

Harmonious Home Design: A Comparison of Vastu Shastra and Feng Shui from a Sustainability Perspective

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ABSTRACT

With the growth and influence of technology and science, the impact of traditional customs and beliefs have started to fade away. When the field of house construction is considered, the impact of traditional beliefs have played a more significant role in Asian countries than in European countries. There are numerous concepts such as the Vastu Shastra, Feng Shui, and many more from across the globe. With the development of technology, one seems to have drifted apart from traditional methods and beliefs. The main objective of this research is to analyse Vastu Shastra and Feng Shui as different ideologies and then compare them to modern Sustainable Architecture using various parameters such as environmental damage, economic feasibility, and technological advancements.

Introduction

Architecture is the art and science of building; it is a skill that combines the aesthetic and practical features of the building. The history of architecture is as long as that of humanity itself and probably just as complicated. The science that started with mud and thatch houses, and now evolved into an art.

The architectural empire has changed dramatically over the past decades. Architecture started with the Greeks and their establishments of arches and domes such as the Colosseum (Cartwright & Jarvis, n.d.). Since then, it has evolved into technologically sound structures and elaborate building designs. In India historically, the primary method of construction was based on bricks and clay. However, now it includes the use of steel, concrete, brick, glass, among many, as they are more durable materials. These days, basic geometry with advanced maths is used for complex building designs which leads to stable and reliable structures that are sturdy during natural disasters.

With the commencement of the industrial revolution, we have moved away from traditional methods and indulged in modern techniques. Some of these have hugely contributed to increasing carbon footprints as well. For example, buildings are one of the most significantly energy-consuming structures as they use about 40% of the energy; such energy is also responsible for producing greenhouse gases. As per the National Institute of Building Science (USA), buildings produce 35% of carbon dioxide, 49% of sulphur dioxide, and 25% of nitrogen oxide found in the air globally (NITTTR) (Azam & Roy, 2020, #). The increase in these gases not only leads to an increase in pollution but also substantially affects temperature, hence adding to global warming. Thus, it is vital to introduce sustainable development in the construction industry.

Keeping this need of the hour in mind, the industry has come up with Green Buildings. These are buildings that, in their design, construction, or operation, either reduce or eliminate negative impacts on our environment and hold the potential to create positive impacts (Azam & Roy, 2020, #). Their functioning includes minimum usage of water and energy along with minimum waste and pollution, and maximum utilisation of natural resources. In opposition to popular belief, Green Buildings do not always require the latest technology like solar panels, geothermal heating, rammed earth brick, or expensive recycled materials.

Masdar is an eco-city in the United Arab Emirates. It is an initiative of the government of Abu Dhabi to accelerate sustainable development. With the intensive contribution of architects and scientists, this innovative city was designed. Narrow streets accelerate airflow; pathways are cut at specific angles to protect pedestrians from the warm air, the presence of thick walls help to keep the interiors cool (Kaye, 2012). The courtyard is a wind tower that syphons hot air from above and turns it into a cool breeze that relieves residents who take a break in the shady courtyard below. Other new regional developments, from Katara in Doha to Kaust University in Saudi Arabia, rely on similar techniques to reduce energy and promote sustainable development (Kaye, 2012).

Native Americans in the southwest US built their dwellings using rammed earth for many years which enabled them to withstand harsh winters and summers. Meanwhile, traditional construction methods were used on the mainland and across borders. An interesting example of modern design is Bahia's House in Salvador, Brazil, which was designed by a Brazilian architect Marcio Kogan with a typical Arabic flair with an extensive open floor plan of the building, which encourages ventilation.

Vastu Shastra is an ancient Indian knowledge of the art and science of architecture. Developed from the early modern era to prehistoric periods, it is considered to have been transmitted orally over thousands of years in India. Designs which are based on Vastu Shastra use geometric patterns, symmetry, and directional alignments to connect architecture with nature, thus incorporating the concept of sustainability and gaining most of the natural energy available.

Similar to Vastu Shastra, Feng Shui is an architectural concept which defines constructing space with an aim to achieve harmony and balance. The concept of the latter originated in China and translates to “the way of wind and water.” As the name suggests, it defines designing a space keeping in mind different elements of nature. The attempt therefore becomes one of adapting to natural elements, instead of tweaking them to adjust according to our needs.

