

A REVIEW STUDY ON ARCHITECTURE OF HINDU TEMPLE

PRATHAMESH GURME¹, PROF. UDAY PATIL²

¹UG SCHOLAR, ²HEAD OF DEPARTMENT, DEPARTMENT OF CIVIL ENGINEERING BHARATI VIDHYAPEETH'S COLLEGE OF ENGINEERING, LAVALE, PUNE, INDIA

ABSTRACT : *Hinduism is the predominant religion of the Indian subcontinent. Dating back to the Iron Age, it is often called the oldest living religion in the world. Hinduism has no single founder and is a conglomeration of diverse traditions and philosophies rather than a rigid set of beliefs. Most Hindus believe in a single supreme God who appears in many different manifestations as devas (celestial beings or deities), and they may worship specific devas as individual facets of the same God. Hindu art reflects this plurality of beliefs, and Hindu temples, in which architecture and sculpture are inextricably connected, are usually devoted to different deities. Deities commonly worshiped include Shiva the Destroyer; Vishnu in his incarnations as Rama and Krishna; Ganesha, the elephant god of prosperity; and different forms of the goddess Shakti (literally meaning "power"), the primordial feminine creative principle. These deities are often portrayed with multiple limbs and heads, demonstrating the extent of the god's power and ability. Hindu art is also characterized by a number of recurring holy symbols, including the om, an invocation of the divine consciousness of God; the swastika, a symbol of auspiciousness; and the lotus flower, a symbol of purity, beauty, fertility, and transcendence. Sculpture is inextricably linked with architecture in Hindu temples, which are usually devoted to a number of different deities. Hinduism is a conglomeration of diverse traditions and philosophies rather than a rigid set of beliefs. Most Hindus believe in a single supreme God who appears in many different manifestations as devas (celestial beings or deities), and they may worship specific devas as individual facets of the same God. Hindu sculpture, as seen in other forms of Hindu art, reflects this plurality of beliefs. Because religion and culture are inseparable with Hinduism, recurring symbols such as the gods and their reincarnations, the lotus flower, extra limbs,*

and even the traditional arts make their appearances in many sculptures of Hindu origin. Sculpture is inextricably linked with architecture in Hindu temples, which are usually devoted to a number of different deities. The Hindu temple style reflects a synthesis of arts, the ideals of dharma, beliefs, values, and the way of life cherished under Hinduism. Elaborately ornamented with sculpture throughout, these temples are a network of art, pillars with carvings, and statues that display and celebrate the four important and necessary principles of human life under Hinduism—the pursuit of artha (prosperity, wealth), the pursuit of kama (pleasure, sex), the pursuit of dharma (virtues, ethical life), and the pursuit of moksha (release, self-knowledge).

KEYWORDS: SCULPTURE, VASTUPURUSH, ARCHEOLOGY, PILGRIMS, ANCIENT, DEITIES, LAYOUT.

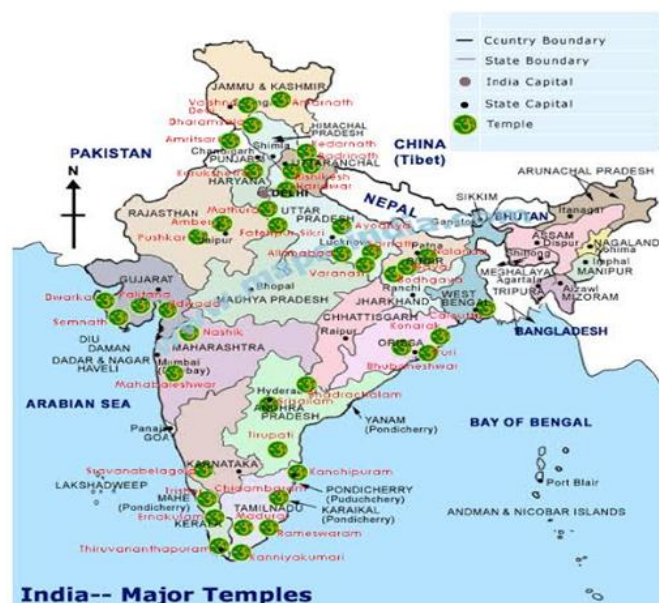


Fig.1 Major Temple in India

INTRODUCTION :

