of current science and comprehension. As these standards are created during huge stretch of time of human progress, it joins insight and information on designers and specialist of various time. It likewise joins social, political and provincial variety. Subsequently pertinence of these standards in current practice ought to be assessed. It is prudent to utilize logically supported standards in current practice for effective development and solace of occupants.

REFERENCES

- [1] R. T. Fielding and R. N. Taylor, "Principled Design of the Modern Web Architecture," *ACM Trans. Internet Technol.*, 2002, doi: 10.1145/514183.514185.
- [2] J. H. Brill, "Systems engineering — A retrospective view," *Syst. Eng.*, 1998, doi: 10.1002/(SICI)1520-6858(1998)1:4%3C258::AID-SYS2%3E3.0.CO;2-E.
- [3] M. Amoretti and M. Reggiani, "Architectural paradigms for robotics applications," *Adv. Eng. Informatics*, 2010, doi: 10.1016/j.aei.2009.08.004.
- [4] S. B. Schapiro and M. H. Henry, "Engineering agile systems through architectural modularity," 2012, doi: 10.1109/SysCon.2012.6189529.
- [5] A. Benardos, I. Athanasiadis, and N. Katsoulakos, "Modern earth sheltered constructions: A paradigm of green engineering," *Tunn. Undergr. Sp. Technol.*, 2014, doi: 10.1016/j.tust.2013.11.008.
- [6] M. Shahin, P. Liang, and M. A. Babar, "A systematic review of software architecture visualization techniques," *J. Syst. Softw.*, 2014, doi: 10.1016/j.jss.2014.03.071.
- [7] A. Goodarzi and H. Fazeli, "Identifying the Principles of Traditional Iranian Architecture in the Light of Vastu Shastra, the Traditional Indian Wisdom," *Journal of Design and Built Environment*. 2014.
- [8] R. Gupta, "Comparison of Vastu Shastra with Modern Building Science," *Int. J. Res. Sci. Innov. /*, 2016.
- [9] C. Koranteng, S. O. Afram, and E. Ayeke, "A Review on Seven Principles of

Architecture,” 2015.

- [10] S. Chawla and D. Hiran, “Exhibiting Knowledge Level of Vastu Shastra Principles in House Construction and Interior Designing,” *Asian J. Res. Soc. Sci. Humanit.*, 2015, doi: 10.5958/2249-7315.2015.00106.9.