Reconceptualizing Vaastu Shastra Principles in Light of Modern Architectural Practices in India

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Abstract

With an emphasis on the dynamic interaction between traditional knowledge and modern design, the study investigates how Vaastu Shastra is changing to satisfy the modern architectural landscape. The abstract seeks to illuminate the creative methods architects are using to balance traditional knowledge with the requirements of contemporary design in India's architectural scene by looking at how these traditional concepts are being reinterpreted and integrated. This study examines how modern building approaches in India are blended with the ancient Hindu discipline of architectural design known as Vaastu Shastra. Vastu Shastra stresses designing areas to maximize natural light throughout the day, taking into account how the Sun moves in relation to the building. Though there are distinctions, there are also similarities and variations between Vastu Shastra principles and modern construction processes, despite the fact that modern buildings follow local building codes inspired by technology advancements. As a result, an effort has been made to incorporate traditional Vastu Shastra ideals into current house design approaches in order to improve both human well-being and environmental sustainability. This brief analysis identifies parallels and makes recommendations for implementing these concepts into social development programs.

Keywords-Vastu Shastra, Contemporary Building Techniques, Design Principles, Alignment, Construction practices.

1. Introduction

According to Mayamata, vaastu is the peaceful cohabitation of immortals and humans. A set of ageless rules known as Vaastu Shastra includes instructions for building Hindu temples and palaces as well as for designing homes, villages, cities, gardens, roads, waterworks, shops, and public areas. Around 3000 BC, Vastopati is mentioned as the family defender in the Rig Vedas, which is where Vaastu Shastra first appeared. Even though many ancient documents have been lost, two prominent instances of how Vaastu Shastra was used in later works are the epics Ramayana and Mahabharat.

This research explores the design of living spaces, whereas Vaastu Shastra has traditionally focused on temples, palaces, and homes. The site, site analysis, measuring systems, orientations, schematics, offerings, villages, and other settlements are the main subjects of the study. When constructing a dwelling unit, every detail is carefully considered, including the number of levels, size, foundations, deposits, socle, door features, and rehabilitation work. Vaastu Shastra principles were meticulously followed in the construction of ancient towns such as Indraprastha and Dwarka.

The concept of housing is broad, and categorized into four aspects:

1. The Earth/Site (Bhoomi) - the foundational dwelling place.
2. Building (Prasada) - the structure erected on the earth.
3. Conveyances (Movable Objects) - Yaana.
4. Furniture - Sayana.

It is recommended that when choosing a residential site, one should evaluate it using the principles of Vastu Shastra, taking into account elements like color, odor, flavor, form orientation, sound, and physicality. It is important to remember that different castes may have different criteria for choosing a dwelling site. There are two types of sites: primary sites, which include the earth itself, and secondary sites, which include towns, halls, houses, light structures, and palaces, all of which are collectively referred to as structures. Conveys include different forms of transportation, such as litters, carts, carriages, war chariots, and Anika, while seats include thrones, divans, chairs, aviaries, beds, and cradles.

By utilizing the five fundamental elements—earth, water, fire, air, and space—as well as taking into account the Earth's magnetic field and the motions of the Sun, Moon, and planets, Vaastu Shastra provides guidelines for structure construction. These guidelines seek to balance the effects of the sun, wind patterns, Earth's magnetic field, and the planet's cosmic influences. The following are the five main tenets of Vaastu Shastra:

1. The Doctrine of Orientation (Diknirnaya)
2. Site Planning (Vaastu Purusha Mandala)
3. Proportional Building Measurements (Maana)
4. The Six Canons of Vedic Architecture (Aayadi)
5. Building Aesthetics (Chanda).

Vastu principles have evolved over time, incorporating traditional building materials, local construction techniques, and architectural details that adapt to local conditions, including climate and available materials.