Temple architecture of high standard developed in almost all regions during ancient India. The distinct architectural style of

temple construction in different parts was a result of geographical, climatic, ethnic, racial, historical and linguistic diversities. Ancient Indian temples are classified in three broad types. This classification is based on different architectural styles, employed in the construction of the temples. Three main style of temple architecture are the Nagara or the Northern style, the Dravida or the Southern style and the Vesara or Mixed style. But at the same time, there are also some regional styles of Bengal, Kerala and the Himalayan areas. One important part of the ancient Indian temples was their decoration. It is reflected in the multitude details of figured sculpture as well as in the architectural elements. Another important component of Indian temples was the garbha-griha or the womb chamber, housing the deity of the temple. The garbha-griha was provided with a circumambulation passage around. However, there are also many subsidiary shrines within temple complexes, more common in the South Indian temple. In the initial stages of its evolution, the temples of North and South India were distinguished on the basis of some specific features like sikhara and gateways. In the north Indian temples, the sikhara remained the most prominent component while the gateway was generally unassuming. The most prominent features of South Indian temples were enclosures around the temples and the Gopurams (huge gateways). The Gopurams led the devotees into the sacred courtyard. There were many common features in the Northern and the Southern styles. These included the ground plan, positioning of stone-carved deities on the outside walls and the interior, and the range of decorative elements. The Hindu temple architecture is an open, symmetry-driven structure, with many variations, on a square grid of padas, depicting perfect geometric shapes such as circles and squares. A Hindu temple consists of an inner sanctum, the garbhagriha or womb-chamber, where the primary Murti or the image of a deity is housed along with Purusa. The garbhagriha is crowned by a tower-like Shikhara, also called the Vimana. The architecture includes an ambulatory for parikrama (circumambulation), a congregation hall, and sometimes an antechamber and porch. The Hindu temple architecture reflects a synthesis of arts, the ideals of dharma, beliefs, values and the way of life cherished under

Hinduism. It is a link between man, deities, and the Universal Purusa in a sacred space.

DESIGN :

The very essence of a Hindu temple is believed to have developed from the ideology that all things are one and everything is associated. The four essential and significant principles which are also aims of human life according to Indian philosophy are the quests for artha - wealth and prosperity; kama - sex and pleasure; dharma - moral life and virtues; and moksha - self knowledge and realisation. The mathematically structured spaces, intricate artworks, decorated and carved pillars and statues of Hindu temples illustrate and revere such philosophies. A hollow space without any embellishments situated at the centre of the temple, usually below the deity, may also be at the side or above the deity symbolises the complex concept of Purusha or Purusa meaning the Universal principle, Consciousness, the cosmic man or self without any form, however, omnipresent and associates all things. The Hindu temples suggest contemplations, encouragement and further purification of mind and prompt the process of self-realisation in devotees; however the preferred process is left to the convention of individual devotees.

SITE :

The areas of Hindu temple sites are usually vast with many of them built near water bodies, in the lap of nature. This is probably because according to ancient Sanskrit texts the most suitable site for a Hindu temple referred as 'Mandir' is at close proximity to water bodies and gardens where flowers blossom, chirping of birds and sounds of ducks and swans can be heard and animals can rest without any fear. These places exhibiting peace and tranquillity are recommended by the texts for building Hindu temples elucidating that Gods reside in such places. Although, leading Hindu temples are suggested near natural water bodies like confluence of rivers, river banks, seashores and lakes, according to the 'Puranas' and 'Bharat Samhita', Mandirs can even be constructed in sites devoid of natural water bodies. However, such suggestions include building up of a pond with water gardens in front of the 'Mandir' or towards left. In the absence of both natural and man-made water bodies, water remains typically

present during consecration of the deity or the Mandir. Part III of Chapter 93 of the Hindu text Vishnudharmottara Purana also recommends building of temples within caves and chiselled out stones; atop hills amidst spectacular and serene views; within hermitages and forests; beside gardens; and at the upper end of a street of a town.

