

# Scientific Substantiation of Vastu Shastra

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**Abstract:** Vastu Shastra, an ancient Indian science, intricately weaves together the art of construction and the orchestration of harmonious living spaces in consonance with natural laws and cosmic energies. It's based on the belief that the laws of nature and the universe can profoundly influence the well-being, fortune and prosperity of individuals who live or work in a building. The principles of Vastu Shastra revolve around the five basic components of nature (water, earth, fire, air, and space) and the cardinal directions (north, south, east, west, and center). While this belief has been fervently embraced by some, others remain skeptical due to the dearth of empirical substantiation. This paper delves into Vastu Shastra's essence, unfurling it under scientific scrutiny. By melding empirically validated proof, it compellingly supports Vastu Shastra's core principles. Navigating architecture, cosmology, and well-being, it confirms how our surroundings intertwine with our lives. This scientific exposition not only illuminates the principles of Vastu Shastra but also offers pragmatic insights for aligning our homes with cosmic harmony. By merging ancient wisdom and modern empiricism, our living spaces will resonate with the universe, nurturing abundance and serenity.

**Keywords:** Architectural design, Elements of nature, House planning, Science, Vastu Principle, Orientation, Energy.

## I. INTRODUCTION

The simple meaning of the word 'Vastu' is construction of structures. The art and science of construction are included in Vastu Shastra. The science aspect involves considering the directions, level, soil structure, energies, materials, elements and environment. Vastu shastra is deeply rooted in the belief that the design and orientation of a building profoundly impact the flow of energy within it. Stemming from the Vedas, particularly the Atharvaveda and Rigveda, Vastu Shastra outlines principles for creating harmonious spaces aligned with natural laws and cosmic energies. In essence, it seeks to optimize the well-being, fortune, and prosperity of individuals inhabiting these structures. The foundational concept of Vastu Shastra revolves around the idea that our physical surroundings have a significant influence on our lives. It suggests that by aligning our built environment with the natural forces of the universe, we can enhance the quality of our existence. This ancient science emphasizes the interconnectedness between humans and their surroundings, highlighting the profound impact that architectural design can have on our health, success, and overall happiness. Vastu Shastra is important because it pays close attention to every little detail while designing and positioning each component of a construction. From the layout of rooms to the positioning of doors and windows, every aspect is carefully considered to promote harmony and balance. For example, the placement of the main entrance is given particular importance, as it is believed to be the primary channel through which energy enters the building.

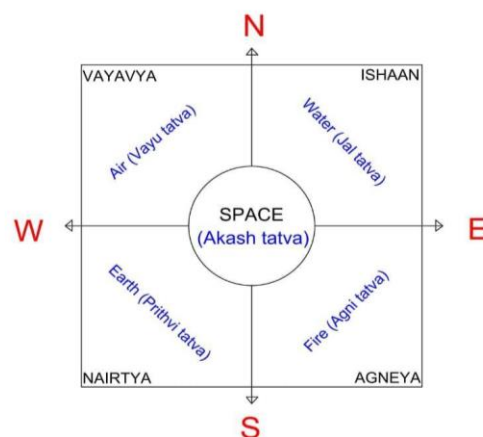


Fig. 1. Pancha Mahabhutas

At its core, Vastu Shastra is built upon a holistic understanding of the elements that constitute the universe. These elements as shown in the figure above - earth, water, fire, air, and space, also known as the 'Pancha Mahabhutas' are

associated with the directions as shown in the above image and represent different aspects of cosmic energy. By harmonizing these energies within a building's design, Vastu Shastra aims to create an environment that resonates with the natural rhythms of the universe. All objects on Earth and throughout the universe consist of five fundamental elements, and both the human body and a house are composed of these elements as well. This comparison between humans and houses, known as Vastu Purusha.