2. Rational Insights into Vastu Shastra: Adapting to the Modern World

The interaction between people and their homes is at the heart of Vastu Shastra, an ancient body of knowledge that governs spatial layouts. Even though Vastu Shastra contains a wealth of knowledge that was previously undiscovered, it remains mysterious. Our understanding of Vastu is limited since ancient wisdom is typically applied and interpreted imprecisely in contemporary culture. However, some phenomena, like the Sun's natural rising and fall, never change.

Similar to an internal compass, humans have an innate sense of direction. Our brain's "place cells" come into play when we visit a certain location, creating a cognitive map that reacts to position, orientation, and spatial direction. The Earth's natural magnetic characteristics have shaped its geostationary orbit around the Sun for billions of years. The compass needle always points north due to this magnetic

force, which is equivalent to the Earth's permanent magnetic field. This gives the Vastu Shastra principles, which are founded on directional alignment, a sense of permanency.

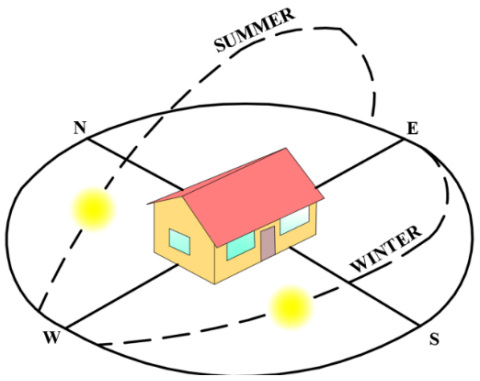

Fig 1 Solar path during a day in winter & Summer season.
Source:https://www.ijert.org/research/evaluation-of-bioclimatic-principles-in-design-of-office-building-in-hot-dry-climate-region-of-nigeria-IJERTV9IS040506.pdf

Vastu Shastra places a strong emphasis on directions; the eight cardinal directions are represented by the eight sectors of the 24-hour solar day. Every segment represents a cardinal direction in which the Sun is located throughout the day. Considering how important sunlight is to human health, Vastu Shastra's main goal is to make sure that a home's occupants have enough exposure to healthy sunlight throughout the day, even when they're indoors. But because people do different things in different rooms at different times and the Sun moves from sunrise to sunset, it is necessary to align each room to get sunlight at the times when it is most likely to be used.

For example, the Sun is in the north and northeast between 3 and 7:30 in the morning. During this time, morning light is thought to be quite healthy. To optimise solar exposure, it is advised that this region be kept clear of obstructions. Additionally, this era is marked by peace and quiet, which emphasises how crucial it is to use natural light for overall well being. Therefore, in order to foster harmony and balance in contemporary living spaces, architectural design must be in accordance with Vastu Shastra principles. Additionally, this calm and peaceful period is ideal for health-promoting activities like meditation, self-care, and leisurely outdoor activities. This time usually corresponds with our morning activities, such as taking a shower and getting ready for the day. Because it fits with the emphasis on health and wellbeing, it is therefore better to place restrooms during this quarter.

As the sun moves to the south and southeast, it is time to prepare meals and leave for work between 7.30 am and 12 pm. Because natural light is most needed during working hours, the southern part of the structure is therefore perfect for workplaces. For those who stay home, this is also a time to retreat to more personal spaces like bedrooms or private offices. It was customary for the head of the home to take a nap after lunch from 12 to 6 p.m., as the Sun travels to the southwest and west. Therefore, the southwest corner is usually where the master bedroom is located. However, because of the extreme heat at this time, it is better to have few openings and diffused light, and to position heavy items, such as

closets, in strategic locations to act as insulation. Children's rooms and study spaces are appropriate for this time of day since it also happens to be when kids get home from school.

This quarter is ideal for bedrooms since it is time to relax and sleep between 6 p.m. and 3 a.m., when the Sun moves from the northwest to the north. Guest rooms or rooms used less often are often placed here since they receive less natural light than other parts. Because of its location, which also improves security and solitude, it is appropriate for storing valuables.