Methodology

The following themes were analysed in the research paper:

To gather, synthesise, and evaluate the findings of all relevant evidence on the subject and to present a thorough overview of the current state of knowledge on the same, this study used a systematic literature review (SLR) as a research methodology (Snyder 2019). To reduce bias and ensure the reliability and validity of the review, this process involved using a systematic and open approach to locate, assess, and summarise all pertinent studies. Extensive online research was conducted along with an extensive reading of research papers, to gather information about Vastu Shastra as well as Feng Shui. The research initially centres around Vastu Shastra and Feng Shui, and later goes on to determine whether they are sustainable in this rapidly growing world. It also includes a case study comparing Feng Shui and Vastu Shastra to evaluate whether they resonate with the concept of sustainability.

Discussion

Vastu Shastra

Each family wants its members to be healthy, each employer wants their employees to be energetic, and each teacher wants their students to be active. The reason for this is to maximise joyful efficiency, which can be gained by designing architecture based on the knowledge of Vastu Shastra. As defined above, the concepts laid in Vastu Shastra help develop a space keeping in mind the direction of sunrise and sunset, along with the wind directions. This is to effectively use natural resources available to us to their highest efficiency. The term Vastu has been originally derived from the root word *vas*, meaning to dwell or a dwelling place. The concept originates from the period 1500-1000 BC and is an ancient knowledge of the art and science of architecture (Purkar, 2019). It is believed to have been verbally

passed by the Indian sages and is an invaluable part of India’s oral history. From the environmental aspect, the shape and spatial arrangement, the sun rays, the magnetic poles, the geopathic zones, and concentric zones are the most significant of all which together have dictated certain principles of architectural construction.

A. Solar Energy

Solar energy plays an important role in Vastu Shastra. The orientation of the house’ living room, bedroom, entrance, and windows are placed by concentrating on the direction of sunlight. The reason behind this is defined by the purpose of the space. According to the ideologies of Vastu Shastra, the windows in a kitchen should always face in the east direction as that would ensure the germs that are built up in the kitchen overnight get killed by the morning rays of the Sun. (Fazeli & Goodarzi, 2010, #)

Table 1. Spatial organisation of areas based on position of sunlight.

South-east	South	Southwest	West	North	Northeast	Centre
Kitchen	Bedroom	Master Bedroom or storage	Dining Room	Storage	Meditation Room	Central Courtyard

B. Magnetic Poles

The earth has two magnetic poles which, based on the compass, seem steady, whereas in reality they are constantly moving with the revolving of the earth on its axis. The north direction is considered as the purifying direction while the south direction has energy giving properties which can be considered as warmth. Therefore, while the northern half of the plot is full of positive magnetic rays, the southern part will be empty or depleted. The evidence of such a phenomenon is used to decide the auspiciousness of the directions and their appropriate function in Vastu Shastra guidelines.

C. Geopathic Zones

“Geo” means earth and “pathos” means pain. The term geopathic refers to the effects that can be caused due to natural or man-made energies released by the earth. These energies can have adverse effects as their strong vibrations may be detrimental to one’s health. Geopathic stress can also cause an imbalance of energy fields. Buildings with bad energy effects are termed with the “sick buildings syndrome” (Fazeli & Goodarzi, 2010, #). This is caused by the improper use of materials and poor designing methods in today’s architecture. It can be mitigated by reapplying the principles of vernacular houses. If not paid attention to, the syndrome can lead to detrimental effects on health. It can cause headaches, irritability, lack of focus or motivation, fatigue which can be easily mistaken for common health issues.

D. Concentric Zones

The principle of concentric zones is based on Vastu Purusha mandala which is an archetypal pattern. It establishes a potent, energetic, and healthy effect based on ancient teachings (Fazeli & Goodarzi, 2010). The idea suggests treating the plan of dwelling the same way as the human body. As it can be seen in the figure below, the central part of the plan consists of organs which are delicate and sensitive thus, minimum pressure should be applied in these areas. Therefore, the inner areas should be open or constructed with minimum walls or heavy items. Another

belief is that the inner most areas symbolise the nose and the skin from which the body breathes and hence, should be left open. The outer belts are the place of human habitation and physical structures.

Apart from the symbolic significance of the Vastu Purusha Mandala, there are also suggestions that square is the best geometrical shape in economical and structural respect followed by rectangles. These shapes may be considered for rooms as well as furniture. These not only require less amount of construction material, but also square or rectangle-shaped buildings can transfer their load safely even when the capacity of the soil is low. Moreover, these symmetrical shapes perform better under wind and earthquake forces.