LAYOUT :

Layout of a Hindu temple pursues a geometrical design known as vastu-purusha-mandala, the name of which is derived from the three vital components of the design namely Vastu meaning Vaas or a place of dwelling; Purusha, meaning the Universal principle; and Mandala meaning circle. Vastupurushamandala is a mystical diagram referred in Sanskrit as a Yantra. The symmetrical and self-repeating model of a Hindu temple demonstrated in the design is derived from the primary convictions, traditions, myths, fundamentality and mathematical standards. According to Vastupurushamandala, the most sacred and typical template for a Hindu temple is the 8x8 (64) grid Manduka Hindu Temple Floor Plan also referred as Bhekapada and Ajira. The layout displays a vivid saffron centre with intersecting diagonals which according to Hindu philosophy symbolises the Purusha. The axis of the Mandir is created with the aid of the four fundamentally significant directions and thus, a perfect square is created around the axis within the available space. This square which is circumscribed by the Mandala circle and divided into perfect square grids is held sacred. On the other hand, the circle is regarded as human and worldly that can be perceived or noticed in daily life such as the Sun, Moon, rainbow, horizon or water drops. Both the square and the circle support each other. The model is usually seen in large temples while an 81 sub-square grid is observed in ceremonial temple superstructures. Each square within the main square referred as 'Pada' symbolise a specific element that can be in the form of a deity, an apsara or a spirit. The primary or the innermost square/s of the 64 grid model called Brahma Padas is dedicated to Brahman. The Garbhagriha or centre of the house situated in the Brahma Padas houses the main deity. The outer concentric layer to Brahma Padas is the Devika Padas signifying facets of Devas or Gods which is again surrounded by the next layer, the Manusha Padas, with

the ambulatory. The devotees circumambulate clockwise to perform Parikrama in the Manusha Padas with Devika Padas in the inner side and the Paishachika Padas, symbolising facets of Asuras and evils, on the outer side forming the last concentric square. The three outer Padas in larger temples generally adorn inspirational paintings, carvings and images with the wall reliefs and images of different temples depicting legends from different Hindu Epics and Vedic stories. Illustrations of artha, kama, dharma and moksha can be found in the embellished carvings and images adorning the walls, ceiling and pillars of the temples.

ELEMENTS OF HINDU TEMPLE :

The Hindu temples adopted a definite structure in the later half of the 7th century [9]. The common elements of the Hindu temples in their original Sanskrit terms are as follows. The main compound of the temple is known as Vimana which comprises of two parts. The top portion of the Vimana is known as Sikhara and the lower portion which lies inside the Vimana is called Garbhagriha (cella or inner chamber).