3. Spaces arranged according to Vastu Shastra

Bedroom: Ideally situated to encourage stability and relaxation in the southwest section of the house. Place the head of the bed facing south or east to ensure a good night's sleep and prevent negative energy.

Kitchen: The southeast or northwest corners of the house are the ideal spots. To promote health and prosperity, the kitchen should be tidy and well-organized, with the stove or cooking area facing east.

Veranda or Open Spaces: Ideally placed in the east or north to promote the unrestricted flow of good energy. A peaceful atmosphere is created by keeping these spaces clear of clutter and well-lit.

Bathroom: The area should be in the northeast or east to guarantee hygienic conditions. To keep the mood upbeat, it should be clutter-free and well-ventilated.

Puja Room or Meditation Room: Positioned at the northeast corner, sometimes referred to as God's Corner or the Ishanya, to encourage spiritual development and good vibes. The altar should face either north or east, and the area should be kept calm and tidy.

W.C. (Water Closet): Move away from the kitchen and prayer room and toward the west or northwest to prevent the contamination of positive energy.

Dining Room: It works best when oriented east or west to promote abundance and harmony. When eating, the head of the household should face either the east or the north depending on how the dining table is arranged.

Drawing Room or Living Room: Pick a spot that faces north or east to promote social interaction and relaxation. The arrangement of furniture should encourage dialogue and a free exchange of ideas.

Study Room or Home Office: Positioned to increase production and focus in the northeast or east. The room should be well-lit and clear of distractions, and the desk should face either east or north.

4. Aligning Traditional Vaastu Shastra with Modern Construction Practices

Vaastu Shastra and contemporary construction methods are compared to identify similarities and differences in a number of important areas, including site analysis and selection, orientation determination, site planning, proportional building measurements, dimensions, aesthetic considerations, zoning regulations, and door placements. Traditionally, certain qualities were used to describe a good

place: it had to be square or rectangular, high in the south and west, white (indicating cleanliness), fragrant with jasmine and lotus, compact and smooth to the touch, and having a sweet taste. An inappropriate placement, on the other hand, was asymmetrical, high to the east and north, dark, loose, odorous, hard to manage, and tasted terrible. A number of factors must be considered these days while choosing a good website. A fully or partially developed region with a breathtaking view of the surrounding hills, rivers, or lakes is the perfect location for the property. People should be able to get to work, school, or the market with a sufficient number of transit options, such as bus and train service. It should be easy to access public utilities such water supply, sewage systems, power, and phone connections. The location should provide the building enough of light and air, have a suitable groundwater table, and be close to schools, hospitals, and marketplaces. Additionally, infrastructure soil needs to be reachable at a deep enough depth and have construction-grade soil. In order to prevent noise and pollution, residential sites should also be situated far from busy business districts and industrial regions.

Traditionally, the orientation of the location was determined by the movement of the Sun and Gnomemon, with East being the most auspicious direction. These days, orientation is determined using a compass, and north and east are the recommended directions. For maximum indoor comfort and energy efficiency, proper orientation is essential, taking into account seasonal variations in the Sun's path and dominant wind patterns.

Dividing the property into several padas, or squares, each of which represents a god, is necessary for site design, according to Vastu Purusha Mandala. The suggested building activities are influenced by the positions of these deities. Understanding the site development process, taking into account both natural and human factors, and gathering data to classify and assess design aspects are all part of modern site planning. By employing contour maps to assess surface features including trees, ground cover, ground surface, and soil conditions, guidelines are created for the planning, architecture, and landscape disciplines.