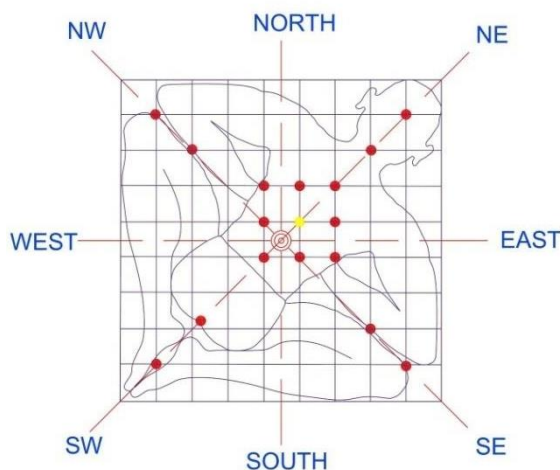


Fig.2. Vastu Purusha and Marmsthanas

According to mythology, Vastu Purusha is a cosmic being who guards the building and protects its inhabitants from negative energies. The placement of different rooms and elements within a building is believed to be in accordance with the Vastu Purusha Mandala, a grid-like structure that maps out the body of Vastu Purusha. The specific points within the body of Vastu Purusha, where vital energy, or prana, is concentrated are called Marmsthanas, denoted by solid red dots in the above image. In the context of architectural design, understanding Marmsthan is essential as it influences the placement of various elements within a building. By aligning architectural features with Marmsthan points, practitioners aim to optimize the flow of energy and enhance the well-being of occupants.

While Vastu Shastra has been traditionally practiced in India and parts of South Asia such as Nepal and Sri Lanka for millennia, its relevance extends beyond cultural boundaries. In recent years, its principles have garnered interest globally, particularly in regions like the United States, where there's a growing fascination with spirituality and alternative architectural paradigms. However, the acceptance of Vastu Shastra varies widely, influenced by diverse individual beliefs and cultural practices. While certain communities wholeheartedly embrace its principles, others approach it with skepticism. Even among those who may not fully subscribe to its tenets, some seek guidance from Vastu practitioners for specific construction and design advice. This skepticism often stems from the perceived absence of scientific reasoning behind Vastu Shastra principles. In an era dominated by empirical inquiry and rational discourse, the lack of concrete scientific explanations can lead to hesitancy in accepting ancient architectural wisdom. Furthermore, modern society's reliance on empirical evidence and tangible results may clash with the abstract and holistic nature of Vastu Shastra principles, contributing to skepticism among certain individuals. Despite its enduring cultural significance and anecdotal evidence of its efficacy, the absence of scientifically verifiable explanations may hinder its widespread acceptance in some circles.

The primary objective of this paper is to bridge the gap between ancient architectural principles, as embodied in Vastu Shastra, and modern day culture. This paper aims to demystify Vastu Shastra and make its principles accessible to every individual, including those with little or even no prior knowledge of the subject. Through clear explanations and practical applications, our goal is to empower readers to harness the potential of Vastu Shastra to enhance the harmony, prosperity, and overall quality of their living and working environments. In today's era, where scientific inquiry reigns supreme, providing a scientific rationale for traditional practices like Vastu Shastra becomes paramount. Understanding its principles through a scientific lens can lend credibility and broaden its acceptance among a wider audience. By elucidating the underlying mechanisms by which Vastu Shastra operates, we not only validate its ancient wisdom but also offer insights into its potential applicability in modern architectural practices. Moreover, this paper provides a detailed plan on the placement of rooms according to Vastu Shastra, supported by scientific reasoning, serving to demystify the ancient practice of Vastu Shastra. By breaking down complex concepts into accessible explanations, even a layman can comprehend the scientific logic behind Vastu Shastra principles and apply them in their own living spaces. This democratization of knowledge not only empowers individuals to create harmonious environments but also fosters a deeper appreciation for the interconnectedness of space, energy, and well-being.

## II. LITERATURE REVIEW

[1] gives a comparison between Maharishi Vedic Architecture and Western, Feng shui architecture on house orientation according to hemisphere. This comparison is done to examine whether quality-of-life of a home's occupants varies in northern and southern hemisphere homes when the orientation of the home is always to the eastern sun (as prescribed by Maharishi Vedic Architecture) not orientated differently in northern and southern hemispheres to maximize light (as prescribed by western and Feng Shui architecture design).

[2] discusses the history and cultural significance of Vastu and how it has evolved over time. It also delves into the different types of Vastu, such as residential, commercial, and spiritual, and how they can be applied in modern architecture and interior design.

[3] concludes that the five elements which are co related to this environment are said to be vastu and the balancing part of all types of construction can only be done by vastu.

[4] says that Vastu Shastra reflects many of the modern concepts from the field of modern physics, climatology, geography, biophysics, biochemistry etc. It also discusses some drawbacks observed in logical explanations of Vastu Shastra principles.

[5] highlights the fact that Vastu principles vary from region to region depending upon the climatic conditions and are not to be blindly followed or are not applicable to all the regions in a similar manner.

In [6], an attempt has been made to create a close relationship between Vastu Shastra and sustainable development. The Chandigarh master-plan overlaid by the Vastu-Purusha-Mandala is described here.