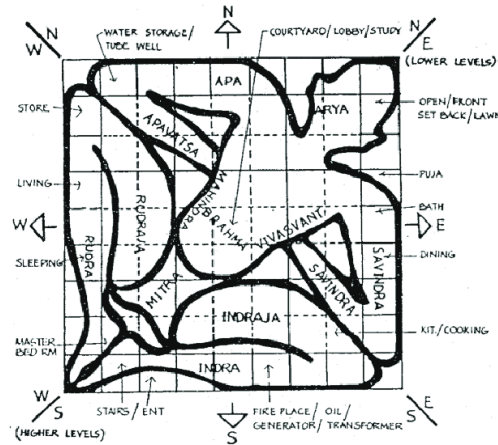


Figure 1: The above figure depicts: Vastu Purusha Mandala (Patra & Corbusier, 2017)

Feng Shui

Feng Shui is a type of Chinese geomancy which consists of using energy forces to facilitate harmony between individuals and their surrounding environment. The literal Chinese translation of the word 'Feng Shui' is "wind water" (i.e natural flow of energy). Feng Shui is achieved by arranging objects, buildings and spaces according to specific colour placement. It is the art and science of arranging your environment in order to nourish chi energy and bring good fortune.

It is believed that by implementing specific design principles, the flow of energy within your home can be improved, thus increasing abundance and vitality. In addition, it can help in achieving balance and happiness in life. The practice involves arranging buildings, objects and spaces in accordance with the principles of Chinese art to improve your overall quality of life. (*Feng Shui*, 2022)

A bagua map is used as a template to determine specific spots that will generate positive energy for an overall goal of improved energy flow (*Feng Shui*, 2022). Adding suggested colours, elements, and shapes to certain rooms can help bring balance and establish harmony in these areas. According to Feng Shui principles, by focusing on an individual's intent for their environment, you can welcome positive change into your life (Cho, 2022).

One of the most important elements of Feng Shui is the placement of furniture and objects. It posits an ideal bed placement, where you can see your bedroom door, while having access to adequate lighting. This placement also allows for equal space between two people on the bed, if a partner is present. Leaving enough space is important to ensure that both partners feel free and comfortable. It can be easily visualised by imagining a line down the middle of the room with both sides having enough space for each person; this includes leaving adequate space in front of the bed for both people when getting out or into it. (DeBusk, 2022)

Feng Shui also suggests that the bed should be positioned away from the windows, a beam ceiling fan, or structural or decorative beam. An upholstered screen should be placed to block any surprises. A settee should be kept at the foot of the bed instead of in front of the door to shift energy and improve health and relationships. The settee should be higher than a bench but lower than the end of the bed. When placing furniture, one should keep in mind that it should come your way when entering the room; for example, put the settee on your right-hand side if you enter through the bedroom's main door (DeBusk, 2022).

Feng Shui Concepts:

1. Unity between heaven and humans, or bringing harmony between the energies of the universe, earth, and people, is one of the most fundamental ideas. In traditional Chinese Feng Shui culture, the energy is revered in both its visible and invisible forms and is known as "Qi" (or "Chi," natural energy or breath of life). According to Skinner (1982), Feng Shui designs strive to create harmonious and balanced surroundings that can generate a lot of good Qi (positive energy) and block off negative Qi (negative energy). Chinese families search for good Feng Shui properties to attract "positive energy" because of this, among other things.
2. The Five Elements Cycles—fire, water, metal, wood, and earth—is the second idea. According to this, each of these five elemental groups of substances has a characteristic that may be applied to anything in the universe. The relationships of the five elements consist of productive and destructive cycles (Walters, 1989) which can be replicated in interior placements.
3. The third tenet of Feng Shui is the harmony of Yin and Yang. Yin stands for the passive elements of nature, such as moisture, coldness, and darkness. Yin is represented by the moon, femininity, the passive, the after-life, and tombs. Yang is a symbol for the dynamic forces of nature, such as heat, light, and dryness. Yang is also represented by symbols like the sun, masculinity, activity, the living world, buildings, towns, and cities. Although they are opposites, Yin and Yang are complementary to one another. A room with good Feng Shui has Yin and Yang that are harmoniously balanced and intended to bring about equilibrium in the lives of those who use it.

Feng Shui Design Principles:

The Form School's concepts and practices, which are primarily focused on the verification of the physical layout of mountains and watercourses around sites and buildings, are the most prevalent approach to the environment and building design. A set of "standard rules-of-thumb" was developed by Lip (1979) in accordance with the Form School of principles.

These rules-of-thumb includes:

- Buildings must be built on high ground rather than in valleys.
- There will be problems for the home on the triangular lot at the "Y" intersection.
- The house is shielded by trees on the northwest side of the site.
- It is not advisable to have a large tree planted in front of the front door.
- A residence that is at the end of a long, winding street is considered "Unfortunate".
- If the main road is on the west side of the building, a desirable location will be attained.
- To minimise circulation space, the most crucial area of a building should be situated in the middle.
- The bedrooms next to the kitchen are unfavourable and polluted.
- A back door that is not in line with the front door must be present in every house or building.