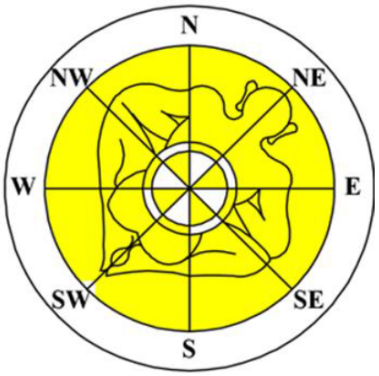

Fig 2- Navigation and Specific orientation for alignment of buildings,
Source: https://www.occultspeak.com/vastu-tips-for-mandir-in-flat/

In the past, gnomons and the motion of the Sun were used for orientation. The west was typically the least favored direction, whereas the east was thought to be the most auspicious for positive results. Compared to ordinal directions, cardinal directions were more important. These days, a compass is used to determine orientation; north and east are thought to be ideal, whereas south and west are less preferred. By lining up a structure with seasonal changes in the Sun's path and the main wind patterns, proper orientation can improve a home's energy efficiency while also making it more comfortable and economical to operate. In areas with mixed or variable climates, longer north-facing walls can help control solar exposure, lowering summer overheating and boosting winter warming.

Pada Vinyasa, a technique that divides the site into padas, or squares of different sizes, ranging from one square to 32x32 (1084) squares, is part of site planning, according to Vaastu Purusha Mandala. These squares are designated for deities, and the area granted to each deity determines the zoning of the house. Manduka (64 squares) and Paramasaiyn (81 squares) are suggested for all construction applications. The design and construction of buildings are still influenced by this ancient technique.

A key component of contemporary site planning is comprehending the site development process, which includes both natural and human factors that impact the environment and structure. Following data collection and analysis, recommendations are made to address issues on the job site and overcome design and planning obstacles. Planning, architectural, and landscaping concepts are often clarified by using geological characteristics and contour maps.

Direct observation of trees, soil, ground cover, and ground surface is made possible by site study. Consider aspects including kind, size, location, shading patterns, and ecological ramifications while evaluating vegetation. Slope studies should take into account a variety of factors, including elevation, drainage patterns, landforms, gradient, and others. Man-made features like squares, walls, porches, shelters, and bus stops are accurately depicted on maps.

Figure 3: Vastu Purusha Mandala illustrates how the Matrix Iron System is used to structure construction plans. This method ensures that the construction process is well planned.

By choosing the right ratios, proportions, or Maana, direct the planning and design process. It gives a structure the perfect height to width ratio for achieving visual harmony. Hasta (18 inches) and Angula (3/4 of an inch), two ancient measurement concepts, are used. There are six classes into which these metrics fall:

1. Measurement of height
2. Measurement of breadth
3. Measurement of width or circumference
4. Measurement along plumb lines
5. Measurement of thickness
6. Measurement of interspace

Vastu Shastra recommends specific proportional ratios between these measurements to create structures with pleasing proportions. Different height-to-breadth ratios yield different aesthetic qualities:

- Ratio of 1: The structure is aesthetically proportionate when height equals breadth.

- Ratio of 1.25: This ratio signifies stability when the height is 1.25 times the breadth.
- Ratio of 1.5: An outstanding appearance is achieved when the height is 1.5 times the breadth.
- Ratio of 1.75: The structure appears both solid and aesthetically appealing when the height is 1.75 times the breadth.
- Ratio of 2: The structure appears gorgeous when the height is twice the breadth.

Modern construction activities are guided by the principle of proportion, which serves as a fundamental concept in building theories, bridging mathematics and art. It helps visualize spatial relationships between various elements within a structure.