[7] highlights the traditional beliefs of house construction regarding opening and cross wall construction and load on it. Small survey and compressive strength tests are also done to support the idea.

An AI approach to determine a Vastu Compliance score for an architectural design is suggested in [8]. Architects and property owners are increasingly prioritizing sustainable and energy-efficient techniques when planning future spaces, aiming to support global net-zero initiatives. This paper introduces a neural approach for forecasting the most effective layout for a specific residential design. Subsequently, it proposes employing a fuzzy system to assess the Vastu compliance score of the proposed design, aiding in achieving these sustainability goals.

Book [9] discusses traditional concepts like Ayadi formula, Vastu Purush mandala, orientation with eight directions, site consideration and materials used for construction.

Book [10] contains history of vastu, Key elements of Vastu, Site Selection, Auspicious times, industrial and commercial Vastu.

This is how some key Vastu Practitioners define Vastu Shastra:

1. Dr. V. Ganapati Sthapati :- In simple terms, vastu signifies 'to dwell' or 'to exist' and shastra refers to science. Within this field, There are two terms that are commonly used - vastu and Vastu. Today, Vastu is commonly used to denote buildings.
2. Dr. Puneet Chawla :- VastuShastra is an architectural and design system originating from the Vedas in India. Its purpose is to offer practical and genuine advice to ordinary people.
3. Manoj Jain :- Vastu revolves around attaining both good health and overall prosperity. It helps in attaining 3 P's of life Prosperity, Peace and Progress.
4. Dr. Kunal Kaushik :- Vastu represents equilibrium and creates a harmonious atmosphere within a building, which encompasses balance across all directions of the universe..
5. Dr. KhushdeepBansal :- Vastu is not a magic wand! This is an Art, which has to be practiced. This is a Science, which has a profound logic behind it, and one has to remain committed towards this Art and Science."
6. Acharya Pankit Goyal :- Vastu shastra is the science which can lead you to live the happy and successful life, it is part of our vedic scriptures, In ancient time it is only used for well being of Kings so that they can rule and remain always on top.
7. Dr. Anand Bhardwaj :- Vastu promotes living in sync with nature, emphasizing the importance of sufficient sunlight, proper ventilation, and adequate space to enhance life's quality, promote cleanliness, ensure good health, prosperity, and foster family harmony.
8. Mahesh Gyani :- Vastu means Building and Vastu Shastra is a science of building construction.

## III. SCIENCE OF ENERGY AND MATTER

The essence of Vastu Shastra revolves around the understanding of the relationship between energy and matter. According

to principles in quantum physics, mass and energy can be transformed into one another, highlighting their interchangeable nature. Einstein represented this with the equation:  $e=mc^2$ . This simply means that every particle in this universe carries some sort of energy within it, which can be either positive or negative. As per the first law of thermodynamics and law of conservation of energy, energy can only change forms; it cannot be generated or destroyed. Hence, the total amount of energy in the universe is constant. When we create any structure or building, we enclose these particles within a space. Hence, the energy of that space depends on the net energy generated by the interaction of these enclosed particles.

Similarly, Vastu philosophy suggests the existence of two opposing forces, one subtle and refined, the other dark and dense, which can be categorized as positive and negative respectively. These forces interact to release vital and natural energy, known as Pranik and Jaivik Urja, across the Earth's surface. "Pranik" energy signifies the life force that animates living organisms, often linked with breath or vitality. Conversely, "Jaivik" energy encompasses the natural energies existing in the environment, including those from the sun, wind, water, and earth. These energies play a crucial role in sustaining life and preserving equilibrium within the ecosystem. When a building is constructed, it disrupts the natural flow of energies, allowing both positive and negative forces to enter. However, factors like size, shape, slope, elevation, structural elements, proximity to water bodies, placement of rooms, doors, and openings influence the intensity and balance of these energies within the building.

Vastu Shastra highlights the importance of arranging architectural components to enhance the flow of positive energy, which fosters environments conducive to well-being. When a building is designed to prioritize positive forces, it promotes the release of beneficial bio-energy, benefiting the health of all occupants. Even when confronted with negative influences, structures emphasizing positive forces maintain an abundance of positive cosmic energy, ensuring a harmonious and fulfilling life. Conversely, buildings that favor negative forces weaken the bio-energy field, potentially resulting in health issues and a pessimistic outlook. Vastu science offers guidelines for creating spaces with positive atmospheres, emphasizing alignment with Earth's natural energies. It encourages access to open energy sources and unobstructed energy flow, rooted in scientific principles like solar energy, Earth's rotation, and magnetic fields.