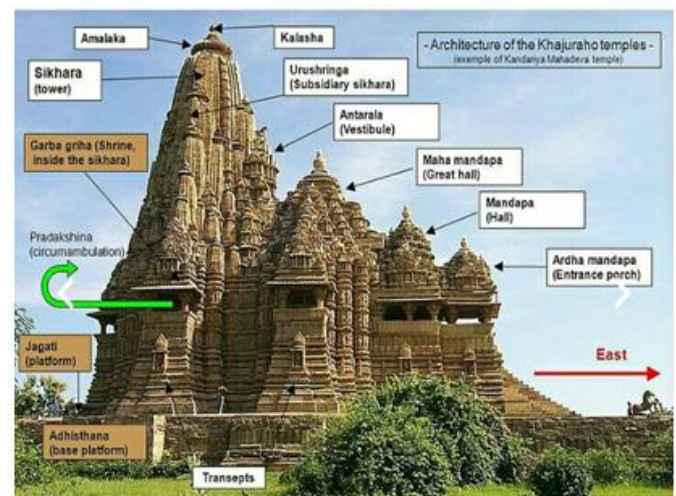


Fig.2 Element of Hindu Temples

- 1] "Sikhara" refers to the spire or the tower. It is shaped as pyramidal and tapering representing the mythological Meru or the highest mountain peak.
- 2] "Garbhagriha" refers to the womb chamber which is the innermost chamber of any temple where the deity resides. It is mainly square in layout and is entered through eastern side.
- 3] "PradakshinaPatha" refers to the ambulatory passageway for circumambulation and comprises of enclosed corridor outside the garbhagriha. The devotees walk around the deity in clockwise direction, paying their respect to the deity.

4] "Mandapa" is the pillared hall in front of the garbhagriha, used as assembling point by devotees for chant; rituals meditate or observe the priests perform the rituals. Sometimes, "Natamandira" is also provided in some temples which mean the hall for dancing. In some early temple structures, the mandapa was isolated and separate structure from the sanctuary.

5] "Antarala" refers to the intermediate chamber which joins the main sanctuary and the pillared hall of the temple premises.

6] "Ardhamandapa" refers to the front porch in the main entrance of the temple which leads to the main temple. Some other essential structural elements found in the Hindu temples are Mainly found in the south Indian temples,

7] "Gopurams" are the monumental and ornate entrance to the temple premises.

8] "Pitha" or the plinths of the main temple. The gateways typical to north Indian temples are "Toranas".

9] "Amalaka" is the fluted disc like stone placed at the pinnacle of sikhara

THE GEOMETRY OF HINDU TEMPLE :

The Hindu architecture was among the first ones that established a relationship between human figure and the system of proportion which was later studied by Leonardo da Vinci and Le Corbusier in modular system of measurement. It is based on the geometry of Vastupurushamandala in which the form of Purusha was made to fit the abstract idea of square as the highest geometric form. The basic form of Vastupurushamandala is the square which represents the earth and the circle represents the universe suggesting timelessness and infinity. The mandala is actually a square divided into smaller squares arranged in the form of a grid. Each smaller square depicts the area of the respective Gods. The most commonly used mandala is the square subdivided into 64 and 81 squares. Thus, the Vastupurushamandala was the basis of the ground floor plan for all Hindu temples. The basic shape of the temple plan was : the outermost ring of square of the mandala from thickness of walls of main shrine, the central 4 squares was reserved for the main deity, the inner ring of 12 squares form the walls of the garbhagriha and the next 16 to 28 forms the pradakshinapatha. These simple divisions of square

with permutation and combination became the base for the development of more complex temple compound.

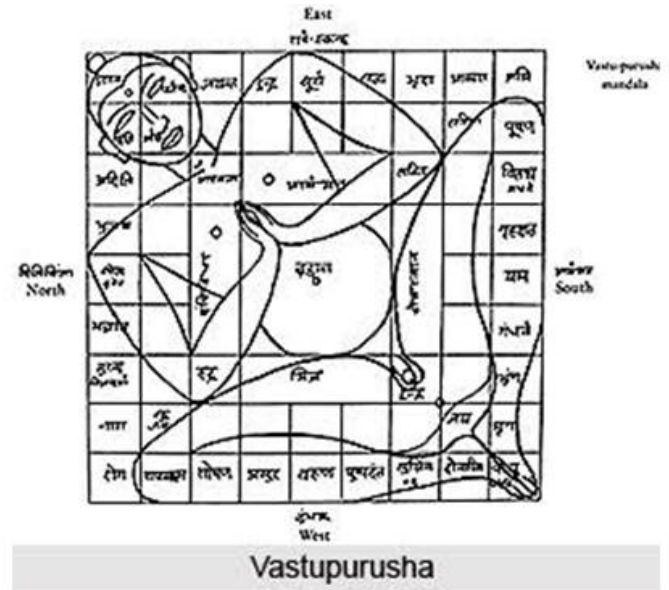


Fig.3 Vastupurush

SCULPTURES,ICONOGRAPHYANDORNAMENTATION :