This general rule of thumb was extended to apply to interior components such as doors and windows placement and orientation, room shape and structure, and construction elements including walls, ceilings, structural beams and columns, stairs, etc. The master bedroom's bed position, the kitchen's stove, refrigerator, and sink placement, the living room's lounge chairs, the bathroom's layout, and other comparable factors all fall under the category of room arrangement.

Feng Shui vs Sustainability:

Over the years, western methods and traditional Feng Shui have been blending together. For instance, modern architects in New York and Washington, DC, have conferred with Feng Shui specialists for advice on buildings and interior designs.

The notion of sustainability has also recently been included into design concepts for constructed environments. The goal of ecological sustainability is to eliminate negative environmental impact through skilful and sensitive design. Such sustainable designs encompass many areas such as waste and recycling, energy, water, building design, emissions, indoor environmental quality (IEQ), alternative transportation, landscaping, and just about everything that affects everything around humans.

There are a set of five key ideas for sustainable development, according to Dong and Zuehl (2009). The constructivist design philosophy, circular design, energy efficiency, harmony between the natural and constructed environments, and buying locally and thinking globally are some examples.

Constructivism is centred on how individuals interact with their surroundings to improve it and make it enjoyable for those who use it (Dong and Zuehl, 2009). The circular design idea is a new design paradigm that emphasises "reduce, reuse, recycle" by utilising the wisdom of natural processes, such as the efficiency of nutrient cycling and the plentiful supply of solar energy (McDonough and Braungart, 2002). Based on these ideas, site planning, building design that takes into account sunshine, the use of different construction materials, and technology all contribute to energy efficiency.

Western design concepts and Chinese Feng Shui principles are comparable as they both focus on the well-being of people. The ideas of Feng Shui's balance between the cosmos, the earth, and people are a good fit for constructivism. When these three factors connect and overlap, it creates the perfect atmosphere for feng shui. Similarly, sustainable design considers the overlap of social circumstances, the environment, and human factors to ensure efficiency and comfort.

The circular design idea is comparable to the Feng Shui notion of the constructive and destructive cycles of the five elements. The idea of sustainable design is to balance the constructed environment with the natural environment in a way that is harmonious and maintains balance between Yin and Yang.

Vastu Shastra vs Sustainability

As we have studied through the entire research paper, we see that vastu shastra is an ancient Indian system which defined the rules of architecture and design. In opposition, sustainability is a more modern way to use the resources, while also keeping in mind that resources need to be preserved for future generations.

There are plenty of similarities between both the concepts in relation to architecture, but they are not the same. Vastu Shastra emphasises the use of natural materials and the alignment of buildings with the cardinal directions to create a balance between the environment and the people living in the space. This can be seen as a form of sustainable design as it promotes energy efficiency and the use of natural light. Sustainability, on the other hand, is more focused on reducing the environmental impact of buildings and the use of resources. This can include the use of renewable energy sources, reducing waste, and minimising the use of harmful chemicals.

In summary, Vastu Shastra and sustainability allow for optimal use of space in different forms. One uses traditional structures to create a balance while the other revolves around modern concepts of energy efficiency.

Conclusion

The research paper highlights Vastu Shastra as a concept that can be divided into four components which include Solar Energy, Magnetic Poles, Geopathic Zones and Concentric zones. Along with explaining Feng Shui consisting of energy forces to bring harmony to individuals with their surrounding environment.

Both Feng Shui and Vastu Shastra define standards for building suitable homes, and each system uses different ways to achieve the same goal—creating a harmonious environment that encourages positivity within your homes or space. Vastu Shastra, a science of Indian origin, uses pyramids and eight compass directions to guide home design. It is based on the premise that if architecture is placed in proper alignment with magnetic compass readings, it will achieve harmonic energy alignment. Feng Shui, on the other hand, uses five elements but has a different set of meanings for each direction. Originating in China, it takes into account local geography and devices such as mirrors or wind chimes to determine placement of objects and furniture in order to optimise energy flow within homes.

Looking at Feng Shui from the perspective of sustainability, we see these days Feng Shui being frequently incorporated in Western methods. The method helps in creating a good balance between the cosmos, the earth, and people, leading to a sustainable environment. While threads connect feng shui and sustainability, little connection can be seen between Vastu Shastra and sustainability. Vastu Shastra emphasises the use of natural materials and the alignment of buildings with the cardinal directions to create a balance between the environment and the people living in the space. Sustainability, on the other hand, is more focused on reducing the environmental impact of buildings and the use of resources.

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