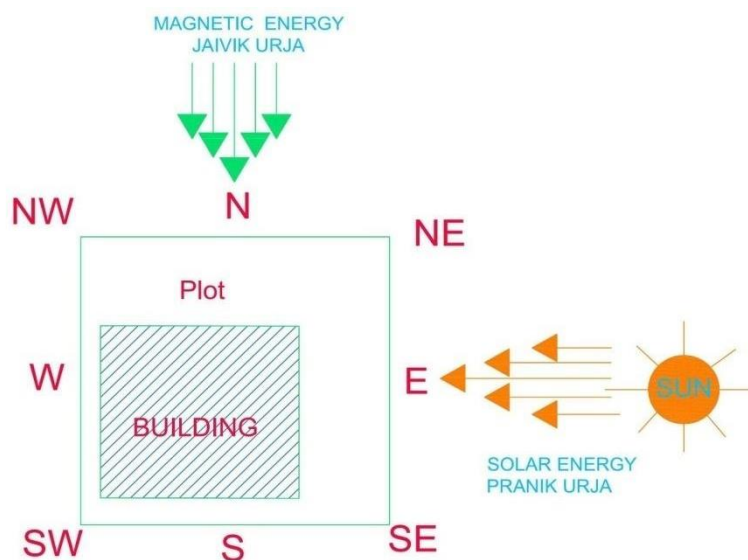


Fig.3. Solar and Magnetic Energy

#### A. Solar Energy

The Sun plays a vital role as the primary energy source for all life on Earth and serves as the foundation for various other forms of energy. Solar energy and Vastu Shastra are closely linked due to their shared emphasis on utilizing natural energies to enhance human well-being and promote harmony. Solar energy, originating from the Sun's natural light and heat, represents a sustainable and renewable power source. Direct sunlight serves as the predominant energy source in residential, commercial, and industrial settings, as well as for human health.

In Vastu Shastra, the Sun holds immense significance as a source of positive energy and vitality. The orientation of buildings in Vastu Shastra often considers the path of the Sun, with the placement of windows and openings strategically designed to maximize sunlight exposure. This not only promotes natural lighting but also ensures the influx of positive solar energy into living spaces. Additionally, the positioning of rooms and architectural elements according to Vastu principles aims to optimize the utilization of solar energy for various purposes, including heating and illumination.

- Morning sunlight is advantageous because of its higher concentration of UVA and UVB rays compared to sunlight at other times of the day. These rays, especially UVB, play a key role in triggering vitamin D synthesis in the skin, crucial for bone health, immune system function, and overall wellness.
- Water is linked to purification and vitality, and having water bodies in these directions is believed to boost the circulation of positive energy and support health and wellness.
- The South-East direction benefits from aligning with the Sun's path across the sky during the day. As the Sun moves from east to west, the South-East receives sunlight at an optimal angle, resulting in prolonged exposure to solar radiation and higher heat accumulation compared to other directions. This abundance of sunlight can contribute to higher temperatures in this area compared to other parts of the building, creating a naturally warmer environment that aligns with the association of fire.
- In Vastu Shastra, elevating or blocking this south west helps prevent the escape of positive energy from the living space, promoting a sense of security and stability for the occupants. From a scientific standpoint, elevating the southwest corner can also optimize sunlight exposure. By raising this area, other parts of the building, particularly those facing north and east, receive more sunlight throughout the day, promoting natural lighting and warmth. Elevating the southwest corner aids in proper drainage away from the building, preventing water stagnation and potential damage to the structure's foundation.

### B. Rotation of Earth

The Earth spins on its axis, an imaginary line that stretches from the North Pole to the South Pole, resulting in the alternation of day and night as different regions face towards or away from the Sun. This rotation completes one full cycle approximately every 24 hours.

Furthermore, the Earth is tilted on its axis in relation to its orbit around the Sun, with an angle of about 23.45 degrees. This tilt, referred to as axial tilt or obliquity, causes variations in sunlight received by different parts of the planet throughout the year, leading to the seasonal changes. During the Earth's orbit around the Sun, this tilt results in one hemisphere experiencing summer when tilted towards the Sun, while the opposite hemisphere experiences winter. Additionally, the tilt affects the duration of daylight and influences global climate patterns.