Iconography is a branch of art history which studies the images of deities. It consists of identification of image based on certain symbols and mythology associated with them. Even though the fundamental myth and meaning of the deity may remain the same for centuries, its specific usage at a spot can be a response to its local or immediate social, political or geographical context. Every region and period produce its own distinct style of images with its regional variations in iconography. The temple is covered with elaborate sculptures and ornament that form a fundamental part of its conception. The placement of an image in a temple is carefully planned: for instance, river goddesses (Ganga and Yamuna) are visually found at the entrances in a Nagara temple, Dwarapalas are usually found on the gateway or gopurams of Dravida temples, similarly mithunas (erotic images), navagrahas (the 9 auspicious planets) and Yakshas are also placed at the entrances to guard them. Various forms or aspects of the main divinity are to be found on the outer walls of the sanctum. Theashtadikpalas (deities of direction) face eight key directions on the outer walls of the sanctum and/or on the outer walls of the temple

CLASSIFICATION OF INDIAN TEMPLES :

Indian temples can be classified into two broad orders as , 1]

Nagara (in North India) 2] Dravida (in South India) At times, the Vesara style of temples as an independent style created through the mixing of Nagara and Dravida orders.

NAGARA ARCHITECTURE :-

Nagara temples are found in northern part of india.Nagara is the style of temple architecture which became popular in Northern India. It is common here to build an entire temple on a stone platform with steps leading up to it. Unlike in south India, it doesn't usually have elaborate boundary walls or gateways. Earliest temples had only one shikhara (tower), but in the later periods, multiple shikharas came. The garbhagriha is always located directly under the tallest tower. Nagara temples have two distinct features :In plan, the temple is a square with a number of graduated projections in the middle of each side giving a cruciform shape with a number of re-entrant angles on each side. In elevation, a Shikhara, i.e., tower gradually inclines inwards in a convex curve, using a concentric rotating-squares and circles principle. Temples built between the 7th and the 14th centuries CE in the nagara style had mandapas (pavilions) The projections in the plan are also carried upwards to the top of the Shikhara and, thus, there is strong emphasis on vertical lines in elevation. The Nagara style is widely distributed over a greater part of India, exhibiting distinct varieties and ramifications in lines of evolution and elaboration according to each locality. An example of Nagara architecture is the KandariyaMahadeva Temple at khajuraho.

DRAVIDIAN ARCHITECTURE :-

Dravidian style temples consist almost invariably of the four following parts, differing only according to the age in which they were executed ,The principle part, the temple itself, is called the Vimana (or vimana). It is always square in plan and surmounted by a pyramidal roof of one or more stories; it contains the cell where the image of the god or his emblem is placed. Unlike the nagara temple, the Dravida temple is enclosed within a compound wall. The front wall has an entrance gateway in its centre, which is known as Gopura/ Gopuram.The shape of the main temple tower is known as Vimana (shikhara in nagara style). The vimana is like a stepped pyramid that rises up geometrically rather than the curving shikhara of north India. In south India, the word

Shikhara is used only for the crowning element at the top of the temple which is usually shaped like a small stupika or an octagonal cupola (this is equivalent to the amalaka or kalasha of north Indian temples). In north Indian temples, we can see images such as Mithunas (erotic) and the river goddesses, Ganga and Yamuna guarding the temple. But in the Dravida style of temple architecture, instead of these sculptures, we can see the sculptures of fierce dvarapalas or door keepers guarding the temple. A large water reservoir or a temple tank enclosed in the complex is general in south Indian temples.