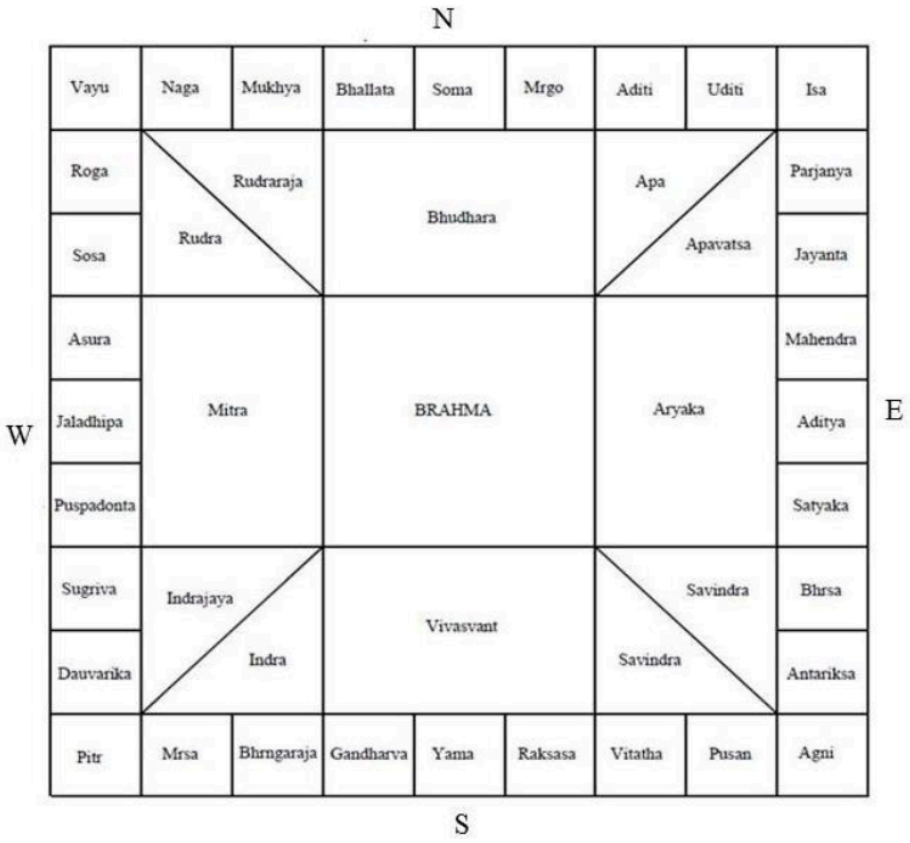

Fig 3- Vastu Purusha Mandala

The spatial representation of connections between various elements and locations within a design is sometimes defined by a standard unit of length known as a "module." For example, an individual's height can be defined as a module to determine the structure's proportions. Architectural proportions have been thoroughly studied and debated by renowned architects like Vitruvius, Alberti, Andrea Palladio, and Le Corbusier.

The residual concept serves as the foundation for the Shadvarga calculating method used in the six Vedic architectural canons, sometimes referred to as Aayadi or Building Dimensions. The correct dimensions for the construction are determined using the six equations: Aya, Vyaya, Yoni, Riksha, Vara, and Thithi. These dimensions include height or circumference, width, and length. The residue of

countless multiplications and divisions are used in the computations, which account for factors like solar and lunar days and star groupings. Silpis uses a technological instrument called the Aayadi calculation to figure out the proper construction measure while keeping proportions. Design specifications and regulations enforced by local construction authorities, such as the Floor Area Ratio (FAR), Ground Coverage, Setbacks, and Building Height Restrictions, dictate the proportions of modern structures. In addition to meeting regulatory requirements, setbacks provide natural light and air to flow at street level.

The different forms or elevations that a structure may have are represented by the building's aesthetics, or Chanda. Following Chanda makes it simple to identify structures according to their purposes.

There are six Chandas in Vastu Shastra:

1. Meru Chanda - resembling sacred mountains, like temples.
2. Khanda Meru Chanda - having an upward cut side, like Burj Al Arab.
3. Pataaka Chanda - resembling a flagstaff with a banner spread out, like the Throne Pillar of Fatehpur Sikri.
4. Sushi Chanda - resembling a needle, like Burj Khalifa.
5. Uddista Chanda - lacking independent perspective.
6. Nasta Chanda - lacking independent perspective.

Modern architecture prioritizes aesthetics, taking into account form, size, texture, color, balance, unity, movement, and cultural context. Unity, Proportion, Scale, Balance, Symmetry, and Rhythm are all aesthetic aspects that must be addressed in order to create a unified and visually appealing design. Aesthetic interpretation varies depending on the viewer's perspective.