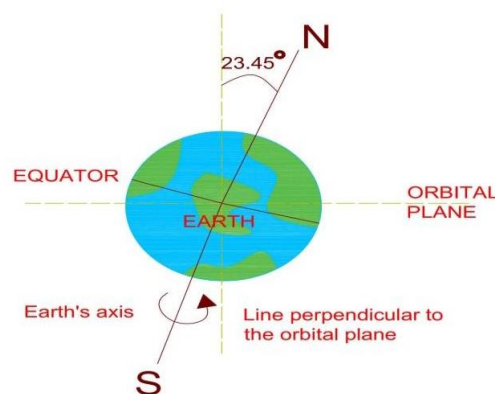


Fig.4. Tilt of the Earth

Suppose when we transporting a large and heavy cartoon on a bike:

Putting the heavy cartoon in front of the handle will be uncomfortable, decrease speed, and obstruct view. Positioning the heavy cartoon on either side increases the chance of falling and makes it harder to stay balanced. To ensure a pleasant ride, the best option is to place the heavy weight on a carrier in the rear. This is the theory applied in the Vastu Rules.

Our Earth has been rotating continuously for over 4.54 billion years, inclined at approximately 23.45 degrees towards the North-East direction. It orbits the Sun without any external mechanisms like axles, bearings, or motors. As we journey along with the Earth, it's essential to ensure that the weight we place in our surroundings doesn't impede its movement.

To maintain balance and harmony in our living spaces according to Vastu principles, it's advisable to distribute weight strategically:

- Place heavier items in the South-West corner to provide stability and support.



- Keep lighter objects in the North-East corner to allow for smoother movement and flow.
- Maintain equilibrium in the South-East and North-West corners by placing medium-weight items.

By following these guidelines, we can align our surroundings with the Earth's natural energy flow and promote a sense of balance and well-being in our lives.

### C. Magnetic Energy

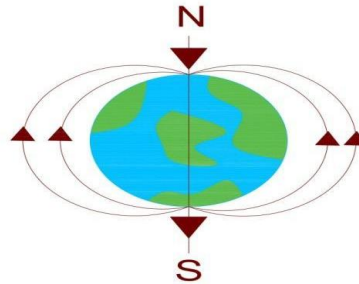


Fig.5. Magnetic field of Earth

Earth's magnetic field is believed to impact health and vitality. The Earth itself is a huge magnet and the currents of its magnetic power run from the North Pole to the South Pole. These currents of the North and South Pole definitely have an impact on the non-living things and all the living creatures living on the Earth. If an iron lump is buried in the earth parallel to the currents, then within a few years that iron lump becomes a magnet. Iron element is present in the bodies of organisms living on Earth and is indirectly affected by the Earth's magnetic currents. Therapy by magnets is based on this fact. Buildings frequently integrate materials containing iron particles, such as steel and iron-based alloys. Vastu Shastra advises on building layouts and orientations that reduce interference with natural energies, including magnetic fields, to enhance well-being and foster harmony.

When your head aligns with Earth's magnetic North Pole, it creates a repelling force similar to pushing two magnets together, possibly leading to discomfort. Conversely, positioning your head towards Earth's South Pole, as suggested by Vastu Shastra, aligns the North Pole of your head with Earth's magnetic South Pole, creating an attractive force. This alignment may promote relaxation, better sleep, and improved circulation, according to both Vastu Shastra and some scientific views.

## IV. RESULTS AND DISCUSSION

This section delves into the positioning of rooms within a house based on the principles of Vastu Shastra, an ancient Indian architectural doctrine along with the scientific reasoning behind the same. The guidelines outlined below offer insights into creating a Vastu-compliant house, along with the scientific reasoning that underpins these recommendations. By integrating these Vastu guidelines with modern scientific understanding, homeowners and architects can create living spaces that not only adhere to ancient principles of harmony and balance but also promote physical, emotional, and spiritual well-being in alignment with contemporary lifestyle needs.

### 1. Entrance:

- Recommended Location: The North and East sides are recommended as the best locations for the entrance of a building.
- Reason: The suggestion to position the entrance on the North or East side of a building originates from the intention to capture positive energy and foster a sense of harmony and prosperity among those who inhabit the space.

### 2. Kitchen:

- Recommended Location: The South East direction is recommended as the ideal location for a kitchen.
- Reason: Positioning the kitchen in the South-East enables it to benefit from abundant sunlight exposure throughout the day, leading to improved cleanliness by eliminating germs and bacteria. Furthermore, the South-East direction's association with the fire element is believed to stimulate energy, vitality, and transformative qualities. Aligning the kitchen with this element is thought to optimize the cooking environment and positively impact the occupants' overall well-being.