THE CONSTRUCTION OF HINDU TEMPLE :

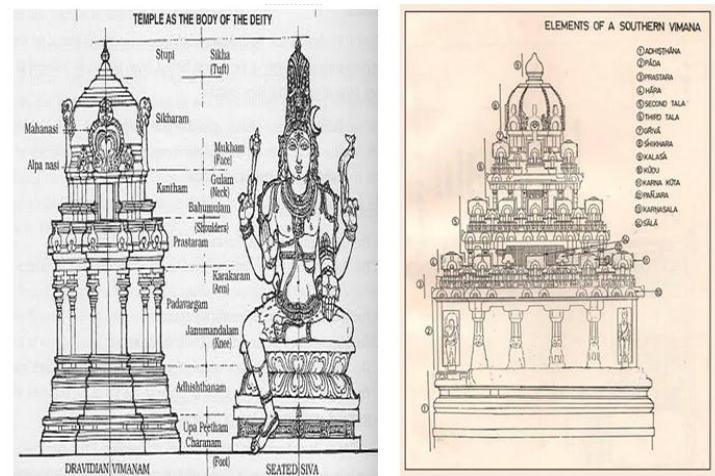


Fig.4 Temple Drawing

The available information of temple construction was collected from stone slabs, metal plates, palm leaves and manuscripts. Primarily, both Dravidian and Nagara temple construction followed same procedures up to construction of the temple. The slight variation occurred due to the variability of materials used for construction, the climate or the availability of manual labors for construction. It started with the selection of team headed by chief architect (sompuras in the west, mahapatras in the east and sthpatis in the south). The construction team consisted of four classes:

- 1) Sthapati (Main architect versed in traditional science, mathematics and Shilpashastras)
- 2.) Sutragrahin who did the work assigned by sthapati
- 3.) Taksaka who did the carving and cutting of stone
- 4.) Vardhakin is the mason or carpenter who assembled all the pieces. The construction of temple was a long and tremendous process which sometimes used to last for years. The first stage was the planning of the temple where the sthpati with the team did the selection of site, inspection of

site, orientation and layout of the site, selection of materials, quarrying and transportation of materials. The layout was done on the basis of Indian Circle Method and with the help of instrument known as "shanku yantra". The nature of main deity played a major role in determining the orientation of temple. The stone which was to be used for construction must have some quality features such as even color, hard and perfect and pleasing to touch. The second stage was the carving of different parts of the temples in which the *takshaka* directed the sculptors and *shilpis* to carve parts according to the drawings and specification. The cutting and carving the stone was done according to pre defined shape. The joining was also pre decided and rough joinery was created while cutting. The tools required such as hammers, chisel were locally made and sharpened regularly. The sketching was done either by charcoal piece or sharpened bamboo pieces. The polishing was done using stone bars. The third and the final stage consisted of assembling of the parts of temple which consisted of the actual construction of the temple. Ramps were constructed for the easy placement of heavy materials. The major joinery system used during the assembling of temple were mortise and tenon joint (peg is fixed between the two mortise cut out in two different stones and was used primarily used between two courses of masonry to avoid movement due to lateral forces) and lap joint. The usual thickness of stone used for wall varied from 800 mm to 1200 mm. The column consisted of 5 parts as two parts of base, one part as shaft and two as the capital of column. Also, columns and beams were monolithic structure