Zoning, also known as Griha Vinyasa or Sthana Vinyasa, is the process of allocating various functional activities within a house based on the names of deities from the Vastu Purusha Mandala. The central BrahmaSthana, which is regarded the connection between the house and the universe, should be left open or with little development. The puja room is often located in the northeast, the kitchen in the southeast, the showers in the northeast, the living room generally shifting from the north to the west, the dining rooms varying from the south to the west, and the bedrooms in the southwest and south. In modern times, building zoning considers various factors such as the orientation of the building for natural light and ventilation, the daily routines of occupants, convenient access to activities, and escape routes for emergencies.

Door opening/Dwara Sthana - Ancient practices dictated the names of Pada Devatas to determine the major doorway's position in a given direction, usually to the immediate right of the center line.

In today's world, there is no hard and fast rule for choosing doorway places, but factors to consider include guaranteeing continuous and easy access, corner placement to maximize usable area, and deciding door width based on the function of the enclosure.

Comparisons and Inferences:

Site Selection:

- Traditional Vaastu Shastra prioritizes site shape, soil qualities, and vegetation. •
- Modern site selection takes into account environmental considerations, development type, landscape, transportation accessibility, facilities, and soil testing for foundations. In both traditions, the preferred shapes are square or rectangular with raised West and South sides.

Determination of Orientation:

- Traditional Vastu Shastra favors the East and disfavours the West.
- Modern Vastu Shastra chooses the structure's direction depending on the sun's position for passive solar design, reducing the need for mechanical equipment. North and east directions are often preferred.

Vastu Purusha Mandala/Site Planning:

- Traditional Vastu Shastra involves placing squares and deities in specified areas, however.
- Modern site planning takes into account standard and artificial features, environmental considerations, orientation, and climate. The planning procedures differ, but the final design is comparable.

Proportionate Measurement of the Building:

- Vastu Shastra has five height-to-breadth proportioning systems.
- Modern architecture determines proportions using a module. Both methods yield similar design results.

Six Canons of Vedic Architecture (Aayadi/Building Dimensions):

- Vastu Shastra uses the Aayadi Shadvarga calculation, involving formulas like Aya, Vyaya, Yoni, Riksha, Vara, and Thithi.
- Modern structures adhere to plan needs and local bye-laws for dimensions, without using such formulas.

Aesthetics of the Building/Chanda:

- Traditional Vastu Shastra emphasizes Chanda for easy identification of structures.
- Modern architecture considers aesthetics as a central aspect, dependent on individual perspectives.

Zoning/Griha Vinyasa or Sthana Vinyasa:

- Vastu Shastra allocates functional activities based on Gods' names in Vastu Purusha Mandala.
- In modern times, zoning considers occupants' needs, sun direction, and emergency escape routes, aiming to provide comfort and safety.

5. Conclusion

The analysis emphasizes the importance and adaptability of principles in responding to changing conditions. In certain cases, Vastu Shastra appears logical and practical, with good and consistent justifications for its suggestions. Vastu Shastra is closely rooted to its ancient roots in modern times, drawing on Vedic ideas while adopting a contemporary perspective. Individuals can incorporate Vastu Shastra principles into current architectural conceptions, recognizing their positive function in increasing people's well-being and contributing to societal growth. There is hope that the wealth of architectural knowledge from the past can be applied to evolving societal and technological dynamics with little alterations while keeping its core principle. Vastu Shastra exhibits intellect and logic in specific situations by offering valid and consistent reasoning to back up its recommendations. It is possible to mix Vastu Shastra and current architectural science. Aligning these historical ideals with modern design standards can benefit people's health and contribute to societal growth. There is hope that the wealth of architectural learning from the past will remain relevant in the face of societal and technological advances, with minor alterations but maintaining its essential principles.

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