### 3. Living Room:

- Recommended Location: The North or East directions are suggested as favorable locations for the living room.

- Reason: The suggestion to place the living room in the North or East directions is frequently guided by the house's layout, especially when there's an entrance situated in the North-East direction. This positioning facilitates convenient movement throughout the house and maximizes space utilization. Moreover, positioning the living room in the North or East allows for abundant natural light, creating a welcoming and comfortable atmosphere that enhances the overall livability of the area.

#### 4. Bedroom:

- Recommended Location: The South-West direction is the optimal location for the bedroom.
- Reason: It is advised because the earth element's stabilizing qualities when combined with the South-West direction create a peaceful, comforting atmosphere that is perfect for a restful sleep in the bedroom. In addition, positive energy comes into the house from the northeast and concentrates in the southwest. As a result, placing the bedroom toward the south-west helps people access this positive energy that has gathered, which promotes feelings of security, stability, and overall well-being.

#### 5. Pooja room:

- Recommended Location: The North-East direction is perfect for the pooja room.
- Reason: The suggestion stems from the intention to keep the pooja space open and pure. Placing the pooja room in the northeast direction invites blessings and positive energy into the home, elevating the spiritual ambiance and encouraging calmness and inner peace.

#### 6. Store room:

- Recommended Location: The South or West directions are suggested for the store room.
- Reason: The suggestion focuses on evenly distributing weight within the house, utilizing the South for heavy storage because of its stability, with the West also serving this purpose. On the other hand, the North-East is deemed unsuitable for heavy items. By situating the store room in the South or West, this equilibrium is maintained, allowing heavy items to be stored properly while lighter items are kept in the North-East.

#### 7. Staircase:

- Recommended Location: The South or West directions are preferred for the staircase.
- Reason: It's advisable for the staircase to be situated in the South-West direction, which should be heavier and elevated compared to the North-East. This positioning ensures structural stability and safety, making the South or West suitable choices for staircase placement.

#### 8. Toilet:

- Recommended Location: The south of southwest (SSW) and west of northwest (WNW) directions are suggested for the toilet.
- Reason: Since these directions do not interfere with any Marma Sthana, they help to prevent the spread of negative energy and maintain positive energy in the building.

#### 9. Underground water tank:

- Recommended Location: The North-East direction is recommended for the underground water tank.
- Reason: the North-East direction is linked with the water element and is deemed ideal for water storage. It is also recommended to level lower in the North-East than in the South-West to facilitate proper water flow and distribution. Additionally, placing the water tank in the North-East direction corresponds to the flow of positive energy, fostering harmony and prosperity in the surroundings.

These guidelines extend beyond residential architecture to encompass other building types such as industrial facilities, temples, and commercial spaces. By integrating Vastu-based principles into the design and layout of these structures, it is possible to create environments that promote well-being, productivity, and harmony.

## V. CONCLUSION AND FUTURE SCOPE

In conclusion, this paper has delved into the scientific reasoning behind Vastu Shastra principles, aiming to spread awareness and promote the positive impact of this ancient science to a wider audience for the betterment of society. By establishing the relationship between Vastu Shastra and natural phenomena such as the Sun's energy, magnetic forces, and the rotation of the Earth, we have highlighted the scientific underpinnings of Vastu Shastra. Furthermore, this paper offers a comprehensive plan for designing homes in accordance with Vastu Shastra principles, supported by scientific validation.

By providing practical guidelines and explanations, we empower individuals to apply Vastu principles in their own living spaces, thereby enhancing their well-being and quality of life. It's crucial to remember a key aspect of Vastu Shastra: the strategic elevation of different sides of the building. The southwest side should be elevated, bearing the weight of heavy structures, and surrounded by closed surroundings. In contrast, the northeast side should be kept at a lower elevation, with

open surroundings. This balancing act ensures that the energies flowing from the northeast, considered auspicious and beneficial, are unobstructed and allowed to flourish. Meanwhile, the elevation of the southwest acts as a barrier, preventing negative energies from entering, while also ensuring that positive energies are retained within the space.

Looking ahead, the future scope for research in Vastu Shastra is vast and promising. Further studies could explore additional scientific evidence to support Vastu principles, requiring expertise and interdisciplinary collaboration. By continuing to deepen our understanding of Vastu Shastra through scientific inquiry, we can unlock its full potential for creating harmonious and prosperous environments that benefit individuals and society as a whole.

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