later developed into corbelling techniques. This method was primarily used for wooden construction but later evolved for stone construction. Even particular architectural elements and decorative details which had originated long before in early timber and thatch buildings persisted for centuries in one form or another throughout the era of stone construction even though the original purpose and context was lost. The horseshoe shaped window is a good example. Its origins lie in the *caitya* arch doorway first seen in the third century B.C. at the *Lomas Rishi* cave in the *Barabar Hills*. Later it was transformed into a dormer window known as a *gavaksha*; and eventually it became an element in a purely decorative pattern of interlaced forms seen time and time again on the towers of medieval temples. So, in its essence, Indian architecture is extremely conservative. Likewise, the simplicity of building techniques like post and beam and corbelled vaulting were preferred not necessarily because of lack of knowledge or skill, but because of religious necessity and tradition. On the other hand, the architect and sculptor were allowed a great deal of freedom in the embellishment and decoration of the prescribed underlying principles and formulae. The result was an overwhelming wealth of architectural elements, sculptural forms and decorative exuberance that is so characteristic of Indian temple architecture and which has few parallels in the artistic expression of the entire world. It is not surprising that the broad geographical, climatic, cultural, racial, historical and linguistic differences between the northern plains and the southern peninsula of India resulted, from early on, in distinct architectural styles. The *Shastras*, the ancient texts on architecture, classify temples into three different orders; the *Nagara* or 'northern' style, the *Dravida* or 'southern' style, and the *Vesara* or hybrid style which is seen in the Deccan between the other two. There are also distinct styles in peripheral areas such as Bengal, Kerala and the Himalayan valleys. But by far the most numerous buildings are in either the *Nagara* or the *Dravida* styles and the earliest surviving structural temples can already be seen as falling into the broad classifications of either one or the other. In the early years the most obvious difference between the two styles is the shape of their superstructures. Pillared outdoor halls or pavilions called *Mandapa* meant for public rituals with the ones in the east



Fig.5 element of temple

The tarbeated system or the post and lintel method was the basic construction technique used in Hindu temples which was

serving as waiting room for devotees adorns the large temples. The Mandir's spire, usually a tapering conical or pyramidal superstructure with a dome designed adhering principles of concentric squares and circles and referred in North India as Shikhaa and Vimana in South India is symmetrically aligned exactly above the Brahma Pada or the central core of the Mandir. Compounds of many larger temples house smaller temples and shrines that also follow fundamental aspects of grids, symmetry and mathematical perfection. Repetition and mirroring of fractal-like design structure forms a significant principle of Hindu temple designs. The manuals comprising of Hindu temple layouts elucidates plans with squares in the count of 1, 4, 9, 16, 25 and thus, reaching up to 1024. Each plan of different Padas has individual significance, for instance in one pada plan the pada is regarded as the seat for a devotee or hermit to perform yoga, meditation or offer Vedic fire; a four Padas plan, also a meditative design represents a core at the center; and a nine Padas layout that generally forms model of smallest temples has a divine surrounded centre. Although the perfect square grid principle is primarily found in different temples of India, some others hold exception such as the Teli-ka-mandir and the Naresar temple in Madhya Pradesh and the Nakti-Mata temple in Rajasthan, indicating that Hinduism welcomed flexibility, creativity and aesthetic independence of artists.

CONCLUSION :

People have put aside any constraints of money and time to erect inspiring structures built on faith, science and mystery. For most of us, the science of temples built on thousands of years of research and development has been lost...the understanding has been lost. By understanding the science of Indian temples, we can experience the intelligence, power and miracles that these structures were made from and for. A look into the ancient past of India and its temples reveals the fundamental science and purpose behind temple building. Far from being a place of prayer or worship, temples were created as powerful spaces where an individual could imbibe the enshrined energies. Most temples were created to address a particular aspect of life, and were thus consecrated to activate one or two particular chakras, the main energy centers within the human system. The main deity was often complemented

by one or more minor deities carefully positioned along the path of approach to the main deity. Looking at these structures, it is apparent that the temples were built to a certain pattern, certain understanding and purpose, catering to the needs of the individual and the society. Temples are located strategically at a place where the positive energy is abundantly available from the magnetic and electric wave distributions of north/south pole thrust. The main idol is placed in the core center of the temple. In fact, the temple structure is built after the idol has been placed. The place of the deity is where earth's magnetic waves are found to be maximum

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